Part 3

Emergency Vehicle Emissions Regulations

(September 25, 2026)

Title 13, Sections

1900.0.1, 1961.2.1, 1961.3.1, 1962.2.1, 1962.3,1, 1965.0.1, 1969.0.1, 1976.0.1, 1978.0.1, 2037.0.1, 2038.0.1, 2112.0.1, 2139.0.1, 2140.0.1, 2147.0.1, 2317.0.1, and 2903.0.1

[Note: This version of the Final Regulation Order complies with Government Code section 11346.2, subdivision (a)(3). The amendments are shown in underline to indicate additions and strikethrough to indicate deletions from the existing regulatory text. Subsections for which no changes are made in this rulemaking are indicated with "* * * * *." The Final Regulation Order is being presented in two versions. For ease of readability, and to review the amendments in an Accessible format that can toggle between the amendments in strikeout/underline and a "clean" version with the amendments incorporated into the regulatory text, please refer to the Word version of this Final Regulation Order.]

The Chapters and Sections of title 13, California Code of Regulations that are being proposed for amendment per this regulatory proposal are as follows.

Chapter 1. Motor Vehicle Pollution Control Devices

Section 1900.0.1. Definitions. (Alternative)

Section 1961.2.1. Exhaust Emission Standards and Test Procedures--2015 through 2025 Model Year Passenger Cars and Light-Duty Trucks, and 2015 through 2028 Model Year Medium-Duty Vehicles. (Alternative)

Section 1961.3.1. Greenhouse Gas Exhaust Emission Standards and Test Procedures - 2017 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles. (Alternative)

Section 1962.2.1. Zero-Emission Vehicle Standards for 2018 through 2025 Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles. (Alternative)

Section 1962.3.1. Electric Vehicle Charging Requirements. (Alternative)

Section 1965.0.1. Emission Control, Smog Index, and Environmental Performance Labels - 1979 and Subsequent Model-Year Motor Vehicles. (Alternative)

Section 1969.0.1. Motor Vehicle Service Information--1994 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Engines and Vehicles, and 2007 and Subsequent Model Heavy-Duty Engines. (Alternative)

Section 1976.0.1. Standards and Test Procedures for Motor Vehicle Fuel Evaporative Emissions. (Alternative)

Section 1978.0.1. Standards and Test Procedures for Vehicle Refueling Emissions. (Alternative)

Section 2037.0.1. Defects Warranty Requirements for 1990 and Subsequent Model Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, and Motor Vehicle Engines Used in Such Vehicles. (Alternative)

Section 2038.0.1. Performance Warranty Requirements for 1990 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, and Motor Vehicle Engines Used in Such Vehicles. (Alternative)

Chapter 2. Enforcement of Vehicle Emission Standards and Surveillance Testing

Section 2112.0.1. Definitions. (Alternative)

Section 2139.0.1. Testing. (Alternative)

Section 2140.0.1. Notification and Use of Test Results. (Alternative)

Section 2147.0.1. Demonstration of Compliance with Emission Standards. (Alternative)

Chapter 8. Clean Fuels Program

Section 2317.0.1. Satisfaction of Designated Clean Fuel Requirements with a Substitute Fuel. (Alternative)

Chapter 16. Certification Fees for Mobile Sources

Section 2903.0.1. Definitions. (Alternative)

Final Regulation Order

Title 13, California Code of Regulations

Amend Sections 1900.0.1, 1961.2.1, 1961.3.1, 1962.2.1, 1962.3,1, 1965.0.1, 1969.0.1, 1976.0.1, 1978.0.1, 2037.0.1, 2038.0.1, 2112.0.1, 2139.0.1, 2140.0.1, 2147.0.1, 2317.0.1, and 2903.0.1, to read as follows:

§ 1900.0.1 Definitions. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

(a) The definitions of this section supplement and are governed by the definitions set forth in chapter 2 (commencing with section 39010), part 1, division 26 of the Health and Safety Code, unless a specific definition set forth therein has been revised in section (b) below to conform to federal law pursuant to Health and Safety Code section 39601. The definitions set forth in the applicable model-year new vehicle certification and assembly-line test procedures adopted in this chapter are hereby incorporated by reference.

(b) In addition to the definitions incorporated under subdivision (a), the following definitions shall govern the provisions of this chapter;

(1) "Add-on part" means any aftermarket part which is not a modified part or a replacement part.

(2) "Consolidated part" means a part which is designed to replace a group of original equipment parts and which is functionally identical of those original equipment parts in all respects which in any way affect emissions (including durability).

(3) "Emission standard" as it applies to compliance with the requirements applicable to motor vehicles and motor vehicle engines set forth in Article 2, Chapter 1, Division 3 of Title 13, California Code of Regulations, and the associated remedies provided in the Health and Safety Code for noncompliance, means:

(a) a numerical limit on the amount of a given pollutant that a motor vehicle or motor vehicle engine may emit into the atmosphere; or

(b) a requirement that a motor vehicle or motor vehicle engine be equipped with a certain type of pollution-control device or some other design feature related to the control of emissions.

(4) "Evaporative emission standards" are a subset of emission standards that refer to the specific motor vehicle fuel evaporative emission standards and test procedures incorporated by reference in title 13, CCR section 1976 to which a vehicle is certified.

(5) "Exhaust emission standards" or "tailpipe emission standards" are a subset of emission standards that collectively refer to the specific standards to which a motor vehicle or motor vehicle engine is certified.

(6) "Emissions-related part" means any automotive part, which affects any regulated emissions from a motor vehicle which is subject to California or federal emission standards. This includes, at a minimum, those parts specified in the "Emissions-Related Parts List," adopted by the State Board on November 4, 1977, as last amended June 1, 1990.

(7) "Gaseous fuels" means any liquefied petroleum gas, liquefied natural gas, or compressed natural gas fuels for use in motor vehicles.

(8) "Heavy-duty engine" means an engine which is used to propel a heavy-duty vehicle.

(9) "Heavy-duty vehicle" means any motor vehicle having a manufacturer's gross vehicle weight rating greater than 8,500 pounds, except passenger cars.

(10) "Identical device" means a crankcase emission control device identical in all respects, including design, materials, manufacture, installation and operation, with a device which has been certified by the Air Resources Board or the Motor Vehicle Pollution Control Board pursuant to the Health and Safety Code, but which is manufactured by a person other than original manufacturer of the device.

(11) "Independent low volume manufacturer" means a manufacturer with California annual sales of less than 10,000 new passenger cars, light-duty trucks and medium-duty vehicles following aggregation of sales pursuant to this section 1900(b)(8). Annual sales shall be determined as the average number of sales sold for the three previous consecutive model years for which a manufacturer seeks certification; however, for a manufacturer certifying for the first time in California, annual sales shall be based on projected California sales for the model year. 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. 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, except in circumstances for which the Executive Officer determines that 10% or greater ownership by one of the firms does not result in responsibility for overall direction of both firms; 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.

(12) "Intermediate volume manufacturer" means any pre-2001 model year manufacturer with California sales between 3,001 and 60,000 new light- and medium-duty vehicles per model year based on the average number of vehicles sold by the manufacturer each model year from 1989 to 1993; any 2001 through 2002 model year manufacturer with California sales between 4,501 and 60,000 new light- and medium-duty vehicles per model year based on the average number of vehicles sold by the manufacturer each model year from 1989 to 1993; any 2003 through 2017 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; and any 2018 and subsequent model year manufacturer with California sales between 4,501 and 20,000 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 2005 through 2017 model year zero-emission vehicle requirements for intermediate-volume manufacturers under section 1962(b) or 1962.1(b), as applicable, the annual sales from different firms shall be aggregated in the case of (1) vehicles produced by two or more firms, each one of which either has a greater than 50% equity ownership in another or is more than 50% owned by another; or (2) vehicles produced by any two or more firms if a third party has equity ownership of greater than 50% in each firm.

For purposes of applying the 2009 through 2016 model year Greenhouse Gas requirements for intermediate volume manufacturers under section 1961.1, 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.

For the 2018 and subsequent 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 33.4% or greater part owned by another; or (2) vehicles produced by any two or more firms if a third party has equity ownership of 33.4% 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 any firms where the vehicles are manufactured by the same entity and the importer or distributor is an authorized agent of the entity.

(13) "Large volume manufacturer" means any 2000 and subsequent model year manufacturer that is not a small volume manufacturer, or an independent low volume manufacturer, or an intermediate volume manufacturer.

(14) "Light-duty truck" means any 2000 and subsequent model motor vehicle certified to the standards in section 1961(a)(1), or 1961.2 rated at 8,500 pounds gross vehicle weight or less, and any other 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.

(15) "Medium-duty passenger vehicle" means any medium-duty vehicle with a gross vehicle weight rating of less than 10,000 pounds that is designed primarily for the transportation of persons. The medium-duty passenger vehicle definition does not include any vehicle which: (1) is an "incomplete truck" i.e., is a truck that does not have the primary load carrying device or container attached; or (2) has a seating capacity of more than 12 persons; or (3) is designed for more than 9 persons in seating rearward of the driver's seat; or (4) is equipped with an open cargo area of 72.0 inches in interior length or more. A covered box not readily accessible from the passenger compartment will be considered an open cargo area, for purposes of this definition.

(16) "Medium-duty vehicle" means any pre-1995 model year heavy-duty vehicle having a manufacturer's gross vehicle weight rating of 8,500 pounds or less; any 1992 through 2006 model-year heavy-duty low-emission, ultra-low-emission, super-ultra-low-emission or zero-emission vehicle certified to the standards in section 1960.1(h)(2) having a manufacturer's gross vehicle weight rating of 14,000 pounds or less; any 1995 through 2003 model year heavy-duty vehicle certified to the standards in section 1960.1(h)(1) having a manufacturer's gross vehicle weight rating of 14,000 pounds or less; and any 2000 and subsequent model heavy-duty low-emission, ultra-low-emission, super-ultra-low-emission or zero-emission vehicle certified to the standards in section 1961(a)(1), 1961.2, 1962, 1962.1, or 1962.2 having a manufacturer's gross vehicle weight rating between 8,501 and 14,000 pounds.

(17) "Modified part" means any aftermarket part intended to replace an original equipment emission-related part and which is not functionally identical to the original equipment part in all respects which in any way affect emissions, excluding a consolidated part.

(18) "Motorcycle Engine" means an engine which is used to propel a new, street-use motorcycle.

(19) [Reserved]

(20) "Passenger car" means any motor vehicle designed primarily for transportation of persons and having a design capacity of twelve persons or less.

(21) "Reactivity adjustment factor" means a fraction applied to the NMOG emissions from a vehicle powered by a fuel other than conventional gasoline for the purpose of determining a gasoline-equivalent NMOG level. The reactivity adjustment factor is defined as the ozone-forming potential of clean fuel vehicle exhaust divided by the ozone-forming potential of gasoline vehicle exhaust.

(22) "Recall" means:

(A) The issuing of notices directly to consumers that vehicles in their possession or control should be corrected, and/or

(B) Efforts to actively locate and correct vehicles in the possession or control of consumers.

(23) "Replacement part" means any aftermarket part intended to replace an original equipment emissions-related part and which is functionally identical to the original equipment part in all respects which in any way affect emissions (including durability), or a consolidated part.

(24) "Subgroup" means a set of vehicles within an engine family distinguishable by characteristics contained in the manufacturer's application for certification.

(25) "Small volume manufacturer" means, with respect to the 2001 and subsequent model-years, a manufacturer with California sales less than 4,500 new passenger cars, light-duty trucks, medium-duty vehicles, heavy-duty vehicles and heavy-duty engines based on the average number of vehicles sold for the three previous consecutive model years for which a manufacturer seeks certification as a small volume manufacturer; however, for manufacturers 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. Except as provided in the next paragraph, for the 2009 through 2017 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 any firms where the vehicles are manufactured by the same entity and the importer or distributor is an authorized agent of the entity. Notwithstanding the provisions of this paragraph, upon application to the Executive Officer, a manufacturer may be classified as a "small volume manufacturer" for the 2013 through 2017 model years if the Executive Officer determines that it is operationally independent of the firm that owns 10% or more of the applicant or has a greater than 10% equity ownership in the applicant based on the criteria provided in the last paragraph of this subsection (b)(22).

For purposes of compliance with the zero-emission vehicle requirements, heavy-duty vehicles and engines shall not be counted as part of a manufacturer's sales. For purposes of applying the 2005 through 2017 model year zero-emission vehicle requirements for small-volume manufacturers under sections 1962(b) and 1962.1(b), the annual sales from different firms shall be aggregated in the case of (1) vehicles produced by two or more firms, each one of which either has a greater than 50% equity ownership in another or is more than 50% owned by another; or (2) vehicles produced by any two or more firms if a third party has equity ownership of greater than 50% in each firm. Notwithstanding the provisions of this paragraph, upon application to the Executive Officer, a manufacturer may be classified as a "small volume manufacturer" for the 2013 through 2017 model years if the Executive Officer determines that it is operationally independent of the firm that owns 50% or more of the applicant or has a greater than 50% equity ownership in the applicant based on the criteria provided in the last paragraph of this subsection (b)(22).

Except as provided in the next paragraph, for the 2018 and subsequent 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 33.4% or greater part owned by another; or (2) vehicles produced by any two or more firms if a third party has equity ownership of 33.4% 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 any firms where the vehicles are manufactured by the same entity and the importer or distributor is an authorized agent of the entity. Notwithstanding the provisions of this paragraph, upon application to the Executive Officer, a manufacturer may be classified as a "small volume manufacturer" for the 2018 and subsequent model years if the Executive Officer determines that it is operationally independent of the firm that owns 33.4% or more of the applicant or has a greater than 33.4% equity ownership in the applicant based on the criteria provided in the last paragraph of this subsection (b)(22).

For the purposes of this paragraph, all manufacturers whose annual sales are aggregated together under the provisions of this subsection (b)(22) shall be defined as "related manufacturers." Notwithstanding such aggregation, the Executive Officer may make a determination of operational independence if all of the following criteria are met for at least 24 months preceding the application submittal: (1) for the three years preceding the year in which the initial application is submitted, the average California sales for the applicant does not exceed 4,500 vehicles per year; (2) no financial or other support of economic value is provided by related manufacturers for purposes of design, parts procurement, R&D and production facilities and operation, and any other transactions between related manufacturers are conducted under normal commercial arrangements like those conducted with other parties, at competitive pricing rates to the manufacturer; (3) related manufacturers maintain separate and independent research and development, testing, and production facilities; (4) the applicant does not use any vehicle powertrains or platforms developed or produced by related manufacturers; (5) patents are not held jointly with related manufacturers; (6) related manufacturers maintain separate business administration, legal, purchasing, sales, and marketing departments, as well as autonomous decision-making on commercial matters; (7) the overlap of the Board of Directors between related manufacturers is limited to 25% with no sharing of top operational management, including president, chief executive officer, chief financial officer, and chief operating officer, and provided that no individual overlapping director or combination of overlapping directors exercises exclusive management control over either or both companies; and (8) parts or components supply between related companies must be established through open market process, and to the extent that the manufacturer sells parts/components to non-related manufacturers, it does so through the open market a competitive pricing. Any manufacturer applying for operational independence must submit to ARB an Attestation Engagement from an independent certified public accountant or firm of such accountants verifying the accuracy of the information contained in the application, as defined by and in accordance with the procedures established in 40 C.F.R. § 80.125, as last amended January 19, 2007, which is incorporated herein by reference. The applicant must submit information to update any of the above eight criteria as material changes to any of the criteria occur. If there are no material changes to any of the criteria, the applicant must certify that to the Executive Officer annually. With respect to any such changes, the Executive Officer may consider extraordinary conditions (e.g., changes to economic conditions, unanticipated market changes, etc.) and may continue to find the applicant to be operationally independent. In the event that a manufacturer loses eligibility as a "small volume manufacturer" after a material change occurs, the manufacturer must begin compliance with the primary emissions program in the third model year after the model year in which the

manufacturer loses its eligibility. The Executive Officer may, in his or her discretion, re-establish lost "small volume manufacturer" status if the manufacturer shows that it has met the operational independence criteria for three consecutive years.

Note: Authority cited: Sections 39010, 39600, 39601, 43013, 43018, 43101 and 43104, Health and Safety Code. Reference: Sections 39002, 39003, 39010, 39500, 40000, 43000, 43013, 43018.5, 43100, 43101, 43101.5, 43102, 43103, 43104, 43106 and 43204, Health and Safety Code; and Section 27156, Vehicle Code.

§ 1961.2.1. Exhaust Emission Standards and Test Procedures - 2015 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

Introduction. This section 1961.2.1 contains the California "LEV III" exhaust emission standards for 2015 and subsequent model year passenger cars, light-duty trucks, and medium-duty vehicles. A manufacturer must demonstrate compliance with the exhaust standards in subsection (a) applicable to specific test groups, and with the composite phase-in requirements in subsection (b) applicable to the manufacturer's entire fleet.

Before the 2015 model year, a manufacturer that produces vehicles that meet the standards in subsection (a) has the option of certifying the vehicles to those standards, in which case the vehicles will be treated as LEV III vehicles for purposes of the fleet-wide phase-in requirements. Similarly, 2015 - 2019 model-year vehicles may be certified to the "LEV II" exhaust emission standards in subsection 1961(a)(1), in which case the vehicles will be treated as LEV II vehicles for purposes of the fleet-wide phase-in requirements.

A manufacturer has the option of certifying engines used in incomplete and diesel medium-duty vehicles with a gross vehicle weight rating of greater than 10,000 lbs. GVW to the heavy-duty engine standards and test procedures set forth in title 13, CCR, subsections 1956.8(c) and (h).

All medium-duty vehicles with a gross vehicle weight rating of less than or equal to 10,000 lbs. GVW, including incomplete otto-cycle medium-duty vehicles and medium-duty vehicles that use diesel cycle engines, must be certified to the LEV III chassis standards and test procedures set forth in this section in 2020 and subsequent model years.

Pooling Provision.

For each model year, a manufacturer must demonstrate compliance with this section 1961.2.1 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 vehicles that are certified to the California exhaust emission standards in subsection (a) and subsection 1961(a)(1), and are produced and delivered for sale in California; or

Option 2: the total number of passenger cars, light-duty trucks, and medium-duty vehicles that are certified to the California exhaust emission standards in subsection (a) and subsection 1961(a)(1), and are produced and delivered for sale in California, the District of Columbia, and all states that have adopted California's criteria pollutant emission standards set forth in this section for that model year pursuant to section 177 of the federal Clean Air Act (42 U.S.C. § 7507).

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. Once a manufacturer has selected compliance Option 2, that selection applies unless the manufacturer selects Option 1 and notifies the Executive Officer of that selection in writing before the start of the applicable model year.

When a manufacturer is demonstrating compliance using Option 2 for a given model year, the term "in California" as used in this section means California, the District of Columbia, and all states that have adopted California's criteria pollutant emission standards set forth in this section for that model year pursuant to Section 177 of the federal Clean Air Act (42 U.S.C. § 7507).

(a) Exhaust Emission Standards.

(1) *"LEV III" Exhaust Standards.* The following standards are the maximum exhaust emissions for the full useful life from new 2015 and subsequent model year "LEV III" passenger cars, light-duty trucks, and medium-duty vehicles, including fuel-flexible, bi-fuel and dual-fuel vehicles when operating on the gaseous or alcohol fuel they are designed to use. 2015 – 2019 model-year LEV II LEV vehicles may be certified to the 150,000 mile NMOG+NOx emission standards for LEV160, LEV395, or LEV630, as applicable, in this subsection (a)(1) and the corresponding NMOG+NOx numerical values in subsection (a)(4), in lieu of the separate NMOG and NOx exhaust emission standards in subsection 1961(a)(1) and the corresponding NMOG numerical values in subsection 1961(a)(4) and LEV II ULEV vehicles may be certified to the 150,000 mile NMOG+NOx emission standards for ULEV125, ULEV340, or ULEV570, as applicable, in this subsection (a)(1) and the corresponding NMOG+NOx numerical values in subsection (a)(4), in lieu of the separate NMOG and NOx exhaust emission standards in subsection 1961(a)(1) and the corresponding NMOG numerical values in subsection 1961(a)(4). 2015 – 2019 model-year LEV II SULEV vehicles that receive a partial ZEV allowance in accordance with the "California Exhaust Emission Standards and Test Procedures for 2009 through 2017 Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes" and 2015 – 2016 model year vehicles that are allowed to certify to LEV II SULEV standards using "carryover" of emission test data under the provisions in subsection (b)(2) may be certified to the 150,000 mile NMOG+NOx emission standards for SULEV30, SULEV170, or SULEV230, as applicable, in this subsection

(a)(1) and the corresponding NMOG+NOx numerical values in subsection (a)(4), in lieu of the separate NMOG and NOx exhaust emission standards in subsection 1961(a)(1) and the corresponding NMOG numerical values in subsection 1961(a)(4). LEV II SULEV vehicles that do not either receive a partial ZEV allowance or (2) certify to LEV II SULEV standards in the 2015 – 2016 model years using "carryover" of emission test data may not certify to combined NMOG+NOx standards. LEV II vehicles that certify to combined NMOG+NOx standards will be treated as LEV II vehicles for purposes of the fleet-wide phase-in requirements.

LEV III Exhaust Mass Emission Standards for New 2015 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles[3]

Vehicle Type	*Durability Vehicle Basis (mi)*	*Vehicle Emission Category* [2]	*NMOG + Oxides of Nitrogen*[4] *(g/mi)*	*Carbon Monoxide (g/mi)*	*Formaldehyde (mg/mi)*	*Particulates*[1] *(g/mi)*
All PCs; LDTs 8500 lbs. GVWR or less; and MDPVs Vehicles in this category are tested at their loaded vehicle weight	150,000	LEV160	0.160	4.2	4	0.01
		ULEV125	0.125	2.1	4	0.01
		ULEV70	0.070	1.7	4	0.01
		ULEV50	0.050	1.7	4	0.01
		SULEV30	0.030	1.0	4	0.01
		SULEV20	0.020	1.0	4	0.01
MDVs 8501 - 10,000 lbs. GVWR, excluding MDPVs Vehicles in this category are tested at their adjusted loaded vehicle weight	150,000	LEV395[5,6]	0.395	6.4	6	0.12
		ULEV340[5,6]	0.340	6.4	6	0.06
		ULEV250	0.250	6.4	6	0.06
		ULEV200	0.200	4.2	6	0.06
		SULEV170	0.170	4.2	6	0.06
		SULEV150	0.150	3.2	6	0.06
MDVs 10,001-14,000 lbs. GVWR Vehicles in this category are tested at their adjusted loaded vehicle weight	150,000	LEV630[5,6]	0.630	7.3	6	0.12
		ULEV570[5,6]	0.570	7.3	6	0.06
		ULEV400	0.400	7.3	6	0.06
		ULEV270	0.270	4.2	6	0.06
		SULEV230	0.230	4.2	6	0.06
		SULEV200	0.200	3.7	6	0.06

[1] These standards shall apply only to vehicles not included in the phase-in of the particulate standards set forth in subsection (a)(2).

[2] The numeric portion of the category name is the NMOG+NOx value in thousandths of grams per mile.

~~[3] These standards apply at both low altitude and high altitude except as noted in footnote 4.~~

~~[4] The LEV III NMOG+NOx 150,000-mile exhaust mass emission standards for passenger cars and light-duty trucks that apply at high-altitude conditions are: 0.160 g/mi for LEV160 and ULEV125; 0.105 g/mi for ULEV70; 0.070 g/mi for ULEV50; and 0.050 g/mi for SULEV30 and SULEV20.~~

~~[5] These vehicle emission categories are only applicable for the 2015 through 2021 model years.~~

~~[6] The following NOx standards also apply for certification testing with emission data vehicles: 0.2 g/mi for LEV395 and ULEV340; 0.4 g/mi for LEV630 and ULEV570.~~

(2) "LEV III" Particulate Standards.

(A) *Particulate Standards for Passenger Cars, Light-Duty Trucks, and Medium- Duty Passenger Vehicles*. Beginning in the 2017 model year, a manufacturer, except a small volume manufacturer, shall certify a percentage of its passenger car, light-duty truck, and medium-duty passenger vehicle fleet to the following particulate standards according to the following phase-in schedule. These standards are the maximum particulate emissions allowed at full useful life. All vehicles certifying to these particulate standards must certify to the LEV III exhaust emission standards set forth in subsection (a)(1).

LEV III Particulate Emission Standard Values and Phase-in for Passenger Cars, Light-Duty Trucks, and Medium- Duty Passenger Vehicles		
Model Year	**% of vehicles certified to a 3 mg/mi standard**	**% of vehicles certified to a 1 mg/mi standard**
2017	10	0
2018	20	0
2019	40	0
2020	70	0
2021	100	0
2022	100	0
2023	100	0
2024	100	0
2025	75	25
2026	50	50
2027	25	75
2028 and subsequent	0	100

(B) Particulate Standards for Medium-Duty Vehicles Other than Medium-Duty Passenger Vehicles.

1. Beginning in the 2017 model year, a manufacturer, except a small volume manufacturer, shall certify a percentage of its medium-duty vehicle fleet to the following particulate standards. These standards are the maximum particulate emissions allowed at full useful life. All vehicles certifying to these particulate standards must certify to the LEV III exhaust emission standards set forth in subsection (a)(1). This subsection (a)(2)(B)1 shall not apply to medium-duty passenger vehicles.

LEV III Particulate Emission Standard Values for Medium-Duty Vehicles, Other than Medium-Duty Passenger Vehicles	
Vehicle Type[1]	**Particulates (mg/mi)**
MDVs 8501 - 10,000 lbs. GVWR, excluding MDPVs	8
MDVs 10,001 - 14,000 lbs. GVWR	10

[1] Vehicles in these categories are tested at their adjusted loaded vehicle weight.

2. A manufacturer of medium-duty vehicles, except a small volume manufacturer, shall certify at least the following percentage of its medium-duty vehicle fleet to the particulate standards in subsection (a)(2)(B)1 according to the following phase-in schedule. This subsection (a)(2)(B)2 shall not apply to medium-duty passenger vehicles.

LEV III Particulate Emission Standard Phase-in for Medium-Duty Vehicles, Other than Medium-Duty Passenger Vehicles	
Model Year	**Total % of MDVs certified to the 8 mg/mi PM Standard or to the 10 mg/mi PM Standard, as applicable**
2017	10
2018	20
2019	40
2020	70
2021 and subsequent	100

(C) *Particulate Standards for Small Volume Manufacturers.* In the 2021 through 2027 model years, a small volume manufacturer shall certify 100 percent of its passenger car, light-duty truck, and medium-duty passenger vehicle fleet to the 3 mg/mi particulate standard. In the 2028 and subsequent model years, a small volume manufacturer shall certify 100 percent of its passenger car, light-duty truck, and medium-duty passenger vehicle fleet to the 1 mg/mi particulate standard. In the 2021 and subsequent model years, a small volume manufacturer shall certify 100 percent of its medium-duty vehicles 8501 - 10,000 lbs. GVWR, excluding MDPVs, to the 8 mg/mi particulate standard. In the 2021 and subsequent model years, a small volume manufacturer shall certify 100 percent of its medium-duty vehicles 10,001 - 14,000 lbs. GVWR to the 10 mg/mi particulate standard. These standards are the maximum particulate emissions allowed at full useful life. All vehicles certifying to these particulate standards must certify to the LEV III exhaust emission standards set forth in subsection (a)(1).

(D) Alternative Phase-in Schedule for Particulate Standards.

1. *Alternative Phase-in Schedules for the 3 mg/mi Particulate Standard for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles.* A manufacturer may use an alternative phase-in schedule to comply with the 3 mg/mi particulate standard phase-in requirements as long as: ~~(1) the percent of PC+LDT+MDPV vehicles meeting the 3 mg/mi particulate standard in the 2019 model year is greater than or equal to the highest percent of PC+LDT+MDPV vehicles meeting the 3 mg/mi particulate standard in the 2016, 2017, and 2018 model years individually; the percent of PC+LDT+MDPV vehicles meeting the 3 mg/mi particulate standard in the 2020 model year is greater than or equal to the highest percent of PC+LDT+MDPV vehicles meeting the 3 mg/mi particulate standard in the 2016, 2017, and 2018 model years individually; and (3)~~ equivalent PM emission reductions are achieved by the 2021 model year from passenger cars, light-duty trucks, and medium-duty passenger vehicles. Model year emission reductions shall be calculated by multiplying the percent of PC+LDT+MDPV vehicles meeting the 3 mg/mi particulate standard in a given model year (based on a manufacturer's projected sales volume of vehicles in each category) by 5 for the 2017 model year, 4 for the 2018 model year, 3 for the 2019 model year, 2 for the 2020 model year, and 1 for the 2021 model year. The yearly results for PC+LDT+MDPV vehicles shall be summed together to determine a cumulative total for

PC+LDT+MDPV vehicles. In the 2021 model year, the cumulative total must be equal to or greater than 490, and 100 percent of the manufacturer's passenger cars, light-duty trucks, and medium-duty passenger vehicles must be certified to the 3 mg/mi particulate standard, to be considered equivalent. A manufacturer may add vehicles introduced before the 2017 model year (e.g., the percent of vehicles introduced in 2016 would be multiplied by 5) to the cumulative total.

2. *Alternative Phase-in Schedules for the 1 mg/mi Particulate Standard for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles*. A manufacturer may use an alternative phase-in schedule to comply with the 1 mg/mi particulate standard phase-in requirements as long as equivalent PM emission reductions are achieved by the 2028 model year from passenger cars, light-duty trucks, and medium- duty passenger vehicles. Model year emission reductions shall be calculated by multiplying the percent of PC+LDT+MDPV vehicles meeting the 1 mg/mi particulate standard in a given model year (based on a manufacturer's projected sales volume of vehicles in each category) by 4 for the 2025 model year, 3 for the 2026 model year, 2 for the 2027 model year, and 1 for the 2028 model year. The yearly results for PC+LDT+MDPV vehicles shall be summed together to determine a cumulative total for PC+LDT+MDPV vehicles. In the 2028 model year, the cumulative total must be equal to or greater than 500, and 100 percent of the manufacturer's passenger cars, light-duty trucks, and medium-duty passenger vehicles must be certified to the 1 mg/mi particulate standard to be considered equivalent. A manufacturer may add vehicles introduced before the 2025 model year (e.g., the percent of vehicles introduced in 2024 would be multiplied by 4) to the cumulative total.

3. Alternative Phase-in Schedules for the Particulate Standards for Medium-Duty Vehicles Other than Medium-Duty Passenger Vehicles. A manufacturer may use an alternative phase-in schedule to comply with the particulate standard phase-in requirements as long as equivalent PM emission reductions are achieved by the 2021 model year from medium-duty vehicles other than medium-duty passenger vehicles. Model year emission reductions shall be calculated by multiplying the total percent of MDVs certified to the 8 mg/mi PM standard or to the 10 mg/mi PM standard, as applicable, in a given model year (based on a manufacturer's projected sales volume of vehicles in each category) by 5 for the 2017 model year, 4 for the 2018 model year, 3 for the 2019 model year, 2 for the 2020 model year, and 1 for the 2021 model year. The yearly results for MDVs shall be summed together to determine a cumulative total for MDVs. In the 2021 model year, the cumulative total must be equal to or greater than 490, and 100 percent of the manufacturer's MDVs must be certified to the 8 mg/mi PM standard or to the 10 mg/mi PM standard, as applicable, to be considered equivalent. A manufacturer may add vehicles introduced before the 2017 model year (e.g., the percent of vehicles introduced in 2016 would be multiplied by 5) to the cumulative total.

(3) *NMOG+NOx Standards for Bi-Fuel, Fuel-Flexible, and Dual-Fuel Vehicles*. For fuel-flexible, bi-fuel, and dual-fuel PCs, LDTs and MDVs, compliance with the NMOG+NOx exhaust mass emission standards must be based on exhaust emission tests both when the vehicle is operated on the gaseous or alcohol fuel it is designed to use, and when the vehicle is operated on gasoline. A manufacturer must demonstrate compliance with the applicable exhaust mass emission standards for NMOG+NOx, CO, and formaldehyde set forth in the table in subsection (a)(1) when certifying the vehicle for operation on the gaseous or alcohol fuel, as applicable, and on gasoline or diesel, as applicable.

A manufacturer may measure NMHC in lieu of NMOG when fuel-flexible, bi-fuel and dual-fuel vehicles are operated on gasoline, in accordance with 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." Testing at 50°F is not required for fuel-flexible, bi-fuel, and dual-fuel vehicles when operating on gasoline.

(4) *50°F Exhaust Emission Standards.* All passenger cars, light-duty trucks, and medium-duty vehicles, other than natural gas and diesel-fueled vehicles, must demonstrate compliance with the following ~~4,000-mile~~ exhaust emission standards for NMOG+NOx and formaldehyde (HCHO) measured on the FTP (40 CFR, Part 86, Subpart B) conducted at a nominal test temperature of 50°F, as modified by Part II, Section CD~~.~~ 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." A manufacturer may demonstrate compliance with the NMOG+NOx and HCHO certification standards contained in this subparagraph by measuring NMHC exhaust emissions or issuing a statement of compliance for HCHO in accordance with Section D.1~~0~~ subparagraph (p) and Section G.3.1.2, respectively, 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." Emissions of CO measured at 50°F ~~at 4,000 miles~~ shall not exceed the standards set forth in subsection (a)(1) applicable to vehicles of the same emission category and vehicle type subject to a cold soak and emission test at 68° to 86° F.

(A) Standards for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles Certified to the LEV III Standards.

50°F Exhaust Emission Standards for LEV III Passenger Cars, Light- Duty Trucks, and Medium-Duty Passenger Vehicles			
Vehicle Emission Category	*NMOG + NOx (g/mi)*		*HCHO (g/mi)*
	Gasoline	Alcohol Fuel	Both Gasoline and Alcohol Fuel
LEV160	0.320	0.320	0.030
ULEV125	0.250	0.250	0.016
ULEV70	0.140	0.250	0.016
ULEV50	0.100	0.140	0.016
SULEV30	0.060	0.125	0.008
SULEV20	0.040	0.075	0.008

(B) Standards for Medium-Duty Vehicles (Excluding MDPVs) Certified to the LEV III Standards.

50°F Exhaust Emission Standards for LEV III Medium-Duty Vehicles (Excluding MDPVs)			
Vehicle Emission Category	*NMOG + NOx (g/mi)*		*HCHO (g/mi)*
	Gasoline	Alcohol Fuel	Both Gasoline and Alcohol Fuel
LEV395	0.790	0.790	0.064
ULEV340	0.680	0.680	0.032
ULEV250	0.500	0.500	0.032
ULEV200	0.400	0.500	0.016
SULEV170	0.340	0.425	0.016
SULEV150	0.300	0.375	0.016
LEV630	1.260	1.260	0.080
ULEV570	1.140	1.140	0.042
ULEV400	0.800	0.800	0.042
ULEV270	0.540	0.675	0.020
SULEV230	0.460	0.575	0.020
SULEV200	0.400	0.500	0.020

(5) *Cold CO Standard*. The following standards are the 50,000 mile cold temperature exhaust carbon monoxide emission levels from new 2015 and subsequent model-year passenger cars, light-duty trucks, and medium-duty passenger vehicles:

2015 AND SUBSEQUENT MODEL-YEAR COLD TEMPERATURE CARBON MONOXIDE EXHAUST EMISSIONS STANDARDS FOR PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY PASSENGER VEHICLES

(grams per mile)

Vehicle Type	*Carbon Monoxide*
All PCs, LDTs 0-3750 lbs. LVW;	10.0

LDTs, 3751 lbs. LVW - 8500 lbs. GVWR; MDPVs 10000 lbs. GVWR and less	12.5

These standards apply to vehicles tested at a nominal temperature of 20°F (-7°C) in accordance with 40 CFR Part 86 Subpart C, as amended by 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." Natural gas, diesel-fueled and zero-emission vehicles are exempt from these standards.

(6) *Highway NMOG + NOx Standard.* The maximum emissions of non-methane organic gas plus oxides of nitrogen measured on the federal Highway Fuel Economy Test (HWFET; 40 CFR ~~Part~~ 600 Subpart B ~~or 40 CFR §1066.840~~), as modified by 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," must not be greater than the applicable LEV III NMOG+NOx standard set forth in subsection (a)(1). Both the sum of the NMOG+NOx emissions and the HWFET standard must be rounded in accordance with ASTM E29-67 to the nearest 0.001 g/mi before being compared.

(7) Supplemental Federal Test Procedure (SFTP) Off-Cycle Emission Standards.

(A) *SFTP NMOG+NOx and CO Exhaust Emission Standards for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles.* Manufacturers shall certify 2015 and subsequent model year LEVs, ULEVs, and SULEVs in the PC, LDT, and MDPV classes to either the *SFTP NMOG+NOx and CO Stand-Alone Exhaust Emission Standards* set forth in subsection (a)(7)(A)1, or in accordance with the *SFTP NMOG+NOx and CO Composite Exhaust Emission Standards and Fleet-Average Requirements* set forth in subsection (a)(7)(A)2. A manufacturer may also certify 2014 model LEVs, ULEVs, or SULEVs in the PC, LDT, or MDPV classes to LEV III SFTP standards, in which case, the manufacturer shall be subject to the LEV III SFTP emission standards and requirements, including the sales-weighted fleet- average NMOG+NOx composite emission standard applicable to 2015 model vehicles if choosing to comply with the *SFTP NMOG+NOx and CO Composite Exhaust Emission Standards and Fleet-Average Requirements* set forth in subsection (a)(7)(A)2. The

manufacturer shall notify the Executive Officer of its selected emission standard type in the Application for Certification of the first test group certifying to SFTP NMOG+NOx and CO emission standards on a 150,000 mile durability basis. Once an emission standard type for NMOG+NOx and CO is selected for a fleet, and the Executive Officer is notified of such selection, the selection must be kept through the 2025 model year for the entire fleet, which includes LEV II vehicles if selecting to comply with subsection (a)(7)(A)2. The manufacturer may not change its selection until the 2026 model year. Test groups not certifying to the 150,000-mile SFTP NMOG+NOx and CO emission standards pursuant to this subsection (a)(7)(A) shall be subject to the 4,000-mile SFTP NMOG+NOx and CO emission standards set forth in subsection 1960.1(r).

1. *SFTP NMOG+NOx and CO Exhaust Stand-Alone Emission Standards*. The following standards are the maximum SFTP NMOG+NOx and CO exhaust emissions through full useful life from 2015 and subsequent model-year LEV III LEVs, ULEVs, and SULEVs when operating on the same gaseous or liquid fuel they use for FTP certification. ~~These standards only apply to 2015 through 2016 model year~~ In the case of fuel-flexible vehicles ~~≤ 6,000 lbs. GVWR and 2015 through 2017 model year fuel-flexible vehicles > 6,000 lbs. GVWR when operating on~~ SFTP compliance shall be demonstrated using the LEV III certification gasoline specified in Part II, Section A.100.3.1.2 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." ~~2017 and subsequent model year multi-fueled vehicles (including bi-fueled, dual-fueled and fuel-flexible vehicles) ≤ 6,000 lbs. GVWR as well as 2018 and subsequent model year multi-fueled vehicles > 6,000 lbs. GVWR, including vehicles certifying with carryover data, shall comply with all requirements established for each consumed fuel (or blend of fuels in the case of fuel-flexible vehicles).~~

SFTP NMOG+NOx and CO Stand-Alone Exhaust Emission Standards for 2015 and Subsequent Model LEV III Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles						
Vehicle Type	*Durability Vehicle Basis (mi)*	*Vehicle Emission Category*[1]	US06 Test *(g/mi)*		SC03 Test *(g/mi)*	
			NMOG + NOx	*CO*	*NMOG + NOx*	*CO*
All PCs; LDTs 0- 8,500 lbs. GVWR; and MDPVs Vehicles in these categories are tested at their loaded vehicle weight (curb weight plus 300 pounds).	150,000	LEV	0.140	9.6	0.100	3.2
		ULEV	0.120	9.6	0.070	3.2
		SULEV (Option A)[2]	0.060	9.6	0.020	3.2
		SULEV	0.050	9.6	0.020	3.2

[1] *Vehicle Emission Category.* Manufacturers must certify all vehicles, which are certifying to a LEV III FTP emission category on a 150,000-mile durability basis, to the emission standards of the equivalent, or a more stringent, SFTP emission category set forth on this table. That is, all LEV III LEVs certified to 150,000-mile FTP emission standards shall comply with the SFTP.

LEV emission standards in this table, all LEV III ULEVs certified to 150,000-mile FTP emission standards shall comply with the SFTP ULEV emission standards in this table, and all LEV III SULEVs certified to 150,000-mile FTP emission standards shall comply with the SFTP SULEV emission standards in this table.

[2] *Optional SFTP SULEV Standards.* A manufacturer may certify light-duty truck test groups from 6,001 to 8,500 lbs. GVWR and MDPV test groups to the SULEV, option A, emission standards set forth in this table for the 2015 through 2020 model year, only if the vehicles in the test group are equipped with a particulate filter and the manufacturer extends the particulate filter emission warranty mileage to 200,000 miles. Passenger cars and light-duty trucks 0-6,000 lbs. GVWR are not eligible for this option.

11/6/24
PER AGENCY
REQUEST
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2. *SFTP NMOG+NOx and CO Composite Exhaust Emission Standards*. For the 2015 and subsequent model years, a manufacturer selecting this option must certify LEV II and LEV III LEVs, ULEVs, and SULEVs, such that the manufacturer's sales-weighted fleet-average NMOG+NOx composite emission value does not exceed the applicable NMOG+NOx composite emission standard set forth in the following table. In addition, the CO composite emission value of any LEV III test group shall not exceed the CO composite emission standard set forth in the following table. SFTP compliance shall be demonstrated using the same gaseous or liquid fuel used for FTP certification. ~~These standards only apply to 2015 through 2016 model year~~ In the case of fuel-flexible vehicles ~~≤ 6,000 lbs. GVWR and 2015 through 2017 model year fuel-flexible vehicles > 6,000 lbs. GVWR when operating on~~ SFTP compliance shall be demonstrated using the LEV III certification gasoline specified in Part II, Section A.100.3.1.2 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." ~~2017 and subsequent model year multi-fueled vehicles (including bi-fueled, dual-fueled and fuel-flexible vehicles) ≤ 6,000 lbs. GVWR as well as 2018 and subsequent model year multi-fueled vehicles > 6,000 lbs. GVWR, including vehicles certifying with carryover data, shall comply with all requirements established for each consumed fuel (or blend of fuels in the case of fuel-flexible vehicles).~~

For each test group subject to this subsection, manufacturers shall calculate a Composite Emission Value for NMOG+NOx and, for LEV III test groups, a separate Composite Emission Value for CO, using the following equation:

Composite Emission Value = 0.28 x US06 + 0.37 x SC03 + 0.35 x FTP [Eq. 1]

where "US06" = the test group's NMOG+NOx or CO emission value, as applicable, determined through the US06 test;

"SC03" = the test group's NMOG+NOx or CO emission value, as applicable, determined through the SC03 test; and

"FTP" = the test group's NMOG+NOx or CO emission value, as applicable, determined through the FTP test.

If no vehicles in a test group have air conditioning units, the FTP cycle emission value can be used in place of the SC03 cycle emission value in Equation 1. To determine compliance with the SFTP NMOG+NOx composite emission standard applicable to the model year, manufacturers shall use a sales-weighted fleet average of the NMOG+NOx composite emission values of every applicable test group. The sales-weighted fleet average shall be calculated using a combination of carry-over and new certification SFTP composite emission values (converted to NMOG+NOx, as applicable). LEV II test groups will use their emission values in the fleet average calculation but will not be considered LEV III test groups. Compliance with the CO composite emission standard cannot be demonstrated through fleet averaging. The NMOG+NOx sales-weighted fleet-average composite emission value for the fleet and the CO composite emission value for each test group shall not exceed:

SFTP NMOG+NOx and CO Composite Emission Standards for 2015 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles (g/mi) [1]

Model Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025+
All PCs; LDTs 8,500 lbs. GVWR or less; and MDPVs[3]	***Sales-Weighted Fleet Average NMOG+NOx Composite Exhaust Emission Standards***[2,4,5,6]										
	0.140	0.110	0.103	0.097	0.090	0.083	0.077	0.070	0.063	0.057	0.050
Vehicles in this category are tested at their loaded vehicle weight (curb weight plus 300 pounds) except LEV II vehicles, which are subject to the test weights specified in §1960.1(r), title 13, CCR.	***CO Composite Exhaust Emission Standard***[7]										
	4.2										

[1] *Mileage for Compliance.* All test groups certifying to LEV III FTP emission standards on a 150,000-mile durability basis shall also certify to the SFTP on a 150,000-mile durability basis, as tested in accordance with 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."

[2] *Determining NMOG+NOx Composite Emission Values of LEV II Test Groups and Cleaner Federal Vehicles.* For test groups certified to LEV II FTP emission standards, SFTP emission values shall be converted to NMOG+NOx and projected out to ~~the same full useful life mileage as their LEV II FTP certification,~~ 120,000 miles or 150,000 miles (depending on LEV II FTP certification) using deterioration factors or aged components. In lieu of deriving a deterioration factor specific to SFTP test cycles, carry-over LEV II test groups may use the applicable deterioration factor from the FTP cycle in order to determine the carry-over composite emission values for the purpose of the NMOG+NOx sales-weighted fleet-average calculation. If an SFTP full-useful life emission value is used to comply with the LEV II SFTP 4k standards, that value may be used in the sales-weighted fleet- average without applying an additional deterioration factor. For federally-certified test groups certifying in California in accordance with Section H.1.4 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," the full-useful life emission value used to comply with federal full-useful life SFTP requirements may be used in the sales-weighted fleet-average without applying an additional deterioration factor. ~~For gasoline-fueled vehicles,~~ In all cases, NMHC emission values for the US06 and SC03 test cycles shall be converted to NMOG emission values by multiplying by a factor of 1.03. ~~LEV II test groups that contain vehicles at or below 6,000 lbs. GVWR shall certify to SFTP bins as described in footnote 4 at the same full useful life mileage as their LEV II FTP certification starting model year 2017 and in each subsequent model year, thereafter. LEV II test groups that only contain vehicles above 6,000 lbs. GVWR shall certify to SFTP bins as described in footnote 4 at the same full useful life mileage as their LEV II FTP certification starting model year 2018 and in each subsequent model year, thereafter. Test groups certifying to bins shall be subject to the in-use requirements in section (a)(8)(c).~~

[3] MDPVs are excluded from SFTP NMOG+NOx and CO emission standards and the sales-weighted fleet average until they are certified to LEV III FTP 150,000-mile NMOG+NOx and CO requirements.

[4] LEV III test groups shall certify to bins in increments of 0.010 g/mi. Beginning with the 2018 model year, vehicles may not certify to bin values above a maximum of 0.180 g/mi.

[5] *Calculating the sales-weighted average for NMOG+NOx.* For each model year, the manufacturer shall calculate and report to the Executive Officer, its sales-weighted fleet-average NMOG+NOx composite emission value as follows.

$$\frac{\left[\sum_{i=1}^{n}(\text{number of vehicles in the test group})_i \times (\text{composite value of bin})_i\right]}{\sum_{i=1}^{n}(\text{number of vehicles in the test group})_i}$$

[Eq.2]

where "n" = a manufacturer's total number of PC, LDT, and, if applicable, MDPV certification bins, in a given model year including carry-over certification bins, certifying to SFTP composite emission standards in that model year;

"number of vehicles in the test group" = the number of vehicles produced and delivered for sale in California in the certification test group; and

"Composite Value of Bin" = the numerical value selected by the manufacturer for the certification bin that serves as the emission standard for the vehicles in the test group with respect to all testing for test groups certifying to SFTP on a 150,000-mile durability basis, and the SFTP carry-over composite emission value, as described in footnote 2 of this table, for carry-over LEV II test groups. ~~For each test group, the manufacturer shall report to the Executive Officer the composite value of bin and the number of vehicles within the test group.~~

[6] *Calculation of Fleet Average Total NMOG+NOx Credits or Debits.* A manufacturer shall calculate the total NMOG+NOx credits or debits, as follows:

11/6/26
PER AGENCY
REQUEST
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[(NMOG+NOx Composite Emission Standard) – (Manufacturer's Sales-Weighted Fleet-Average Composite Emission Value)]

x (Total Number of Vehicles Produced and Delivered for Sale in California in the 0-8,500 lbs GVWR plus MDPVs classes, if applicable) [Eq. 3]

A negative number constitutes total NMOG+NOx debits, and a positive number constitutes total NMOG+NOx credits accrued by the manufacturer for the given model year. Total NMOG+NOx credits earned in a given model year retain full value through the fifth model year after they are earned. At the beginning of the sixth model year, the total NMOG+NOx credits have no value. A manufacturer may trade credits with other manufacturers.

A manufacturer shall equalize total NMOG+NOx debits within three model years after they have been incurred by earning NMOG+NOx credits in an amount equal to the total NMOG+NOx debits. If total NMOG+NOx debits are not equalized within the three model-year period, the manufacturer is subject to the Health and Safety Code section 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 total NMOG+NOx debits are not equalized by the end of the specified time period. For the purposes of Health and Safety Code section 43211, the number of vehicles not meeting the state board's emission standards is determined by dividing the NMOG+NOx debits for the model year by the NMOG+NOx composite emission standard in effect during the model year in which the debits were incurred.

[7] *Calculating the CO composite emission value.* Composite emission values for CO shall be calculated in accordance with Equation 1 above. Unlike the NMOG+NOx composite emission standards, manufacturers would ~~may~~ not be able to meet ~~comply with~~ the proposed CO composite emission standard through fleet averaging; each individual test group must comply with the standard. Test groups certified to 4,000-mile SFTP emission standards ~~and federally certified test groups certifying in California in accordance with Section H subparagraph 1.4 of "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"~~ are not subject to this CO emission standard.

11/6/26
PER AGENCY
REQUEST
LSM

(B) *SFTP PM Exhaust Emission Standards for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles.* The following standards are the maximum PM exhaust emissions through the full useful life from 2017 and subsequent model-year LEV III LEVs, ULEVs, and SULEVs in the PC, LDT, and MDPV classes when operating on the same gaseous or liquid fuel they use for FTP certification. In the case of fuel-flexible vehicles ~~≤ 6,000 lbs. GVWR certified to LEV III FTP standards prior to model year 2017 and fuel-flexible vehicles > 6,000 lbs. GVWR certified to LEV III FTP standards prior to model year 2018, these standards only apply when the vehicles is operating on~~ SFTP compliance shall be demonstrated using the LEV III certification gasoline specified in Part II, Section A.100.3.1.2 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." ~~2017 and subsequent model year multi-fueled vehicles (including bi- fueled, dual-fueled and fuel-flexible vehicles) ≤ 6,000 lbs. GVWR and 2018 and subsequent model year multi-fueled vehicles > 6,000 lbs. GVWR, including vehicles certifying with carryover data, shall comply with all requirements established for each consumed fuel (or blend of fuels in the case of fuel-flexible vehicles).~~ Manufacturers must certify LEVs, ULEVs, and SULEVs in the PC, LDT, and MDPV classes, which are certifying to LEV III FTP PM emission standards in subsection (a)(2) on a 150,000-mile durability basis, to the *SFTP PM Exhaust Emission Standards* set forth in this subsection (a)(7)(B).

SFTP PM Exhaust Emission Standards for 2017 and Subsequent Model LEV III Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles[1]

Vehicle Type	*Test Weight*	*Mileage for Compliance*	*Test Cycle*	*PM[2] (mg/mi)* ~~*2018 and Prior Model Years*~~ ~~*2019 and Subsequent Model Years*~~
All PCs ~~and LDTs through 8,500 lbs GVWR; MDPVs~~ and LDTs 0-6,000 lbs GVWR	Loaded vehicle weight	150,000	US06	10 ~~6~~
LDTs 6,001-8,500 lbs GVWR; MDPVs	Loaded vehicle weight	150,000	US06	20

11/6/20
PER AGENCY REQUEST
LSM

[1] All PCs, LDTs, and MDPVs certified to LEV III FTP PM emission standards in subsection (a)(2) on a 150,000- mile durability basis shall comply with the SFTP PM Exhaust Emission Standards in this table.

[2] ~~*Relaxed Interim Certification Standard.* Manufacturers shall certify 2018 and prior model test groups to a relaxed interim US06 PM certification standard of 10 mg/mi. However, all 2019 and subsequent model vehicles certifying to the LEV III FTP PM standard, including those from carryover test groups, shall be subject to the 6 mg/mi US06 PM standard.~~

(C) *SFTP NMOG+NOx and CO Exhaust Emission Standards for Medium-Duty Vehicles.* The following standards are the maximum NMOG+NOx and CO composite emission values for full useful life of 2016 and subsequent model-year medium-duty LEV III ULEVs and SULEVs from 8,501 through 14,000 pounds GVWR when operating on the same gaseous or liquid fuel they use for FTP certification. In the case of flex-fueled vehicles ~~certified to LEV III FTP standards prior to model year 2018~~, SFTP compliance shall be demonstrated using the LEV III certification gasoline specified in Part II, Section A.100.3.1.2 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." ~~2018 and subsequent model year multi-fueled vehicles (including bi-fueled, dual-fueled and fuel-flexible vehicles), including vehicles certifying with carryover data, shall comply with all requirements established for each consumed fuel (or blend of fuels in the case of fuel-flexible vehicles).~~ The following composite emission standards do not apply to MDPVs subject to the emission standards presented in subsections (a)(7)(A) and (a)(7)(B).

SFTP NMOG+NOx and CO Composite Exhaust Emission Standards for 2016 and Subsequent Model ULEVs and SULEVs in the Medium-Duty Vehicle Class

Vehicle Type	*Mileage for Compliance*	*HP/GVWR[2]*	*Test Cycle[3,4,5]*	*Vehicle Emission Category[6]*	*Composite Emission Standard[1] (g/mi)*	
					NMOG + NOx	*Carbon Monoxide*
MDVs 8,501 - 10,000 lbs GVWR	150,000	≤ 0.024	US06 Bag 2, SC03, FTP	ULEV	0.550	22.0
				SULEV	0.350	12.0
		> 0.024	Full US06, SC03, FTP	ULEV	0.800	22.0
				SULEV	0.450	12.0
	150,000		Hot 1435	ULEV	0.550	6.0

MDVs 10,001-14,000 lbs GVWR		n/a	UC (Hot 1435 LA92), SC03, FTP	SULEV	0.350	4.0

[1] Manufacturers shall use Equation 1 in subsection (a)(7)(A)2. to calculate SFTP Composite Emission Values for each test group subject to the emission standards in this table. For MDVs 10,001-14,000 lbs. GVWR, the emission results from the UC test shall be used in place of results from the US06 test.

[2] *Power to Weight Ratio.* If all vehicles in a test group have a power to weight ratio at or below a threshold of 0.024, they may opt to run the US06 Bag 2 in lieu of the full US06 cycle. The cutoff is determined by using a ratio of the engine's maximum rated horsepower, as established by the engine manufacturer in the vehicle's Application for Certification, to the vehicle's GVWR in pounds and does not include any horsepower contributed by electric motors in the case of hybrid electric or plug-in hybrid electric vehicles. Manufacturers may opt to test to the full cycle regardless of the calculated ratio; in such case, manufacturers shall meet the emission standards applicable to vehicles with power-to-weight ratios greater than 0.024.

[3] *Test Weight.* Medium-duty vehicles are tested at their adjusted loaded vehicle weight (average of curb weight and GVWR).

[4] *Road Speed Fan.* Manufacturers have the option to use a road speed modulated fan as specified in 40-CFR § 86.107– 96(d)(1) ~~or §1066.105, as applicable,~~ instead of a fixed speed fan for MDV SFTP testing.

[5] If a manufacturer provides an engineering evaluation for a test group showing that SC03 emissions are equivalent to or lower than FTP emissions, the FTP emission value may be used in place of the SC03 emission value when determining the composite emission value for that test group.

[6] *Vehicle Emission Categories.* For MDVs 8,501-10,000 lbs. GVWR ~~certified prior to the 2018 model year~~, for each model year, the percentage of MDVs certified to an SFTP emission category set forth in this section shall be equal to or greater than the total percentage certified to the FTP ULEV250, ULEV200, SULEV170, and SULEV150 emission categories; of these vehicles, the percentage of MDVs certified to an SFTP SULEV emission category shall be equal to or greater than the total percentage certified to both the FTP SULEV170 and SULEV150 emission categories. For MDVs 10,001-14,000 lbs. GVWR, for each model year, the percentage of MDVs certified to an SFTP emission category set forth in this section shall be equal to or greater than the total percentage certified to the FTP ULEV400, ULEV270, SULEV230, and SULEV200 emission categories; of these vehicles, the percentage of MDVs certified to an SFTP SULEV emission category shall be equal to or greater than the total percentage certified to both the FTP SULEV230 and SULEV200 emission categories. ~~2018 and subsequent model year MDVs 8,501-10,000 lbs. GVWR certifying to the FTP ULEV250 and ULEV200 emission categories, including vehicles certifying with carryover data, shall comply with the SFTP ULEV standards set forth in this subsection (a)(7)(C), and those certifying to FTP SULEV170 and SULEV150, including vehicles certifying with carryover data, shall comply with the SFTP SULEV standards set forth in this subsection (a)(7)(C). 2018 and subsequent model year MDVs 10,001-14,000 lbs. GVWR certifying to FTP ULEV400 and ULEV270 emission categories, including vehicles certifying with carryover data, shall comply with the SFTP ULEV standards set forth in this subsection (a)(7)(C), and those certifying to SULEV230 and SULEV200, including vehicles certifying with carryover data, shall comply with the SFTP SULEV standards set forth in this subsection (a)(7)(C).~~

(D) *SFTP PM Exhaust Emission Standards for Medium-Duty Vehicles.* The following standards are the maximum PM composite emission values for the full useful life of 2017 and subsequent model-year LEV III LEVs, ULEVs, and SULEVs when operating on the same gaseous or liquid fuel they use for FTP certification. In the case of fuel-flexible vehicles ~~certified to LEV III FTP standards prior to model year 2018~~, SFTP compliance shall be demonstrated using the LEV III certification gasoline specified in Part II, Section A.100.3.1.2 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." ~~2018 and subsequent model year multi-fueled vehicles (including bi-fueled, dual-fueled and fuel-flexible vehicles), including vehicles certifying with carryover data, shall comply with all requirements established for each consumed fuel (or blend of fuels in the case of fuel-flexible vehicles).~~ The following composite emission standards do not apply to MDPVs subject to the emission standards set forth in subsections (a)(7)(A) and (a)(7)(B).

SFTP PM Exhaust Emission Standards for 2017 and Subsequent Model Medium-Duty Vehicles[1]

Vehicle Type	*Test Weight*	*Mileage for Compliance*	*Hp/GVWR[2]*	*Test Cycle[3,4,5]*	*PM (mg/mi)*
MDVs 8,501-10,000 lbs GVWR	Adjusted loaded vehicle weight	150,000	≤ 0.024	US06 Bag 2	7
			>0.024	US06	10
MDVs 10,001-14,000 lbs GVWR	Adjusted loaded vehicle weight	150,000	n/a	Hot 1435 UC (Hot 1435 LA92)	7

[1] Except for MDPVs subject to the emission standards set forth in subsection (a)(7)(B), MDVs certified to 150,000-mile FTP PM emission standards in subsection (a)(2) shall comply with the SFTP PM Exhaust Emission Standards in this table.

[2] *Power to Weight Ratio.* If all vehicles in a test group have a power to weight ratio at or below a threshold of 0.024, they may opt to run the US06 Bag 2 in lieu of the full US06 cycle. The cutoff is determined by using a ratio of the engine's horsepower to the vehicle's GVWR in pounds and does not include any horsepower contributed by electric motors in the case of hybrid electric or plug-in hybrid electric vehicles. Manufacturers may opt to test to the full cycle regardless of the calculated ratio; in such case, manufacturers shall meet the emission standards applicable to vehicles with power-to-weight ratios greater than 0.024.

[3] *Road Speed Fan.* Manufacturers have the option to use a road speed modulated fan as specified in 40-CFR § 86.107– 96(d)(1) ~~or § 1066.105, as applicable~~, instead of a fixed speed fan for MDV SFTP testing.

11/6/20
PER AGENCY REQUEST
LSM

[4] Manufacturers shall use Equation 1 above to calculate SFTP Composite PM Emission Values for each test group subject to the emission standards in this table. For MDVs 8,501-10,000 lbs. GVWR certifying to the US06 Bag 2 PM emission standard, the emission results from the US06 Bag 2 test shall be used in place of results from the full US06 test. For MDVs 10,001-14,000 lbs. GVWR, the emission results from the UC test shall be used in place of results from the US06 test.

~~[5] If a manufacturer provides an engineering evaluation for a test group demonstrating that SC03 PM emissions are equivalent to or lower than FTP PM emissions, the FTP PM emission value may be used in lieu of the SC03 PM emission value when determining the composite emission value for that test group.~~

(8) Interim In-Use Compliance Standards.

(A) *LEV III NMOG+NOx Interim In-Use Compliance Standards.* The following interim in-use compliance standards shall apply for the first two model years that a test group is certified to LEV III standards ~~that are more stringent than the standards to which the test group was certified in a prior model year~~.

1. *NMOG+NOx Interim In-Use Compliance Standards for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles.* For the 2015 through 2019 model years, these standards shall apply.

Emission Category	*Durability Vehicle Basis (miles)*	*LEV III PCs, LDTs, and MDPVs*
		NMOG + NOx (g/mi)
LEV160	150,000	n/a
ULEV125	150,000	n/a
ULEV70	150,000	0.098
ULEV50	150,000	0.070
SULEV30	150,000	0.042[1]
SULEV20	150,000	0.028[1]

[1]not applicable to test groups that receive PZEV credits

2. *NMOG+NOx Interim In-Use Compliance Standards for Medium-Duty Vehicles, Excluding Medium-Duty Passenger Vehicles.* For the 2015 through 2020 model years, these standards shall apply.

		LEV III MDVs (excluding MDPVs) 8,501 - 10,000 lbs. GVW	*LEV III MDVs 10,001 - 14,000 lbs. GVW*

Emission Category	*Durability Vehicle Basis (miles)*	*NMOG + NOx (g/mi)*	*NMOG + NOx (g/mi)*
LEV395	150,000	n/a	n/a
ULEV340	150,000	n/a	n/a
ULEV250	150,000	0.370	n/a
ULEV200	150,000	0.300	n/a
SULEV170	150,000	0.250	n/a
SULEV150	150,000	0.220	n/a
LEV630	150,000	n/a	n/a
ULEV570	150,000	n/a	n/a
ULEV400	150,000	n/a	0.600
ULEV270	150,000	n/a	0.400
SULEV230	150,000	n/a	0.340
SULEV200	150,000	n/a	0.300

(B) *LEV III Particulate Interim In-Use Compliance Standards.* The following interim in-use compliance standards shall apply for the first two model years that a test group is certified to the LEV III standards.

1. *LEV III Particulate Interim In-Use Compliance Standards for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles.* For the 2017 through 2020 model years, the interim in-use compliance standard for vehicles certifying to the 3 mg/mi particulate standard is 6 mg/mi. For the 2025 through 2028 model years, the interim in-use compliance standard for vehicles certifying to the 1 mg/mi particulate standard is 2 mg/mi.

2. *LEV III Particulate Interim In-Use Compliance Standards for Medium- Duty Vehicles, excluding Medium-Duty Passenger Vehicles.* For the 2017 through 2020 model years, the interim in-use compliance standard for vehicles certifying to the 8 mg/mi particulate standard shall be 16 mg/mi and the interim in-use compliance standard for vehicles certifying to the 10 mg/mi particulate standard shall be 20 mg/mi.

(C) SFTP Interim In-Use Compliance Standards.

1. Test groups certified prior to the 2020 model year may use an in-use compliance standard for NMOG+NOx for the first two model years that they are certified to new standards. ~~2016 and prior model year light-duty and medium-duty passenger vehicle test groups that contain vehicles at or below 6,000 lbs. GVWR, 2017 and prior model year light-duty and medium-duty passenger vehicle test groups with only vehicles above 6,000 lbs. GVWR, and 2019 and prior model year medium-duty vehicle test groups may use an in-use compliance standard for NMOG+NOx for the first two model years that they are certified to LEV III NMOG+NOx standards or a LEV III SFTP NMOG+NOx bin.~~

   a. For light-duty vehicle test groups and medium-duty passenger vehicle test groups certifying to the standards in subsection (a)(7)(A)1, in-use compliance emission standards for NMOG+NOx shall be 1.4 times the applicable certification standard.

   b. For light-duty vehicle test groups and medium-duty passenger vehicle test groups certifying to the standards in subsection (a)(7)(A)2, in-use compliance emission standards for NMOG+NOx shall be 1.4 times the Composite Value of the bin to which a test group is certified.

   c. For medium-duty vehicle tests groups certifying to the standards in subsection (a)(7)(C), in-use compliance emission standards for NMOG+NOx shall be 1.4 times the applicable certification standard.

2. Test groups certified prior to the 2021 model year will be allowed an in-use compliance standard for PM for the first five model years that they are certified to the SFTP PM standard. ~~2023 and prior model year light-duty and medium-duty passenger vehicle test groups that certify to a LEV III SFTP PM exhaust emission standard in subsection (a)(7)(B) may use an in-use compliance standard for SFTP PM regardless of the model year that the test groups first certified to the LEV III SFTP PM standard. 2022 and prior model year medium-duty vehicle test groups may use an in-use compliance standard for PM for the first two model years that they are certified to a LEV III SFTP PM exhaust emission standard in subsection (a)(7)(D).~~

a. For light-duty vehicle test groups and medium-duty passenger vehicle test groups certifying to SFTP PM exhaust emission standards in subsection (a)(7)(B), in-use compliance emission standards for PM shall be 5.0~~10~~ mg/mi higher than the applicable certification standard.

b. For medium-duty vehicle test groups certifying to SFTP PM Exhaust Emission Standards in subsection (a)(7)(D), in-use compliance emission standards for PM shall be 5.0 mg/mi higher than the applicable certification standard.

(9) *Requirement to Generate Additional NMOG+NOx Fleet Average Credit.* For a vehicle that is certified to the LEV III standards in subsection (a)(1), which does not 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 2009 through 2017 Model Zero-Emission Vehicles and 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 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes," a manufacturer may subtract 5 mg/mi from the NMOG+NOx emission standards value set forth in subsection (b)(1)(B)1.c when calculating the manufacturer's fleet average, provided that the manufacturer extends the performance and defects warranty period to 15 years or 150,000 miles, whichever occurs first, except that the time period is to be 10 years for a zero emission energy storage device (such as battery, ultracapacitor, or other electric storage device).

(10) *Requirement to Generate a Partial ZEV Allowance*. For the 2015 through 2017 model years, a manufacturer that certifies to the LEV III SULEV30 or the LEV III SULEV20 standards may 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 2009 through 2017 Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes."

(11) *NMOG Credit for Direct Ozone Reduction Technology.* A manufacturer that certifies vehicles equipped with direct ozone reduction technologies shall be eligible to receive NMOG credits that can be applied to the NMOG exhaust emissions of the vehicle when determining compliance with the standard. In order to receive credit, the manufacturer must submit the following information for each vehicle model for which it gets credit, including, but not limited to:

(A) a demonstration of the airflow rate through the direct ozone reduction device and the ozone-reducing efficiency of the device over the range of speeds encountered in the Unified Cycle Driving Schedule contained in Part II G. of the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures ~~for~~ and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty trucks and Medium-duty Vehicles" as adopted March 22, 2012;

(B) an evaluation of the durability of the device for the full useful life of the vehicle; and

(C) a description of the on-board diagnostic strategy for monitoring the performance of the device in-use. Using the above information, the Executive Officer shall determine the value of the NMOG credit based on the calculated change in the one-hour peak ozone level using an approved airshed model. ~~This credit can only be used for determining compliance with the exhaust standards in subsection (a)(1) or subsection 1961(a)(1), as applicable.~~

(12) When a Federally-Certified Vehicle Model is Required in California.

(A) *General Requirement.* Whenever a manufacturer federally-certifies a 2015 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 emission 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 in Tables S04-1 and S04-2 of 40 CFR §86.1811-04(c), as adopted February 10, 2000~~, and in Table 2 of 40 CFR §86.1811.17(b), as adopted April 28, 2014~~. The criteria for applying this requirement are set forth in Part I. Section H.1 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."

(B) *Exception for clean fuel fleet vehicles.* Subsection (a)(12)(A) does 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 requirement 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.

(13) *Emission Standard for a Fuel-Fired Heater.* Whenever a manufacturer elects to utilize an on-board fuel-fired heater on any passenger car, light-duty truck or medium-duty vehicle, the fuel-fired heater must meet ULEV125 standards for passenger cars and light-duty trucks less than 8,500 pounds GVWR as set forth in subsection 1961 (a)(1). The exhaust emissions from the fuel-fired heater shall be determined in accordance with the "California Exhaust Emission Standards and Test Procedures for 2009 through 2017 Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes" or the "California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes," as applicable. If the on-board fuel-fired heater is capable of operating at ambient temperatures above 40°F, the measured emission levels of the on-board fuel-fired heater shall be added to the emissions measured on the FTP (40 CFR, Part 86, Subpart B), as amended by 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" to determine compliance with the exhaust emission standards in subsection (a)(1).

(b) Emission Standards Phase-In Requirements for Manufacturers.

(1) Fleet Average NMOG + NOx Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles.

(A) The fleet average non-methane organic gas plus oxides of nitrogen exhaust mass emission values from the passenger cars, light-duty trucks, and medium-duty passenger vehicles that are produced and delivered for sale in California each model year by a manufacturer other than a small volume manufacturer shall not exceed:

FLEET AVERAGE NON-METHANE ORGANIC GAS PLUS OXIDES OF NITROGEN EXHAUST MASS EMISSION REQUIREMENTS FOR PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY PASSENGER VEHICLES (150,000 mile Durability Vehicle Basis)		
Model Year	*Fleet Average NMOG + NOx (grams per mile)*	
	All PCs; LDTs 0-3750 lbs. LVW	*LDTs 3751 lbs. LVW - 8500 lbs. GVWR; All MDPVs*
2014[1]	0.107	0.128
2015	0.100	0.119
2016	0.093	0.110
2017	0.086	0.101
2018	0.079	0.092
2019	0.072	0.083
2020	0.065	0.074
2021	0.058	0.065
2022	0.051	0.056
2023	0.044	0.047
2024	0.037	0.038
2025+	0.030	0.030

[1] For the 2014 model year, a manufacturer may comply with the fleet average NMOG+NOx values in this table in lieu of complying with the NMOG fleet average values in subsection 1961(a)(b)(1)(A). A manufacturer must either comply with the NMOG+NOx fleet average requirements for both its PC/LDT1 fleet and its LDT2/MDPV fleet or comply with the NMOG fleet average requirements for both its PC/LDT1 fleet and its LDT2 fleet. A manufacturer must calculate its fleet average NMOG+NOx values using the applicable full useful life standards.

1. A manufacturer that selects compliance Option 2 must provide to the Executive Officer separate values for the number of vehicles in each test group produced and delivered for sale in the District of Columbia and for each individual state within the average.

2. *PZEV Anti-Backsliding Requirement.* In the 2018 and subsequent model years, a manufacturer must produce and deliver for sale in California a minimum percentage of its passenger car and light-duty truck fleet that certifies to SULEV30 and SULEV20 standards. This minimum percentage must be equal to the average percentage of PZEVs produced and deliver for sale in California for that manufacturer for the 2015 through 2017 model year. A manufacturer may calculate this average percentage using the projected sales for these model years in lieu of actual sales. The percentage of a manufacturer's passenger car and light-duty truck fleet that certifies to SULEV30 and SULEV20 standards averaged across the applicable model year and the two previous model years shall be used to determine compliance with this requirement, beginning with the 2020 model year.

(B) Calculation of Fleet Average NMOG + NOx Value.

1. Basic Calculation.

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

(Σ [Number of vehicles in a test group excluding off-vehicle charge capable hybrid electric vehicles x applicable emission standard] +
Σ [Number of off-vehicle charge capable hybrid electric vehicles in a test group x HEV NMOG+NOx contribution factor]) ÷
Total Number of PCs plus LDT1s Produced and Delivered for sale in California, Including ZEVs and HEVs

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

(Σ [Number of vehicles in a test group excluding off-vehicle charge capable hybrid electric vehicles x applicable emission standard] +
Σ [Number of off-vehicle charge capable hybrid electric vehicles in a test group x HEV NMOG factor]) ÷
Total Number of LDT2s plus MDPVs Produced and Delivered for sale in California, Including ZEVs and HEVs

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

Model Year	Emission Category	Emission Standard Value[1] (g/mi)	
		All PCs; LDTs 0-3750 lbs. LVW	**LDTs 3751-5750 lbs. LVW; All MDPVs**
2015 and subsequent model year federally-certified vehicles	All	Sum of the full useful life NMOG and NOx Federal Emission Standards to which Vehicle is Certified	Sum of the full useful life NMOG and NOx Federal Emission Standards to which Vehicle is Certified
Model Year	**Emission Category**	**All PCs; LDTs 0-3750 lbs. LVW**	**LDTs 3751 lbs. LVW - 8500 lbs. GVWR;**
2015 through 2019 model year vehicles certified to the "LEV II" standards in subsection 1961(a)(1); 2015 and subsequent model year vehicles certified to the "LEV III" standards in subsection 1961.2(a)(1)	LEV II LEVs; LEV160s	0.160	0.160
	LEV II ULEVs; LEV125s	0.125	0.125
	ULEV70s	0.070	0.070
	ULEV50s	0.050	0.050
	LEV II SULEVs; SULEV30s	0.030	0.030
	SULEV20s	0.020	0.020
	LEV II LEVs; LEV395s	n/a	0.395
	LEV II ULEVs	n/a	0.343
	ULEV340s	n/a	0.340
	ULEV250s	n/a	0.250
	ULEV200s	n/a	0.200
	SULEV170s	n/a	0.170
	SULEV150s	n/a	0.150

[1] For LEV III vehicle test groups that meet the extended emission warranty requirements in subsection (a)(9), the applicable emission standard value shall be the emission standard value set forth in this table minus 5 mg/mi.

2. *NMOG+NOx Contribution Factor for Off-vehicle Charge Capable HEVs.* The HEV NMOG+NOx contribution factor for light-duty off-vehicle charge capable hybrid electric vehicles is calculated as follows;~~ For the purpose of applying this formula to light- duty off-vehicle charge capable hybrid electric vehicles that are certified to the LEV II standards set forth in subsection 1961(a)(1), a LEV II LEV shall use the formula for LEV160, a LEV II ULEV shall use the formula for ULEV125, and a LEV II SULEV shall use the formula for SULEV30.~~

11/6/26 PER AGENCY REQUEST LSM

LEV160 HEV Contribution Factor = 0.160 - [(Zero-emission VMT Allowance) x 0.035]

ULEV125 HEV Contribution Factor = 0.125 - [(Zero-emission VMT Allowance) x 0.055]

ULEV70 HEV Contribution Factor = 0.070 - [(Zero-emission VMT Allowance) x 0.020]

ULEV50 HEV Contribution Factor = 0.050 - [(Zero-emission VMT Allowance) x 0.020]

SULEV30 HEV Contribution Factor = 0.030 - [(Zero-emission VMT Allowance) x 0.010]

SULEV20 HEV Contribution Factor = 0.020 - [(Zero-emission VMT Allowance) x 0.020]

Where the Zero-emission VMT Allowance for ~~2015 through 2017 model year~~ off-vehicle charge capable HEVs is determined in accordance with section C.3 of the "California Exhaust Emission Standards and Test Procedures for 2009 through 2017 Model Zero- Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes~~.~~" and ~~For the 2018 and subsequent model years, the Zero- emission VMT Allowance is equal to the sum of the Zero-Emission Vehicles Miles Traveled TZEV Allowance and the Allowance for US06 Capability in section C.3.3 of~~ the "California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero- Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes," as applicable, except that~~.~~ ~~f~~For the purposes of this subsection (b)(1)(B)2., the maximum allowable Zero-emission VMT Allowance that may be used in these equations is 1.0. This subsection (b)(1)(B)2. shall only apply to off-vehicle charge capable HEVs certified to the LEV III standards set forth in subsection (a)(1).

(C) Phase-In Requirements for Small Volume Manufacturers.

11/6/26
PER AGENCY
REQUEST
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1. In the 2015 through 20212016 model years, a small volume manufacturer shall not exceed a fleet average NMOG+NOx value of 0.160 g/mi for PCs and LDTs from 0-3750 lbs. LVW or 0.160 g/mi for LDTs from 3751-5750 lbs. LVW calculated in accordance with subsection (b)(1)(B). In 2022 through 2024the 2017 through 2021 model years, a small volume manufacturer shall not exceed a fleet average NMOG+NOx value of 0.125 g/mi for PCs and LDTs from 0-3750 lbs. LVW or 0.125 g/mi for LDTs from 3751 lbs. LVW - 8,500 lbs. GVW and MDPVs calculated in accordance with subsection (b)(1)(B). In 20252022 and subsequent model years, a small volume manufacturer shall not exceed a fleet average NMOG+NOx value of 0.0700.051 g/mi for PCs and LDTs from 0-3750 lbs. LVW or 0.0700.051 g/mi for LDTs from 3751 lbs. LVW - 8,500 lbs. GVW and MDPVs calculated in accordance with subsection (b)(1)(B). For the 2015 through 2021 model years, a small volume manufacturer may certify its vehicles to the LEV II exhaust standards in section 1961. All vehicles certified by a small volume manufacturer for the 2022 and subsequent model years must meet the LEV III exhaust standards in this section.

2. If a manufacturer's average California sales exceeds 4500 units of new PCs, LDTs, MDVs, heavy-duty vehicles, and heavy-duty engines based on the average number of vehicles sold for the three previous consecutive model years, the manufacturer shall no longer be treated as a small volume manufacturer. If this is the first time the manufacturer exceeds the 4500 unit sales limit, the manufacturer must comply with the fleet average requirements applicable to a large volume manufacturer, as specified in subsection (b)(1)(A) beginning with the fourth model year after the last of the three consecutive model years. If during this four year lead time period the manufacturer's sales drop below the 4500 unit sales limit and then increase again above the 4500 unit sales limit, the four year lead time period shall be calculated based on the first model year in which the manufacturer again exceeds the 4500 unit sales limit. Except as noted above – i.e., if this is not the first time the manufacturer has exceeded the 4500 unit sales limit – the manufacturer shall comply with the fleet average requirements applicable to larger manufacturers as specified in subsection (b)(1)(A) beginning with the following model year after the last of the three consecutive model years.

3. If a manufacturer's average California sales fall below 4500 units of new PCs, LDTs, MDVs and heavy duty engines based on the average number of vehicles sold for the three previous consecutive model years, the manufacturer shall be treated as a small volume manufacturer and shall be subject to the requirements for small volume manufacturers beginning with the next model year.

(D) *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 sections 1962.1 and 1962.2 shall be included as LDT1s in the calculation of a fleet average NMOG+NOx value.

(2) *LEV III Phase-In Requirement for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles*

For the 2015 and 2016 model years, the LEV II SULEV emission standards set forth in section 1961(a)(1) that are applicable to PCs, LDTs, and MDPVs shall only apply to those PCs, LDT1s, LDT2s, and MDPVs that certify to SULEV emission standards using "carryover" of emission test data from a previous model year in accordance with U.S. EPA OMS Advisory Circular A/C No. 17F, issued November 16, 1982, and last amended January 21, 1988, incorporated herein by reference. Beginning in the 2017 model year, the LEV II SULEV emission standards set forth in section 1961(a)(1) that are applicable to PCs, LDTs, and MDPVs shall only apply to those PCs, LDT1s, LDT2s, and MDPVs that receive partial ZEV allowances in accordance with the "California Exhaust Emission Standards and Test Procedures for 2009 through 2017 Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes." A manufacturer, other than a small volume manufacturer, must certify 100 percent of its PC, LDT, and MDPV fleet to the LEV III standards in subsection (a)(1) in 2020 and subsequent model years. A small volume manufacturer must certify 100 percent of its PC, LDT, and MDPV fleet to the LEV III standards in subsection (a)(1) in 2022 and subsequent model years.

(3) *LEV III Phase-In Requirements for Medium-Duty Vehicles, Other than Medium- Duty Passenger Vehicles.*

(A) ~~*Requirement for Manufacturers Other than Small Volume Manufacturers.*~~ A manufacturer of MDVs, other than a small volume manufacturer, shall certify its MDV fleet according to the following phase-in schedule:

Model Year	*Vehicles Certified to §1961.2.1(a)(1)[4] (%)*				*Vehicles Certified to §1956.8(c) or (h) (%)*
	LEV II LEV; LEV III LEV395 or LEV630	LEV II ULEV; LEV III ULEV340 or ULEV570	LEV III ULEV250 or ULEV400	LEV III SULEV170 or SULEV230	ULEV
2015	40	60	0	0	100
2016	20	60	20	0	100
2017	10	50	40	0	100
2018	0	40	50	10	100
2019	0	30	40	30	100
2020	0	20	30	50	100
2021	0	10	20	70	100

2022 +	0	0	10	90	100

~~[1] The LEV II LEV and LEV II ULEV emission categories are only applicable for the 2015 through 2019 model years. The LEV III LEV395, LEV630, ULEV340, and ULEV570 emission categories are only applicable for the 2015 through 2021 model years.~~

(B) *Requirements for Small Volume Manufacturers.* In the 2015 through 2017 model years, a small volume manufacturer shall certify, produce, and deliver for sale in California vehicles or engines certified to the MDV LEV II LEV standards or to the LEV III LEV395 or LEV III LEV630 standards, as applicable, in a quantity equivalent to 100% of its MDV fleet. In the 2018 through 2021 model years, a small volume manufacturer shall certify, produce, and deliver for sale in California vehicles or engines certified to the MDV LEV II ULEV standards or to the LEV III ULEV340 or LEV III ULEV570 standards, as applicable, in a quantity equivalent to 100% of its MDV fleet. In the 2022 and subsequent model years, a small volume manufacturer shall certify, produce, and deliver for sale in California vehicles or engines certified to the MDV LEV III ULEV250 or LEV III ULEV400 standards, as applicable, in a quantity equivalent to 100% of its MDV fleet. Engines certified to these MDV standards are not eligible for emissions averaging.

~~(C) Alternate Phase-In Schedules for LEV III MDVs.~~

~~1. Alternate Phase-In Schedules for LEV III MDVs for All Manufacturers.~~

~~a. For the 2016 and subsequent model years, the fleet average non methane organic gas plus oxides of nitrogen exhaust mass emission values from the medium-duty vehicles produced and delivered for sale in California each model year shall not exceed:~~

~~*FLEET AVERAGE NON-METHANE ORGANIC GAS PLUS OXIDES OF NITROGEN EXHAUST MASS EMISSION REQUIREMENTS FOR MEDIUM-DUTY VEHICLES (150,000 mile Durability Vehicle Basis)*~~		
~~Model Year~~	~~Fleet Average NMOG + NOx (g/mi)~~	
	~~MDVs 8,501 - 10,000 lbs. GVWR~~	~~MDVs 10,001-14,000 lbs. GVWR~~
~~2016~~	~~0.333~~	~~0.548~~
~~2017~~	~~0.310~~	~~0.508~~
~~2018~~	~~0.278~~	~~0.451~~
~~2019~~	~~0.253~~	~~0.400~~
~~2020~~	~~0.228~~	~~0.349~~
~~2021~~	~~0.203~~	~~0.298~~
~~2022+~~	~~0.178~~	~~0.247~~

b. Each manufacturer's fleet average NMOG+NOx value for the total number of MDVs 8,501 - 10,000 lbs. GVWR produced and delivered for sale in California shall be calculated as follows:

(Σ [Number of MDVs 8,501 - 10,000 lbs. GVWR in a test group excluding off-vehicle charge capable hybrid electric vehicles x applicable emission standard] +
Σ [Number of off-vehicle charge capable hybrid electric vehicles in a test group x HEV NMOG+NOx contribution factor]) ÷
Total Number of MDVs 8,501 - 10,000 lbs. GVWR Produced and Delivered for sale in California, Including ZEVs and HEVs

c. Each manufacturer's fleet average NMOG+NOx value for the total number of MDVs 10,001-14,000 lbs. GVWR produced and delivered for sale in California shall be calculated as follows:

(Σ [Number of MDVs 10,001 - 14,000 lbs. GVWR in a test group excluding off-vehicle charge capable hybrid electric vehicles x applicable emission standard] +
Σ [Number of off-vehicle charge capable hybrid electric vehicles in a test group x HEV NMOG+NOx contribution factor]) ÷
Total Number of MDVs 10,001 - 14,000 lbs. GVWR Produced and Delivered for sale in California, Including ZEVs and HEVs

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

Model Year	Emission Category	Emission Standard Value (g/mi)
2016 and subsequent model year federally-certified vehicles	All	Sum of the full useful life NMOG and NOx Federal Emission Standards or full useful life NMOG+NOx Federal Emission Standard to which Vehicle is Certified
2016 through 2019 model year vehicles certified to the "LEV II" standards in subsection 1961(a)(1)	All	Sum of the full useful life NMOG and NOx LEV II Emission Standards to which Vehicle is Certified
2016 and subsequent model year vehicles certified to the "LEV III" standards in subsection (a)(1)	All	Full useful life NMOG+NOx LEV III Emission Standards to which Vehicle is Certified

e. *NMOG+NOx Contribution Factor for Off-vehicle Charge Capable HEVs.* The HEV NMOG+NOx contribution factors for medium-duty off-vehicle charge capable hybrid electric vehicles are calculated as follows.

The Zero-emission VMT Allowance for 2016 and 2017 model year off-vehicle charge capable HEVs is determined in accordance with section C.3 of the "California Exhaust Emission Standards and Test Procedures for 2009 through 2017 Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes." For the 2018 and subsequent model years, the Zero-emission VMT Allowance is equal to the sum of the Zero-Emission Vehicles Miles Traveled TZEV Allowance and the Allowance for US06 Capability in section C.3.3 of the "California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes," as applicable. For the purposes of this subsection (b)(3)(C)1.e., the maximum allowable Zero-emission VMT Allowance that may be used in these equations is 1.0.

i. *NMOG+NOx Contribution Factor for Off-vehicle Charge Capable HEVs 8,501 - 10,000 lbs. GVWR.* The HEV NMOG+NOx contribution factors for medium-duty off-vehicle charge capable hybrid electric vehicles 8,501 - 10,000 lbs. GVWR are calculated as follows.

For the purpose of applying this formula to medium-duty off-vehicle charge capable hybrid electric vehicles 8,501 - 10,000 lbs. GVWR that are certified to the LEV II standards set forth in subsection 1961(a)(1), a LEV II LEV shall use the formula for LEV395, a LEV II ULEV shall use the formula for ULEV340, and a LEV II SULEV shall use the formula for ULEV200.

LEV395 HEV Contribution Factor = 0.395 - [(Zero-emission VMT Allowance) x 0.055]

ULEV340 HEV Contribution Factor = 0.340 - [(Zero-emission VMT Allowance) x 0.090]

ULEV250 HEV Contribution Factor = 0.250 - [(Zero-emission VMT Allowance) x 0.050]

ULEV200 HEV Contribution Factor = 0.200 - [(Zero-emission VMT Allowance) x 0.030]

SULEV170 HEV Contribution Factor = 0.170 - [(Zero-emission VMT Allowance) x 0.020]

SULEV150 HEV Contribution Factor = 0.150 - [(Zero-emission VMT Allowance) x 0.020]

~~ii. *NMOG+NOx Contribution Factor for Off-vehicle Charge Capable HEVs 10,001 - 14,000 lbs. GVWR.* The HEV NMOG+NOx contribution factors for medium-duty off-vehicle charge capable hybrid electric vehicles 10,001 - 14,000 lbs. GVWR are calculated as follows.~~

~~For the purpose of applying this formula to medium-duty off-vehicle charge capable hybrid electric vehicles 10,001 - 14,000 lbs. GVWR that are certified to the LEV II standards set forth in subsection 1961(a)(1), a LEV II LEV shall use the formula for LEV630, a LEV II ULEV shall use the formula for ULEV570, and a LEV II SULEV shall use the formula as follows.~~

~~LEV II SULEV HEV Contribution Factor = 0.327 - [(Zero-emission VMT Allowance) x 0.057]~~

~~LEV630 HEV Contribution Factor = 0.630 - [(Zero-emission VMT Allowance) x 0.060]~~

~~ULEV570 HEV Contribution Factor = 0.570 - [(Zero-emission VMT Allowance) x 0.170]~~

~~ULEV400 HEV Contribution Factor = 0.400 - [(Zero-emission VMT Allowance) x 0.130]~~

~~ULEV270 HEV Contribution Factor = 0.270 - [(Zero-emission VMT Allowance) x 0.040]~~

~~SULEV230 HEV Contribution Factor = 0.230 - [(Zero-emission VMT Allowance) x 0.030]~~

~~SULEV200 HEV Contribution Factor = 0.200 - [(Zero-emission VMT Allowance) x 0.030]~~

(C) ~~2.~~ Alternate Phase-In Schedules for LEV III MDVs ~~for Manufacturers with a Limited Number of Test Groups~~. For the 2016 and subsequent model years, a manufacturer that produces and delivers for sale in California four or fewer medium-duty test groups may comply with the following alternate phase-in schedule for LEV III medium-duty vehicles.

1. ~~a.~~ A manufacturer that produces and delivers for sale in California four medium-duty test groups may comply with the following alternate phase-in schedule for LEV III medium-duty vehicles.

Model Year	*Number of Test Groups Certified to §1961.2.1(a)(1)*				*Vehicles Certified to §1956.8(c) or (h) (%)*
	LEV II LEV; LEV III LEV395 or LEV630	LEV II ULEV; LEV III ULEV340 or ULEV570	LEV III ULEV250 or ULEV400	LEV III SULEV170 or SULEV230	ULEV
2016-2017	1	2	1	0	100
2018	0	2	2	0	100
2019	0	1	2	1	100
2020	0	1	1	2	100
2021	0	0	1	3	100
2022 +	0	0	0	4	100

2. ~~b.~~ A manufacturer that produces and delivers for sale in California three medium-duty test groups certified to subsection (a)(1) may comply with the following alternate phase-in schedule for LEV III medium-duty vehicles.

Model Year	*Number of Test Groups Certified to §1961.2.1(a)(1)*				*Vehicles Certified to §1956.8(c) or (h) (%)*
	LEV II LEV; LEV III LEV395 or LEV630	LEV II ULEV; LEV III ULEV340 or ULEV570	LEV III ULEV250 or ULEV400	LEV III SULEV170 or SULEV230	ULEV
2016	1	2	0	0	100
2017	0	2	1	0	100
2018	0	1	2	0	100
2019-2020	0	1	1	1	100
2021	0	0	1	2	100
2022 +	0	0	0	3	100

3. ~~c.~~ A manufacturer that produces and delivers for sale in California two medium-duty test groups certified to subsection (a)(1) may comply with the following alternate phase-in schedule for LEV III medium-duty vehicles.

Model Year	*Number of Test Groups Certified to §1961.2(a)(1)*				*Vehicles Certified to §1956.8(c) or (h) (%)*
	LEV II LEV; LEV III LEV395 or LEV630	LEV II ULEV; LEV III ULEV340 or ULEV570	LEV III ULEV250 or ULEV400	LEV III SULEV170 or SULEV230	ULEV
2016	1	1	0	0	100
2017-2019	0	1	1	0	100
2020-2021	0	0	1	1	100
2022 +	0	0	0	2	100

4. ~~d.~~ A manufacturer that produces and delivers for sale in California one medium-duty test groups certified to subsection (a)(1) may comply with the following alternate phase-in schedule for LEV III medium-duty vehicles.

Model Year	*Number of Test Groups Certified to §1961.2.1(a)(1)*				*Vehicles Certified to §1956.8(c) or (h) (%)*
	LEV II LEV; LEV III LEV395 or LEV630	LEV II ULEV; LEV III ULEV340 or ULEV570	LEV III ULEV250 or ULEV400	LEV III SULEV170 or SULEV230	ULEV
2016-2018	0	1	0	0	100
2019-2021	0	0	1	0	100
2022 +	0	0	0	1	100

(D) *Identifying a Manufacturer's MDV Fleet.* 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 engine-certified medium-duty vehicles delivered for sale in California. A manufacturer that elects to certify to the optional medium-duty engine standards in subsection 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 subsection.

(E) For a manufacturer that elects to certify to the optional medium-duty engine standards in title 13, CCR subsections 1956.8(c) or (h), all such 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 subsections 1956.8(b) or (d), as applicable.

(4) SFTP Phase-In Requirements.

(A) *Phase-In Requirement for Passenger Cars, Light-Duty Trucks, and Medium- Duty Passenger Vehicles.* A test group certifying to LEV III FTP emission categories on a 150,000-mile durability basis shall also certify to SFTP requirements on a 150,000-mile durability basis.

Manufacturers shall have two options for phase in to the SFTP NMOG+NOx and CO emission standards.

1. Under Option 1, beginning with the 2015 model year, a manufacturer shall certify its PCs, LDTs, and MDPVs to the SFTP NMOG+NOx and CO emission standards in subsection (a)(7)(A)1. when the vehicles are also certifying to a LEV III FTP emission category at 150,000-mile durability.

2. Under Option 2, for 2015 and subsequent model years, a manufacturer shall certify its fleet of PCs, LDTs, and MDPVs such that the manufacturer's sales-weighted fleet- average NMOG+NOx composite emission value and each test group's CO composite emission value does not exceed the applicable composite emission standards in effect for that model year in accordance with subsection (a)(7)(A)2.

   Beginning with the 2017 model year, a manufacturer shall certify its PCs, LDTs, and MDPVs certifying to LEV III FTP PM emission standards on a 150,000-mile durability basis to the SFTP PM emission standards in subsection (a)(7)(B).

(B) *Phase-In Requirements for Medium-Duty Vehicle Manufacturers.* Phase-in for NMOG+NOx and CO emission standards begins with the 2016 model year. For MDVs 8,501-10,000 lbs. GVWR ~~certified prior to the 2018 model year~~, for each model year, the percentage of MDVs certified to an SFTP emission category set forth in this section shall be equal to or greater than the total percentage certified to the FTP ULEV250, ULEV200, SULEV170, and SULEV150 emission categories; of these vehicles, the percentage of MDVs certified to an SFTP SULEV emission category shall be equal to or greater than the total percentage certified to both the FTP SULEV170 and SULEV150 emission categories. For MDVs 10,001-14,000 lbs. GVWR, for each model year, the percentage of MDVs certified to an SFTP emission category set forth in this section shall be equal to or greater than the total percentage certified to the FTP ULEV400, ULEV270, SULEV230, and SULEV200 emission categories; of these vehicles, the percentage of MDVs certified to an SFTP SULEV emission category shall be equal to or greater than the total percentage certified to both the FTP SULEV230 and SULEV200 emission categories. ~~2018 and subsequent model year MDVs 8,501-10,000 lbs. GVWR certifying to the FTP ULEV250 and ULEV200 emission categories, including vehicles certifying with carryover data, shall comply with the SFTP ULEV standards set forth in subsection (a)(7)(C), and those certifying to FTP SULEV170 and SULEV150, including vehicles certifying with carryover data, shall comply with the SFTP SULEV standards set forth in subsection (a)(7)(C). 2018 and subsequent model year MDVs 10,001-14,000 lbs. GVWR certifying to FTP ULEV400 and ULEV270 emission categories, including vehicles certifying with carryover data, shall comply with the SFTP ULEV standards set forth in subsection (a)(7)(C), and those certifying to SULEV230 and SULEV200, including vehicles certifying with carryover data, shall comply with the SFTP SULEV standards set forth in subsection (a)(7)(C).~~

In addition, 2017 and subsequent model MDVs certifying to LEV III FTP PM emission standards on a 150,000-mile durability basis must also certify to the SFTP emission standards set forth in subsection (a)(7)(D).

(C) *Identifying a Manufacturer's Medium-Duty Vehicle Fleet.* For the 2016 and subsequent model years, each manufacturer's MDV fleet shall be defined as the total number of California-certified MDVs, other than MDPVs, produced and delivered for sale in California. For 2016 and subsequent model years, a manufacturer that elects to certify engines to the optional medium-duty engine emission standards in section 1956.8 shall not count those engines in the manufacturer's total production of California-certified medium-duty vehicles for purposes of this subparagraph.

(c) Calculation of NMOG + NOx Credits/Debits

(1) Calculation of NMOG+NOx Credits and Debits for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles.

(A) In 2015 and subsequent model years, a manufacturer shall calculate its credits or debits using the following equation.

[(Fleet Average NMOG+NOx Requirement) - (Manufacturer's Fleet Average NMOG+NOx Value)] x
(Total No. of Vehicles Produced and Delivered for Sale in California, Including ZEVs and HEVs).

(B) In 2015 and subsequent model years, a manufacturer that achieves fleet average NMOG+NOx values lower than the fleet average NMOG+NOx requirement for the corresponding model year shall receive credits in units of g/mi NMOG + NOx. A manufacturer with 2015 and subsequent model year fleet average NMOG+NOx values greater than the fleet average requirement for the corresponding model year shall receive debits in units of g/mi NMOG + NOx equal to the amount of negative credits determined by the aforementioned equation. The total g/mi NMOG+NOx credits or debits earned for PCs and LDTs 0-3750 lbs. LVW, and for LDTs 3751 lbs. LVW - 8500 lbs. GVWR and for MDPVs shall be summed together. The resulting amount shall constitute the g/mi NMOG+NOx credits or debits accrued by the manufacturer for the model year.

(2) ~~Calculation of NMOG+NOx Credits and Debits for Medium-Duty Vehicles Other than MDPVs.~~

~~A manufacturer that elects to comply with the phase-in requirements for LEV III medium-duty vehicles other than MDPVs in subsection (b)(3)(A) or subsection (b)(3)(B) shall calculate vehicle-equivalent NMOG+NOx credits in accordance with subsection (c)(2)(A). A manufacturer that elects to comply with the alternative phase-in schedule for LEV III medium- duty vehicles other than MDPVs in subsection (b)(3)(C) shall calculate fleet average NMOG+NOx credits in accordance with subsection (c)(2)(B).~~

~~(A)~~ Calculation of Vehicle-Equivalent NMOG + NOx Credits for Medium-Duty Vehicles Other than MDPVs.

(A) ~~1.~~ In 2016 and subsequent model years, a manufacturer that produces and delivers for sale in California MDVs, other than MDPVs, in excess of the equivalent requirements for LEV III vehicles certified to the exhaust emission standards set forth in subsection (a)(1), 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:

(1.00) x {[(No. of LEV395s and LEV630s Produced excluding HEVs) + (No. of LEV395 HEVs x HEV VEC factor for LEV395s) + (No. of LEV630 HEVs x HEV VEC factor for LEV630s)] – (No. of LEV395s and LEV630s Required to be Produced)} +

(1.14) x {[(No. of ULEV340s and ULEV570s Produced excluding HEVs) + (No. of ULEV340 HEVs x HEV VEC factor for ULEV340s) + (No. of ULEV570 HEVs x HEV VEC factor for ULEV570s)] – (No. of ULEV340s and ULEV570s Required to be Produced)} +

(1.37) x {[(No. of ULEV250s and ULEV400s Produced excluding HEVs) + (No. of ULEV250 HEVs x HEV VEC factor for ULEV250s) + (No. of ULEV400 HEVs x HEV VEC factor for ULEV400s)] - (No. of ULEV250s and ULEV400s Required to be Produced)} +

11/6/26
PER AGENCY REQUEST
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(1.49) x {[(No. of ULEV200s and ULEV270s Produced excluding HEVs) + (No. of ULEV200 HEVs x HEV VEC factor for ULEV200s) + (No. of ULEV270 HEVs x HEV VEC factor for ULEV270s)] - (No. of ULEV200s and ULEV270s Required to be Produced)} +

(1.57) x {[(No. of SULEV170s and SULEV230s Produced excluding HEVs) + (No. of SULEV170 HEVs x HEV VEC factor for SULEV170s) + (No. of SULEV230 HEVs x HEV VEC factor for SULEV230s)] - (No. of SULEV170s and SULEV230s Required to be Produced)} +

(1.62) x {[(No. of SULEV150s and SULEV200s Produced excluding HEVs) + (No. of SULEV150 HEVs x HEV VEC factor for SULEV150s) + (No. of SULEV200 HEVs x HEV VEC factor for SULEV200s)] - (No. of SULEV150s and SULEV200s Required to be Produced)} +[(2.00) x (No. of ZEVs Certified and Produced as MDVs)].

(B) ~~2.~~ MDV HEV VEC factor. The MDV HEV factor is calculated as follows:

For LEV395s: $$1 + \frac{(\text{LEV395standard-ULEV340standard}) \times \text{Zero-emission VMT Allowance}}{\text{LEV395standard}}$$

For ULEV340s: $$1 + \frac{(\text{ULEV340standard-ULEV250standard}) \times \text{Zero-emission VMT Allowance}}{\text{ULEV340standard}}$$

For ULEV250s: $$1 + \frac{(\text{ULEV250standard-ULEV200standard}) \times \text{Zero-emission VMT Allowance}}{\text{ULEV250standard}}$$

For ULEV200s: $$1 + \frac{(\text{ULEV200standard-SULEV170standard}) \times \text{Zero-emission VMT Allowance}}{\text{ULEV3200standard}}$$

For SULEV170s: $$1 + \frac{(\text{SULEV170standard-SULEV150standard}) \times \text{Zero-emission VMT Allowance}}{\text{SULEV170standard}}$$

For SULEV150s: $$1 + \frac{(\text{SULEV150standard-ZEV standard}) \times \text{Zero-emission VMT Allowance}}{\text{SULEV150standard}}$$

For LEV630s: $$1 + \frac{(\text{LEV630standard-ULEV570standard}) \times \text{Zero-emission VMT Allowance}}{\text{LEV630standard}}$$

For ULEV570s: $$1 + \frac{(\text{ULEV570standard-ULEV400standard}) \times \text{Zero-emission VMT Allowance}}{\text{ULEV570standard}}$$

For ULEV400s: $$1 + \frac{(\text{ULEV400standard-ULEV270standard}) \times \text{Zero-emission VMT Allowance}}{\text{ULEV400standard}}$$

For ULEV270s: $$1 + \frac{(\text{ULEV270standard-SULEV230standard}) \times \text{Zero-emission VMT Allowance}}{\text{ULEV270standard}}$$

For SULEV230s: $$1 + \frac{(\text{SULEV230standard-SULEV200standard}) \times \text{Zero-emission VMT Allowance}}{\text{SULEV230standard}}$$

For SULEV200s: $$1 + \frac{(\text{SULEV200standard-ZEV standard}) \times \text{Zero-emission VMT Allowance}}{\text{SULEV200standard}}$$

where "Zero-emission VMT Allowance" for an HEV is determined in accordance with section C of the "California Exhaust Emission Standards and Test Procedures for 2009 through 2017 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, or the "California Exhaust Emission Standards and Test Procedures for 2018 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 1962.2, as applicable, except that for the purposes of this subsection (c)(2)(B), the maximum allowable Zero-emission VMT Allowance that may be used in these equations is 1.0.

(C)~~3.~~ A manufacturer that fails to produce and deliver for sale in California the equivalent quantity of MDVs certified to LEV III exhaust emission standards, shall receive "Vehicle-Equivalent Debits" (or "VEDs") equal to the amount of negative VECs determined by the equation in subsection (c)(2)(A).

~~(B) Calculation of Fleet Average NMOG+NOx Credits and Debits for Medium-Duty Vehicles Other than MDPVs.~~

~~1. In 2016 and subsequent model years, a manufacturer shall calculate its medium-duty vehicle fleet average credits or debits using the following equation.~~

~~[(Fleet Average NMOG+NOx Requirement) - (Manufacturer's Fleet Average NMOG+NOx Value)] x (Total No. of Vehicles Produced and Delivered for Sale in California, Including ZEVs and HEVs).~~

~~2. In 2016 and subsequent model years, a manufacturer that achieves fleet average NMOG+NOx values lower than the fleet average NMOG+NOx requirement for the corresponding model year shall receive credits in units of g/mi NMOG+NOx. A manufacturer with 2016 and subsequent model year fleet average NMOG+NOx values greater than the fleet average requirement for the corresponding model year shall receive debits in units of g/mi NMOG+NOx equal to the amount of negative credits determined by the aforementioned equation. The total g/mi NMOG+NOx credits or debits earned for MDVs 8,501-10,000 lbs. GVWR excluding MDPVs, and for MDVs 10,001-14,000 lbs. GVWR shall be summed together. The resulting amount shall constitute the g/mi NMOG+NOx credits or debits accrued by the manufacturer for the model year. Medium-duty fleet average credits and debits earned in accordance with subsection (c)(2)(B) may not be summed together with fleet average credits and debits earned for passenger cars, light-duty trucks, and medium-duty passenger vehicles in accordance with subsection (c)(1).~~

~~(C)~~(D) Only ZEVs certified as MDVs and not used to meet the ZEV requirement shall be included in the calculation of VECs ~~or the calculation of NMOG+NOx credits and debits~~.

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(3) Procedure for Offsetting Debits.

(A) A manufacturer shall equalize emission debits by earning g/mi NMOG+NOx emission credits or VECs in an amount equal to the g/mi NMOG+NOx debits or VEDs, or by submitting a commensurate amount of g/mi NMOG+NOx credits or VECs to the Executive Officer that were earned previously or acquired from another manufacturer. A manufacturer shall equalize NMOG+NOx debits for PCs, LDTs, and MDPVs and VEC debits ~~or NMOG+NOx debits, as applicable,~~ for MDVs within three model years. 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. A manufacturer demonstrating compliance under Option 2 in subsection (b)(1)(A)1.a., must calculate the emission debits that are subject to a civil penalty under Health and Safety Code section 43211 separately for California, the District of Columbia, and for each individual state that is included in the fleet average greenhouse gas requirements in subsection (b)(1)(A)1.a. The manufacturer must calculate these emission debits separately for California, the District of Columbia, and each individual state using the formula in subsections (c)(1) and (c)(2), except that the "Total No. of Vehicles Produced and Delivered for Sale in California, Including ZEVs and HEVs" shall be calculated separately for the District of Columbia and each individual state.

For the purposes of Health and Safety Code §43211, the number of passenger cars, light-duty trucks, and medium-duty passenger vehicles not meeting the state board's emission standards shall be determined by dividing the total amount of g/mi NMOG+NOx emission debits for the model year by the g/mi NMOG+NOx fleet average requirement for PCs and LDTs 0-3750 lbs. LVW and for LDTs 3751 lbs. LVW - 8500 lbs. GVW and MDPVs 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 ~~or shall be determined by dividing the total amount of g/mi NMOG+NOx emission debits for the model year by the g/mi NMOG+NOx fleet average requirement for MDVs 8,501-10,000 lbs. GVW and for MDVs 10,001 lbs. – 14,000 lbs. GVW applicable for the model year in which the debits were first incurred~~.

(B) For the 2015 and subsequent model years, the emission credits earned in any given model year shall retain full value through five subsequent model years. Credits will have no value if not used by the beginning of the sixth model year after being earned.

(4) *Changing NMOG Credits and Debits to NMOG+NOx Credits and Debits.* The value of any emission credits that have not been used prior to the start of the 2015 model year and any emission debits that have not been equalized prior to the start of the 2015 model year earned shall be converted to NMOG+NOx credits at the start of the 2015 model year by multiplying their values by a factor of 3.0. These credits and debits are subject to the provisions in subsection 1961(c)(3).

~~(5) *Changing Vehicle-Equivalent Credits and Debits to NMOG+NOx Fleet Average Credits and Debits*. The value of any vehicle-equivalent credits and debits earned in accordance with subsection (c)(2) or subsection 1961(c)(2) shall be converted to NMOG+NOx fleet average credits and debits using the provisions in subsection (c)(2)(B), for each model year in which the credits or debits are accrued. For the purpose of applying the formula in subsection (c)(2)(B)1., for credits and debits earned in accordance with subsection 1961(c)(2), the Fleet Average NMOG+NOx Requirement is 0.364 g/mi for MDVs between 8,501-10,000 lbs. GVWR and 0.592 g/mi for MDVs between 10,001-14,000 lbs. GVWR. These credits and debits are subject to the provisions in subsection (c)(3) or subsection 1961(c)(3), as applicable, based on the model year in which they are first earned as vehicle-equivalent credits or debits.~~

(d) *Test Procedures.* The certification requirements and test procedures for determining compliance with the emission standards in this section are set forth in the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," as amended December 6, 2012, the "California Non-Methane Organic Gas Test Procedures ~~for 1993 through 2016 Model Year Vehicles~~," as amended December 6, 2012~~September 2, 2015, and the "California Non-Methane Organic Gas Test Procedures for 2017 and Subsequent Model Year Vehicles," as adopted September 2, 2015~~, which are all incorporated herein by reference. In the case of hybrid electric vehicles and on-board fuel-fired heaters, the certification requirements and test procedures for determining compliance with the emission standards in this section are set forth in the "California Exhaust Emission Standards and Test Procedures for 2009 through 2017 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, and the "California Exhaust Emission Standards and Test Procedures for 2018 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 1962.2.

(e) *Abbreviations.* The following abbreviations are used in this section:

"ALVW" means adjusted loaded vehicle weight

"ASTM" means American Society of Testing and Materials.

"CO" means carbon monoxide.

"FTP" means Federal Test Procedure. "g/mi" means grams per mile.

"GVW" means gross vehicle weight.

"GVWR" means gross vehicle weight rating.

"HEV" means hybrid-electric vehicle.

"LDT" means light-duty truck.

"LDT1" means a light-duty truck with a loaded vehicle weight of 0-3750 pounds.

"LDT2" means a light-duty truck with a loaded vehicle weight of 3751 pounds to a gross vehicle weight rating of 8500 pounds.

"LEV" means low-emission vehicle.

"LPG" means liquefied petroleum gas.

"LVW" means loaded vehicle weight.

"MDPV" means medium-duty passenger vehicle.

"MDV" means medium-duty vehicle.

"NMHC" means non-methane hydrocarbons. "mg/mi" means milligrams per mile.

"NMHC" means non-methane hydrocarbons.

"Non-Methane Organic Gases" or "NMOG" means the total mass of oxygenated and non-oxygenated hydrocarbon emissions.

"NOx" means oxides of nitrogen.

"PC" means passenger car.

"SULEV" means super-ultra-low-emission vehicle.

"ULEV" means ultra-low-emission vehicle.

"VEC" means vehicle-equivalent credits.

"VED" means vehicle-equivalent debits.

"VMT" means vehicle miles traveled.

"ZEV" means zero-emission vehicle.

(f) Severability. Each provision of this section is severable, and in the event that any provision of this section is held to be invalid, the remainder of both this section and this article remains in full force and effect.

Note: Authority cited: Sections 39500, 39600, 39601, 43013, 43018, 43101, 43104, 43105 and 43106, Health and Safety Code. Reference: Sections 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43204 and 43205, Health and Safety Code.

§ 1961.3.1. Greenhouse Gas Exhaust Emission Standards and Test Procedures--2017 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

Introduction.

This section 1961.3.1 sets the greenhouse gas emission levels from new 2017 and subsequent model year passenger cars, light-duty trucks, and medium-duty passenger vehicles. Light-duty trucks from 3751 lbs. LVW - 8500 lbs. GVW that are certified to the Option 1 LEV II NOx Standard in section 1961(a)(1) 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.

Emergency vehicles may be excluded from these greenhouse gas emission requirements. The manufacturer must notify the Executive Officer that they are making such an election, in writing, prior to the start of the applicable model year or must comply with this section 1961.3.1.

(a) Greenhouse Gas Emission Requirements.

(1) Fleet Average Carbon Dioxide Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles.

For the purpose of determining compliance with this subsection (a)(1), the applicable fleet average CO_2 mass emission standards for each model year is the sales-weighted average of the calculated CO_2 exhaust mass emission target values for each manufacturer. For each model year, the sales-weighted fleet average CO_2 mass emissions value shall not exceed the sales-weighted average of the calculated CO_2 exhaust mass emission target values for that manufacturer.

(A) Fleet Average Carbon Dioxide Target Values for Passenger Cars.

The fleet average CO_2 exhaust mass emission target values for passenger cars that are produced and delivered for sale in California each model year shall be determined as follows:

1. For passenger cars with a footprint of less than or equal to 41 square feet, the gram per mile CO_2 target value shall be selected for the appropriate model year from the following table:

Model Year	*CO_2 Target Value (grams/mile)*
2017	195.0
2018	185.0
2019	175.0
2020	166.0
2021	157.0
2022	150.0
2023	143.0
2024	137.0
2025 and subsequent	131.0

2. For passenger cars with a footprint of greater than 56 square feet, the gram per mile CO_2 target value shall be selected for the appropriate model year from the following table:

Model Year	*CO_2 Target Value (grams/mile)*
2017	263.0
2018	250.0
2019	238.0
2020	226.0
2021	215.0
2022	205.0
2023	196.0
2024	188.0
2025 and subsequent	179.0

3. For passenger cars with a footprint that is greater than 41 square feet and less than or equal to 56 square feet, the gram per mile CO_2 target value shall be calculated using the following equation and rounded to the nearest 0.1 grams/mile:

Target gCO_2/mile = $[a \times f] + b$
Where: f is the vehicle footprint and coefficients a and b are selected from the following table for the applicable model year.

Model Year	*a*	*b*
2017	4.53	8.9

2018	4.35	6.5
2019	4.17	4.2
2020	4.01	1.9
2021	3.84	-0.4
2022	3.69	-1.1
2023	3.54	-1.8
2024	3.4	-2.5
2025 and subsequent	3.26	-3.2

(B) Fleet Average Carbon Dioxide Target Values for Light-Duty Trucks and Medium-Duty Passenger Vehicles. The fleet average CO_2 exhaust mass emission target values for light-duty trucks and medium-duty passenger vehicles that are produced and delivered for sale in California each model year shall be determined as follows:

1. For light-duty trucks and medium-duty passenger vehicles with a footprint of less than or equal to 41 square feet, the gram per mile CO_2 target value shall be selected from the following table:

Model Year	*CO_2 Target Value (grams/mile)*
2017	238.0
2018	227.0
2019	220.0
2020	212.0
2021	195.0
2022	186.0
2023	176.0
2024	168.0
2025 and subsequent	159.0

2. For light-duty trucks and medium-duty passenger vehicles with a footprint of greater than 41 square feet and less than or equal to the maximum footprint value specified in the table below for each model year, the gram/mile CO_2 target value shall be calculated using the following equation and rounded to the nearest 0.1 grams/mile:

Target gCO_2/mile = $[a \times f] + b$

Where: *f* is the vehicle footprint and coefficients *a* and *b* are selected from the following table for the applicable model year.

Model year	*Maximum Footprint*	*a*	*b*
2017	50.7	4.87	38.3
2018	60.2	4.76	31.6
2019	66.4	4.68	27.7
2020	68.3	4.57	24.6
2021	73.5	4.28	19.8
2022	74.0	4.09	17.8
2023	74.0	3.91	16.0
2024	74.0	3.74	14.2
2025 and subsequent	74.0	3.58	12.5

3. For light-duty trucks and medium-duty passenger vehicles with a footprint that is greater than the minimum footprint value specified in the table below and less than or equal to the maximum footprint value specified in the table below for each model year, the gram/mile CO_2 target value shall be calculated using the following equation and rounded to the nearest 0.1 grams/mile:

Target gCO_2/mile = [*a* x *f*] + *b*
Where: *f* is the vehicle footprint and coefficients *a* and *b* are selected from the following table for the applicable model year.

Model year	*Minimum Footprint*	*Maximum Footprint*	*a*	*b*
2017	50.7	66.0	4.04	80.5
2018	60.2	66.0	4.04	75.0

4. For light-duty trucks and medium-duty passenger vehicles with a footprint that is greater than the minimum value specified in the table below for each model year, the gram/mile CO_2 target value shall be selected for the applicable model year from the following table:

Model year	*Minimum Footprint*	*CO_2 target value (grams/mile)*
2017	66.0	347.0
2018	66.0	342.0
2019	66.4	339.0
2020	68.3	337.0
2021	73.5	335.0
2022	74.0	321.0
2023	74.0	306.0
2024	74.0	291.0
2025 and subsequent	74.0	277.0

(C) Calculation of Manufacturer-Specific Carbon Dioxide Fleet Average Standards. For each model year, each manufacturer must comply with fleet average CO_2 standards for passenger cars and for light-duty trucks plus medium-duty passenger vehicles, as applicable, calculated for that model year as follows. For each model year, a manufacturer must calculate separate fleet average CO_2 values for its passenger car fleet and for its combined light-duty truck plus medium-duty passenger vehicle fleet using the CO_2 target values in subsection (a)(A). These calculated CO_2 values are the manufacturer-specific fleet average CO_2 standards for passenger cars and for light-duty trucks plus medium-duty passenger vehicles, as applicable, which apply for that model year.

1. A CO_2 target value shall be calculated in accordance with subparagraph (a)(1)(A) or (a)(1)(B), as applicable, for each unique combination of model type and footprint value.

2. Each CO_2 target value, determined for each unique combination of model type and footprint value, shall be multiplied by the total production of that model type/footprint combination for the applicable model year.

3. The resulting products shall be summed, and that sum shall be divided by the total production of passenger cars or total combined production of light-duty trucks and medium-duty passenger vehicles, as applicable, in that model year. The result shall be rounded to the nearest whole gram per mile. This result shall be the applicable fleet average CO_2 standard for the manufacturer's passenger car fleet or its combined light-duty truck and medium-duty passenger vehicle fleet, as applicable.

(2) Nitrous Oxide (N_2O) and Methane (CH_4) Exhaust Emission Standards for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles. Each manufacturer's fleet of combined passenger automobile, light-duty trucks, and medium-duty passenger vehicles must comply with N_2O and CH_4 standards using either the provisions of subsection (a)(2)(A), subsection (a)(2)(B), or subsection (a)(2)(C). Except with prior approval of the Executive Officer, a manufacturer may not use the provisions of both subsection (a)(2)(A) and subsection (a)(2)(B) in the same model year. For example, a manufacturer may not use the provisions of subsection (a)(2)(A) for their passenger automobile fleet and the provisions of subsection (a)(2)(B) for their light-duty truck and medium-duty passenger vehicle fleet in the same model year. The manufacturer may use the provisions of both subsections (a)(2)(A) and (a)(2)(C) in the same model year. For example, a manufacturer may meet the N_2O standard in subsection (a)(2)(A)1. and an alternative CH_4 standard determined under subsection (a)(2)(C).

(A) Standards Applicable to Each Test Group.

1. Exhaust emissions of N_2O shall not exceed 0.010 grams per mile at full useful life, as measured on the FTP (40 CFR, Part 86, Subpart B), as amended by 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." Manufacturers may optionally determine an alternative N_2O standard under subsection (a)(2)(C).

2. Exhaust emissions of CH_4 shall not exceed 0.030 grams per mile at full useful life, as measured on the FTP (40 CFR, Part 86, Subpart B), as amended by 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." Manufacturers may optionally determine an alternative CH_4 standard under subsection (a)(2)(C).

(B) Including N_2O and CH_4 in Fleet Averaging Program. Manufacturers may elect to not meet the emission standards in subsection (a)(2)(A). Manufacturers making this election shall measure N_2O and CH_4 emissions for each unique combination of model type and footprint value on both the FTP test cycle and the Highway Fuel Economy test cycle at full useful life, multiply the measured N_2O emissions value by 298 and the measured CH_4 emissions value by 25, and include both of these adjusted N_2O and CH_4 full useful life values in the fleet average calculations for passenger automobiles and light-duty trucks plus medium-duty passenger vehicles, as calculated in accordance with subsection (a)(2)(A)(D).

(C) Optional Use of Alternative N_2O and/or CH_4 Standards. Manufacturers may select an alternative standard applicable to a test group, for either N_2O or CH_4, or both. For example, a manufacturer may choose to meet the N_2O standard in subsection (a)(2)(A)1. and an alternative CH_4 standard in lieu of the standard in subsection (a)(2)(A)2. The alternative standard for each pollutant must be less stringent than the applicable exhaust emission standard specified in subsection (a)(2)(A). Alternative N_2O and CH_4 standards apply to emissions as measured on the FTP (40 CFR, Part 86, Subpart B), as amended by 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," for the full useful life, and become the applicable certification and in-use emission standard(s) for the test group. Manufacturers using an alternative standard for N_2O and/or CH_4 must calculate emission debits according to the provisions of subsection (a)(2)(D) for each test group/alternative standard combination. Debits must be included in the calculation of total credits or debits generated in a model year as required under subsection (b)(1)(B). Flexible fuel vehicles (or other vehicles certified for multiple fuels) must meet these alternative standards when tested on all applicable test fuel type.

(D) CO_2-Equivalent Debits. CO_2-equivalent debits for test groups using an alternative N_2O and/or CH_4 standard as determined under (a)(2)(C) shall be calculated according to the following equation and rounded to the nearest whole gram per mile:

Debits = GWP x (Production) x (AltStd - Std)
Where:
Debits = N_2O or CH_4 CO_2-equivalent debits for a test group using an alternative N_2O or CH_4 standard;
GWP = 25 if calculating CH_4 debits and 298 if calculating N_2O debits;
Production = The number of vehicles of that test group produced and delivered for sale in California;
AltStd = The alternative standard (N_2O or CH_4) selected by the manufacturer under (a)(2)(C); and
Std = The exhaust emission standard for N_2O or CH_4 specified in (a)(2)(A).

(3) *Alternative Fleet Average Standards for Manufacturers with Limited U.S. Sales.* Manufacturers meeting the criteria in this subsection (a)(3) may request that the Executive Officer establish alternative fleet average CO_2 standards that would apply instead of the standards in subsection (a)(1).

(A) Eligibility for Alternative Standards. Eligibility as determined in this subsection (a)(3) shall be based on the total sales of combined passenger cars, light-duty trucks, and medium-duty passenger vehicles. The terms "sales" and "sold" as used in this subsection (a)(3) shall mean vehicles produced and delivered for sale (or sold) in the states and territories of the United States. For the purpose of determining eligibility the sales of related companies shall be aggregated according to the provisions of section 1900. To be eligible for alternative standards established under this subsection (a)(3), the manufacturer's average sales for the three most recent consecutive model years must remain below 5,000. If a manufacturer's average sales for the three most recent consecutive model years exceeds 4,999, the manufacturer will no longer be eligible for exemption and must meet applicable emission standards as follows.

1. If a manufacturer's average sales for three consecutive model years exceeds 4,999, and if the increase in sales is the result of corporate acquisitions, mergers, or purchase by another manufacturer, the manufacturer shall comply with the emission standards described in subsections (a)(1) and (a)(2), as applicable, beginning with the first model year after the last year of the three consecutive model years.

2. If a manufacturer's average sales for three consecutive model years exceeds 4,999 and is less than 50,000, and if the increase in sales is solely the result of the manufacturer's expansion in vehicle production (not the result of corporate acquisitions, mergers, or purchase by another manufacturer), the manufacturer shall comply with the emission standards described in subsections (a)(1) and (a)(2), as applicable, beginning with the second model year after the last year of the three consecutive model years.

(B) *Requirements for New Entrants into the U.S. Market.* New entrants are those manufacturers without a prior record of automobile sales in the United States and without prior certification to (or exemption from, under 40 CFR § 86.1801-12(k)) greenhouse gas emission standards in 40 CFR § 86.1818-12 or greenhouse gas standards in section 1961.1. In addition to the eligibility requirements stated in subsection (a)(3)(A), new entrants must meet the following requirements:

1. In addition to the information required under subsection (a)(3)(D), new entrants must provide documentation that shows a clear intent by the company to actually enter the U.S. market in the years for which alternative standards are requested. Demonstrating such intent could include providing documentation that shows the establishment of a U.S. dealer network, documentation of work underway to meet other U.S. requirements (e.g., safety standards), or other information that reasonably establishes intent to the satisfaction of the Executive Officer.

2. Sales of vehicles in the U.S. by new entrants must remain below 5,000 vehicles for the first two model years in the U.S. market and the average sales for any three consecutive years within the first five years of entering the U.S. market must remain below 5,000 vehicles. Vehicles sold in violation of these limits will be considered not covered by the certificate of conformity and the manufacturer will be subject to penalties on an individual-vehicle basis for sale of vehicles not covered by a certificate. In addition, violation of these limits will result in loss of eligibility for alternative standards until such point as the manufacturer demonstrates two consecutive model years of sales below 5,000 automobiles.

3. A manufacturer with sales in the most recent model year of less than 5,000 automobiles, but where prior model year sales were not less than 5,000 automobiles, is eligible to request alternative standards under subsection (a)(3). However, such a manufacturer will be considered a new entrant and subject to the provisions regarding new entrants in this subsection (a)(3), except that the requirement to demonstrate an intent to enter the U.S. market in subsection (a)(3)(B)(1) shall not apply.

(C) How to Request Alternative Fleet Average Standards. Eligible manufacturers may petition for alternative standards for up to five consecutive model years if sufficient information is available on which to base such standards.

1. To request alternative standards starting with the 2017 model year, eligible manufacturers must submit a completed application no later than July 30, 2013.

2. To request alternative standards starting with a model after 2017, eligible manufacturers must submit a completed application no later than 36 months prior to the start of the first model year to which the alternative standards would apply.

3. The application must contain all the information required in subsection (a)(3)(D), and must be signed by a chief officer of the company. If the Executive Officer determines that the content of the request is incomplete or insufficient, the manufacturer will be notified and given an additional 30 days to amend the request.

(D) Data and Information Submittal Requirements. Eligible manufacturers requesting alternative standards under subsection (a)(3) must submit the following information to the California Air Resources Board. The Executive Officer may request additional information as s/he deems appropriate. The completed request must be sent to the California Air Resources Board at the following address: Chief, Emissions Certification and Compliance Division, California Air Resources Board, 4001 Iowa Avenue, Riverside, CA 92507.

1. Vehicle Model and Fleet Information.

   a. The model years to which the requested alternative standards would apply, limited to five consecutive model years.

   b. Vehicle models and projections of production volumes for each model year.

   c. Detailed description of each model, including the vehicle type, vehicle mass, power, footprint, and expected pricing.

d. The expected production cycle for each model, including new model introductions and redesign or refresh cycles.

2. Technology Evaluation Information.

a. The CO_2 reduction technologies employed by the manufacturer on each vehicle model, including information regarding the cost and CO_2 -reducing effectiveness. Include technologies that improve air conditioning efficiency and reduce air conditioning system leakage, and any "off-cycle" technologies that potentially provide benefits outside the operation represented by the FTP and the HWFET.

b. An evaluation of comparable models from other manufacturers, including CO_2 results and air conditioning credits generated by the models. Comparable vehicles should be similar, but not necessarily identical, in the following respects: vehicle type, horsepower, mass, power-to-weight ratio, footprint, retail price, and any other relevant factors. For manufacturers requesting alternative standards starting with the 2017 model year, the analysis of comparable vehicles should include vehicles from the 2012 and 2013 model years, otherwise the analysis should at a minimum include vehicles from the most recent two model years.

c. A discussion of the CO_2-reducing technologies employed on vehicles offered outside of the U.S. market but not available in the U.S., including a discussion as to why those vehicles and/or technologies are not being used to achieve CO_2 reductions for vehicles in the U.S. market.

d. An evaluation, at a minimum, of the technologies projected by the California Air Resources Board in the "Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider the "LEV III" Amendments to The California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards and Test Procedures and to the On-Board Diagnostic System Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, and to the Evaporative Emission Requirements for Heavy-Duty Vehicles" and the appendices to this report, released on December 7, 2011, as those technologies likely to be used to meet greenhouse gas emission standards and the extent to which those technologies are employed or projected to be employed by the manufacturer. For any technology that is not projected to be fully employed, the manufacturer must explain why this is the case.

3. Information Supporting Eligibility.

a. U.S. sales for the three previous model years and projected sales for the model years for which the manufacturer is seeking alternative standards.

b. Information regarding ownership relationships with other manufacturers, including details regarding the application of the provisions of 40 CFR § 86.1838-01(b)(3) and section 1900 regarding the aggregation of sales of related companies.

(E) Alternative Standards. Upon receiving a complete application, the Executive Officer will review the application and determine whether an alternative standard is warranted. If the Executive Officer judges that an alternative standard is warranted, the following standards shall apply. For the purposes of this subsection (a)(3)(E), an "ultra-small volume manufacturer" shall mean a manufacturer that meets the requirements of subsection (a)(3).

1. At the beginning of the model year that is three model years prior to the model year for which an alternative standard is requested, each ultra-small volume manufacturer shall identify all vehicle models from the model year that is four model years prior to the model year for which an alternative standard is requested, certified by a large volume manufacturer that are comparable to that small volume manufacturer's vehicle models for the model year for which an alternative standard is requested, based on model type and footprint value. The ultra-small volume manufacturer shall demonstrate to the Executive Officer the appropriateness of each comparable vehicle model selected. Upon approval of the Executive Officer, s/he shall provide to the ultra-small volume manufacturer the target grams CO_2 per mile for each vehicle model type and footprint value that is approved. The ultra-small volume manufacturer shall calculate its fleet average CO_2 standard in accordance with subsection (a)(1)(C) based on these target grams CO_2 per mile values provided by the Executive Officer.

2. In the 2017 and subsequent model years, an ultra-small volume manufacturer shall either:

a. not exceed its fleet average CO_2 standard calculated in accordance with subsection (a)(1)(C) based on the target grams CO_2 per mile values provided by the Executive Officer; or
b. upon approval of the Executive Officer, if an ultra-small volume manufacturer demonstrates a vehicle model uses an engine, transmission, and emission control system and has a footprint value that are identical to a configuration certified for sale in California by a large volume manufacturer, those ultra-small volume manufacturer vehicle models are exempt from meeting the requirements in paragraph 2.a. of this subsection.

(F) Restrictions on Credit Trading. Manufacturers subject to alternative standards approved by the Executive Officer under this subsection (a)(3) may not trade credits to another manufacturer. Transfers of credits between a manufacturer's car and truck fleets are allowed.

(4) Greenhouse Gas Emissions Values for Electric Vehicles, "Plug-In" Hybrid Electric Vehicles, and Fuel Cell Vehicles.

(A) Electric Vehicle Calculations.

1. For each unique combination of model type and footprint value, a manufacturer shall calculate the City CO_2 Value using the following formula:

City CO_2 *Value* = *(270* gCO_2e/kWh*)* * E_{EV} - 0.25 * $CO_{2\ target}$
Where E_{EV} is measured directly from each cycle for each test vehicle of battery electric vehicle technology in units of kilowatt-hours per mile (per SAE J1634, incorporated herein by reference).

2. For each unique combination of model type and footprint value, a manufacturer shall calculate the Highway CO_2 Value using the following formula:

Highway CO_2 Value = *(270* gCO_2e/kWh*)* * E_{EV} - 0.25 * $CO_{2\ target}$
Where E_{EV} is measured directly from each cycle for each test vehicle of battery electric vehicle technology in units of kilowatt-hours per mile (per SAE J1634, incorporated herein by reference).

(B) "Plug-In" Hybrid Electric Vehicle Calculations. For each unique combination of model type and footprint value, a manufacturer shall calculate the City CO_2 Value and the Highway CO_2 Value using the following formulas:

City CO_2 Value = GHG_{urban}
and
Highway CO_2 Value = $GHG_{highway}$
Where GHG_{urban} and $GHG_{highway}$ are measured in accordance with section G.12 of the "California Exhaust Emission Standards and Test Procedures for 2009 through 2017 Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes" or the "California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes," as applicable.

(C) Fuel Cell Vehicle Calculations. For each unique combination of model type and footprint value, a manufacturer shall calculate the City CO_2 Value and the Highway CO_2 Value using the following formulas:

City CO_2 = GHG_{FCV} = (9132 $gCO_2e/kg\ H_2$) * H_{FCV} - $G_{upstream}$
and
Highway CO_2 = GHG_{FCV} = (9132 $gCO_2e/kg\ H_2$) * H_{FCV} - $G_{upstream}$ Where H_{FCV} means hydrogen consumption in kilograms of hydrogen per mile, measured for the applicable test cycle, in accordance with SAE J2572 (published October 2008), incorporated herein by reference.

(5) Calculation of Fleet Average Carbon Dioxide Value.

(A) For each unique combination of model type and footprint value, a manufacturer shall calculate a combined city/highway CO_2 exhaust emission value as follows:

0.55 x City CO_2 Value + 0.45 x Highway CO_2 Value

"City" CO_2 exhaust emissions shall be measured using the FTP test cycle (40 CFR, Part 86, Subpart B), as amended by 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." "Highway" CO_2 exhaust emission shall be measured using the using the Highway Fuel Economy Test (HWFET; 40 CFR 600 Subpart B).

(B) Each combined city/highway CO_2 exhaust emission, determined for each unique combination of model type and footprint value, shall be multiplied by the total production of that model type/footprint combination for the applicable model year.

(C) The resulting products shall be summed, and that sum shall be divided by the total production of passenger cars or total combined production of light-duty trucks and medium-duty passenger vehicles, as applicable, in that model year. The result shall be rounded to the nearest whole gram per mile. This result shall be the manufacturer's actual sales-weighted fleet average CO_2 value for the manufacturer's passenger car fleet or its combined light-duty truck and medium-duty passenger vehicle fleet, as applicable.

(D) For each model year, a manufacturer must demonstrate compliance with the fleet average requirements in section (a)(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 1961.3.1, 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 this section, 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).

1. 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. Once a manufacturer has selected compliance Option 2, that selection applies unless the manufacturer selects Option 1 and notifies the Executive Officer of that selection in writing before the start of the applicable model year.

2. When a manufacturer is demonstrating compliance using Option 2 for a given model year, the term "in California" as used in section means 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).

3. A manufacturer that selects compliance Option 2 must provide to the Executive Officer separate values for the number of vehicles in each model type and footprint value produced and delivered for sale in the District of Columbia and for each individual state within the average and the City CO_2 Value and Highway CO_2 exhaust emission values that apply to each model type and footprint value.

(6) Credits for Reduction of Air Conditioning Direct Emissions. Manufacturers may generate A/C Direct Emissions Credits by implementing specific air conditioning system technologies designed to reduce air conditioning direct emissions over the useful life of their vehicles. A manufacturer may only use an A/C Direct Emissions Credit for vehicles within a model type upon approval of the A/C Direct Emissions Credit for that model type by the Executive Officer. The conditions and requirements for obtaining approval of an A/C Direct Emissions Credit are described in (A) through (F), below.

(A) Applications for approval of an A/C Direct Emissions Credit must be organized by model type. The applications must also include:

- vehicle make and
- number of vehicles within the model type that will be equipped with the air conditioning system to which the leakage credit shall apply.

Separate applications must be submitted for any two configurations of an A/C system with differences other than dimensional variation.

(B) To obtain approval of the A/C Direct Emissions Credit, the manufacturer must demonstrate through an engineering evaluation that the A/C system under consideration reduces A/C direct emissions. The demonstration must include all of the following elements:

- the amount of A/C Direct Emissions Credit requested, in grams of CO_2-equivalent per mile (gCO_2e/mi);
- the calculations identified in section (a)(6)(C) justifying that credit amount;
- schematic of the A/C system;
- specifications of the system components with sufficient detail to allow reproduction of the calculation; and
- an explanation describing what efforts have been made to minimize the number of fittings and joints and to optimize the components in order to minimize leakage.

Calculated values must be carried to at least three significant figures throughout the calculations, and the final credit value must be rounded to one tenth of a gram of CO_2-equivalent per mile (gCO_2e/mi).

(C) The calculation of A/C Direct Emissions Credit depends on the refrigerant or type of system, and is specified in paragraphs 1, 2, and 3 of this subsection.

1. HFC-134a vapor compression systems

For A/C systems that use HFC-134a refrigerant, the A/C Direct Emissions Credit is calculated using the following formula:

$$Direct\ Credit = Direct\ Credit\ Baseline \times (1 - \frac{LR}{Avg\ LR})$$

Where:
Direct Credit Baseline = 12.6 gCO_2e/mi for passenger cars;
Direct Credit Baseline = 15.6 gCO_2e/mi for light-duty trucks and medium-duty passenger vehicles;
Avg LR = 16.6 grams/year for passenger cars;

Avg LR = 20.7 grams/year for light-duty trucks and medium-duty passenger vehicles;
LR = the larger of *SAE LR* or *Min LR;*
Where:
SAE LR = initial leak rate evaluated using SAE International's Surface Vehicle Standard SAE J2727 (Revised February 2012), incorporated by reference, herein;
Min LR = 8.3 grams/year for passenger car A/C systems with belt-driven compressors;
Min LR = 10.4 grams/year for light-duty truck and medium-duty passenger vehicle A/C systems with belt-driven compressors;
Min LR = 4.1 grams/year for passenger car A/C systems with electric compressors;
Min LR = 5.2 grams/year for light-duty truck and medium-duty passenger vehicle A/C systems with electric compressors.
Note: Initial leak rate is the rate of refrigerant leakage from a newly manufactured A/C system in grams of refrigerant per year. The Executive Officer may allow a manufacturer to use an updated version of SAE J2727 or an alternate method if s/he determines that the updated SAE J2727 or the alternate method provides more accurate estimates of the initial leak rate of A/C systems than the February 2012 version of SAE J2727 does.

2. Low-GWP vapor compression systems

For A/C systems that use a refrigerant having a GWP of 150 or less, the A/C Direct Emissions Credit shall be calculated using the following formula:
A/C Direct Credit = Low GWP Credit - High Leak Penalty
Where:

$$Low\ GWP\ Credit = Max\ Low\ GWP\ Credit \times (1 - \frac{GWP}{1{,}430})$$

and

$$High\ Leak\ Penalty$$

$$= \begin{cases} Max\ High\ Leak\ Penalty, & if\ SAE\ LR > Avg\ LR; \\ Max\ High\ Leak\ Penalty \times \dfrac{SAE\ LR - Min\ LR}{Avg\ LR - Min\ LR}, & if\ Min\ LR < SAE\ LR \leq Avg\ LR; \\ 0, & if\ SAE\ LR \leq Min\ LR. \end{cases}$$

Where:
Max Low GWP Credit = 13.8 gCO_2e/mi for passenger cars;

Max Low GWP Credit = 17.2 gCO_2e/mi for light-duty trucks and medium-duty passenger vehicles;
GWP = the global warming potential of the refrigerant over a 100-year horizon, as specified in section (a)(6)(F);
Max High Leak Penalty = 1.8 gCO_2e/mi for passenger cars;
Max High Leak Penalty = 2.1 gCO_2e/mi for light-duty trucks and medium-duty passenger vehicles;
Avg LR = 13.1 g/yr for passenger cars;
Avg LR = 16.6 g/yr for light-duty trucks and medium-duty passenger vehicles;
and where:
SAE LR = initial leak rate evaluated using SAE International's Surface Vehicle Standard SAE J2727 (Revised February 2012);
Min LR = 8.3 g/yr for passenger cars;
Min LR = 10.4 g/yr for light-duty trucks and medium-duty passenger vehicles.
Note: Initial leak rate is the rate of refrigerant leakage from a newly manufactured A/C system in grams of refrigerant per year. The Executive Officer may allow a manufacturer to use an updated version of SAE J2727 or an alternate applicable test method if s/he finds the update or the alternate method provides more accurate estimates of the initial leak rate of A/C systems than the February 2012 version of SAE J2727 does.

3. Other A/C systems

For an A/C system that uses a technology other than vapor compression cycles, an A/C Direct Emissions Credit may be approved by the Executive Officer. The amount of credit requested must be based on demonstration of the reduction of A/C direct emissions of the technology using an engineering evaluation that includes verifiable laboratory test data, and cannot exceed 13.8 gCO_2e/mi for passenger cars and 17.2 gCO_2e/mi for light-duty trucks and medium-duty passenger vehicles.

(D) The total leakage reduction credits generated by the air conditioning system shall be calculated separately for passenger cars, and for light-duty trucks and medium-duty passenger vehicles, according to the following formula:

Total Credits (g/mi) = A/C Direct Credit x Production
Where:
A/C Direct Credit is calculated as specified in subsection (a)(6)(C).

Production = The total number of passenger cars or light-duty trucks plus medium-duty passenger vehicles, whichever is applicable, produced and delivered for sale in California, with the air conditioning system to which the *A/D Direct Credit* value from subsection (a)(6)(C) applies.

(E) The results of subsection (a)(6)(D), rounded to the nearest whole gram per mile, shall be included in the manufacturer's credit/debit totals calculated in subsection (b)(1)(B).

(F) The following values for refrigerant global warming potential (GWP), or alternative values as determined by the Executive Officer, shall be used in the calculations of this subsection (a)(6). The Executive Officer shall determine values for refrigerants not included in this subsection (a)(6)(F) upon request by a manufacturer, based on findings by the Intergovernmental Panel on Climate Change (IPCC) or from other applicable research studies.

Refrigerant	*GWP*
HFC-134a	1,430
HFC-152a	124
HFO-1234yf	4
CO_2	1

(7) Credits for Improving Air Conditioning System Efficiency. Manufacturers may generate CO_2 credits by implementing specific air conditioning system technologies designed to reduce air conditioning-related CO_2 emissions over the useful life of their passenger cars, light-duty trucks, and/or medium-duty passenger vehicles. Credits shall be calculated according to this subsection (a)(7) for each air conditioning system that the manufacturer is using to generate CO_2 credits. The eligibility requirements specified in subsection (a)(7)(E) must be met before an air conditioning system is allowed to generate credits.

(A) Air conditioning efficiency credits are available for the following technologies in the gram per mile amounts indicated for each vehicle category in the following table:

Air Conditioning Technology	*Passenger Cars (g/mi)*	*Light-Duty Trucks and Medium-Duty Passenger Vehicles (g/mi)*
Reduced reheat, with externally-controlled, variable-displacement compressor (*e.g.* a compressor that controls displacement based on temperature setpoint and/or cooling demand of the air conditioning system control settings inside the passenger compartment).	1.5	2.2
Reduced reheat, with externally-controlled, fixed-displacement or pneumatic variable displacement compressor (*e.g.* a compressor that controls displacement based on conditions within, or internal to, the air conditioning system, such as head pressure, suction pressure, or evaporator outlet temperature).	1.0	1.4
Default to recirculated air with closed-loop control of the air supply (sensor feedback to control interior air quality) whenever the ambient temperature is 75 °F or higher: Air conditioning systems that operated with closed-loop control of the air supply at different temperatures may receive credits by submitting an engineering analysis to the Administrator for approval.	1.5	2.2
Default to recirculated air with open-loop control air supply (no sensor feedback) whenever the ambient temperature is 75 °F or higher. Air conditioning systems that operate with open-loop control of the air supply at different temperatures may receive credits by submitting an engineering analysis to the Administrator for approval.	1.0	1.4
Blower motor controls which limit wasted electrical energy (*e.g.* pulse width modulated power controller).	0.8	1.1
Internal heat exchanger (*e.g.* a device that transfers heat from the high-pressure, liquid-phase refrigerant entering the evaporator to the low-pressure, gas-phase refrigerant exiting the evaporator).	1.0	1.4
Improved condensers and/or evaporators with system analysis on the component(s) indicating a coefficient of performance improvement for the system of greater than 10% when compared to previous industry standard designs).	1.0	1.4

Oil separator. The manufacturer must submit an engineering analysis demonstrating the increased improvement of the system relative to the baseline design, where the baseline component for comparison is the version which a manufacturer most recently had in production on the same vehicle design or in a similar or related vehicle model. The characteristics of the baseline component shall be compared to the new component to demonstrate the improvement.	0.5	0.7

(B) Air conditioning efficiency credits are determined on an air conditioning system basis. For each air conditioning system that is eligible for a credit based on the use of one or more of the items listed in subsection (a)(7)(A), the total credit value is the sum of the gram per mile values listed in subsection (a)(7)(A) for each item that applies to the air conditioning system. However, the total credit value for an air conditioning system may not be greater than 5.0 grams per mile for any passenger car or 7.2 grams per mile for any light-duty truck or medium-duty passenger vehicle.

(C) The total efficiency credits generated by an air conditioning system shall be calculated separately for passenger cars and for light-duty trucks plus medium-duty passenger vehicles according to the following formula:

Total Credits (g/mi) = Credit x Production
Where:
Credit = the CO_2 efficiency credit value in grams per mile determined in subsection (a)(7)(B) or (a)(7)(E), whichever is applicable.
Production = The total number of passenger cars or light-duty trucks plus medium-duty passenger vehicles, whichever is applicable, produced and delivered for sale in California, with the air conditioning system to which to the efficiency credit value from subsection (a)(7)(B) applies.

(D) The results of subsection (a)(7)(C), rounded to the nearest whole gram per mile, shall be included in the manufacturer's credit/debit totals calculated in subsection (b)(1)(B).

(E) For the purposes of this subsection (a)(7)(E), the AC17 Test Procedure shall mean the AC17 Air Conditioning Efficiency Test Procedure set forth in the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles."

1. For each air conditioning system selected by the manufacturer to generate air conditioning efficiency credits, the manufacturer shall perform the AC17 Test Procedure.

2. Using good engineering judgment, the manufacturer must select the vehicle configuration to be tested that is expected to result in the greatest increased CO_2 emissions as a result of the operation of the air conditioning system for which efficiency credits are being sought. If the air conditioning system is being installed in passenger cars, light-duty trucks, and medium-duty passenger vehicles, a separate determination of the quantity of credits for passenger cars and for light-duty trucks and medium-duty passenger vehicles must be made, but only one test vehicle is required to represent the air conditioning system, provided it represents the worst-case impact of the system on CO_2 emissions.

3. For each air conditioning system selected by the manufacturer to generate air conditioning efficiency credits, the manufacturer shall perform the AC17 Test Procedure according to the following requirements. Each air conditioning system shall be tested as follows:

   a. Perform the AC17 test on a vehicle that incorporates the air conditioning system with the credit-generating technologies.

   b. Perform the AC17 test on a vehicle which does not incorporate the credit-generating technologies. The tested vehicle must be similar to the vehicle tested under subsection (a)(7)(E)(3)a.

c. Subtract the CO_2 emissions determined from testing under subsection (a)(7)(E)(3)a. from the CO_2 emissions determined from testing under subsection (a)(7)(E)(3)b. and round to the nearest 0.1 grams/mile. If the result is less than or equal to zero, the air conditioning system is not eligible to generate credits. If the result is greater than or equal to the total of the gram per mile credits determined under subsection (a)(7)(B), then the air conditioning system is eligible to generate the maximum allowable value determined under subsection (a)(7)(B). If the result is greater than zero but less than the total of the gram per mile credits determined under subsection (a)(7)(B), then the air conditioning system is eligible to generate credits in the amount determined by subtracting the CO_2 emissions determined from testing under subsection (a)(7)(E)(3)a. from the CO_2 emissions determined from testing under subsection (a)(7)(E)(3)b. and rounding to the nearest 0.1 grams/mile.

4. For the first model year for which an air conditioning system is expected to generate credits, the manufacturer must select for testing the highest-selling subconfiguration within each vehicle platform that uses the air conditioning system. Credits may continue to be generated by the air conditioning system installed in a vehicle platform provided that:

   a. The air conditioning system components and/or control strategies do not change in any way that could be expected to cause a change in its efficiency;

   b. The vehicle platform does not change in design such that the changes could be expected to cause a change in the efficiency of the air conditioning system; and

   c. The manufacturer continues to test at least one sub-configuration within each platform using the air conditioning system, in each model year, until all sub-configurations within each platform have been tested.

11/6/26
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5. Each air conditioning system must be tested and must meet the testing criteria in order to be allowed to generate credits. Using good engineering judgment, in the first model year for which an air conditioning system is expected to generate credits, the manufacturer must select for testing the highest-selling subconfiguration within each vehicle platform using the air conditioning system. Credits may continue to be generated by an air conditioning system in subsequent model years if the manufacturer continues to test at least one sub-configuration within each platform on annually, as long as the air conditioning system and vehicle platform do not change substantially.

(8) Off-Cycle Credits. Manufacturers may generate credits for CO_2-reducing technologies where the CO_2 reduction benefit of the technology is not adequately captured on the FTP and/or the HWFET. These technologies must have a measurable, demonstrable, and verifiable real-world CO_2 reduction that occurs outside the conditions of the FTP and the HWFET. These optional credits are referred to as "off-cycle" credits. Off-cycle technologies used to generate emission credits are considered emission-related components subject to applicable requirements, and must be demonstrated to be effective for the full useful life of the vehicle. Unless the manufacturer demonstrates that the technology is not subject to in-use deterioration, the manufacturer must account for the deterioration in their analysis. The manufacturer must use one of the three options specified in this subsection (a)(8) to determine the CO_2 gram per mile credit applicable to an off-cycle technology. The manufacturer should notify the Executive Officer in its pre-model year report of its intention to generate any credits under this subsection (a)(8).

(A) Credit available for certain off-cycle technologies.

1. The manufacturer may generate a CO_2 gram/mile credit for certain technologies as specified in the following table, provided that each technology is applied to the minimum percentage of the manufacturer's total U.S. production of passenger cars, light-duty trucks, and medium-duty passenger vehicles specified in the table in each model year for which credit is claimed. Technology definitions are in subsection (e).

Off-Cycle Technology	*Passenger Cars (g/mi)*	*Light-Duty Trucks and Medium-Duty Passenger Vehicles (g/mi)*	*Minimum Total Percent of U.S. Production*
Active aerodynamics	0.6	1.0	10
High efficiency exterior lighting	1.1	1.1	10
Engine heat recovery	0.7 per 100W of capacity	0.7 per 100W of capacity	10
Engine start-stop (idle-off)	2.9	4.5	10
Active transmission warm-up	1.8	1.8	10
Active engine warm-up	1.8	1.8	10
Electric heater circulation pump	1.0	1.5	n/a
Solar roof panels	3.0	3.0	n/a
Thermal control	≤3.0	≤4.3	n/a

a. Credits may also be accrued for thermal control technologies as defined in subsection (e) in the amounts shown in the following table:

Thermal Control Technology	*Credit Value: Passenger Cars (g/mi)*	*Credit Value: Light-Duty Trucks and Medium- Duty Passenger Vehicles (g/mi)*
Glass or glazing	≤2.9	≤3.9
Active seat ventilation	1.0	1.3
Solar reflective paint	0.4	0.5
Passive cabin ventilation	1.7	2.3
Active cabin ventilation	2.1	2.8

b. The maximum credit allowed for thermal control technologies is limited to 3.0 g/mi for passenger cars and to 4.3 g/mi for light-duty trucks and medium-duty passenger vehicles. The maximum credit allowed for glass or glazing is limited to 2.9 g/mi for passenger cars and to 3.9 g/mi for light-duty trucks and medium-duty passenger vehicles.

c. Glass or glazing credits are calculated using the following equation:

$$Credit = \left[Z \times \sum_{i=1}^{n} \frac{T_i \times G_i}{G} \right]$$

Where:
Credit = the total glass or glazing credits, in grams per mile, for a vehicle, which may not exceed 3.0 g/mi for passenger cars or 4.3 g/mi for light-duty trucks and medium-duty passenger vehicles;
Z = 0.3 for passenger cars and 0.4 for light-duty trucks and medium-duty passenger vehicles;
G_i = the measured glass area of window i, in square meters and rounded to the nearest tenth;
G = the total glass area of the vehicle, in square meters and rounded to the nearest tenth;
T_i = the estimated temperature reduction for the glass area of window i, determined using the following formula:
$T_i = 0.3987 \times (Tts_{base} - Tts_{new})$
Where:
Tts_{new} = the total solar transmittance of the glass, measured according to ISO 13837:2008, "Safety glazing materials -- Method for determination of solar transmittance" (incorporated by reference, herein).
Tts_{base} = 62 for the windshield, side-front, side-rear, rear-quarter, and backlite locations, and 40 for rooflite locations.

2. The maximum allowable decrease in the manufacturer's combined passenger car and light-duty truck plus medium-duty passenger vehicle fleet average CO_2 emissions attributable to use of the default credit values in subsection (a)(8)(A)1. is 10 grams per mile. If the total of the CO_2 g/mi credit values from the table in subsection (a)(8)(A)1. does not exceed 10 g/mi for any passenger automobile or light truck in a manufacturer's fleet, then the total off-cycle credits may be calculated according to subsection (a)(8)(D). If the total of the CO_2 g/mi credit values from the table in subsection (a)(8)(A)1. exceeds 10 g/mi for any passenger car, light-duty truck, or medium-duty passenger vehicle in a manufacturer's fleet, then the gram per mile decrease for the combined passenger car and light-duty truck plus medium-duty passenger vehicle fleet must be determined according to subsection (a)(8)(A)2.a. to determine whether the 10 g/mi limitation has been exceeded.

a. Determine the gram per mile decrease for the combined passenger car and light-duty truck plus medium-duty passenger vehicle fleet using the following formula:

$$Decrease = \frac{Credits \times 1{,}000{,}000}{[(Prod_c \times 195{,}264) + (Prod_T \times 225{,}865)\ ]}$$

Where:
Credits = The total of passenger car and light-duty truck plus medium-duty passenger vehicles credits, in Megagrams, determined according to subsection (a)(8)(D) and limited to those credits accrued by using the default gram per mile values in subsection (a)(8)(A)1.
$Prod_C$ = The number of passenger cars produced by the manufacturer and delivered for sale in the U.S.
$Prod_T$ = The number of light-duty trucks and medium-duty passenger vehicles produced by the manufacturer and delivered for sale in the U.S.

b. If the value determined in subsection (a)(8)(A)2.a. is greater than 10 grams per mile, the total credits, in Megagrams, that may be accrued by a manufacturer using the default gram per mile values in subsection (a)(8)(A)1. shall be determined using the following formula:

$$Credit\ (Megagrams) = \frac{[10 \times ((Prod_c \times 195{,}264) + (Prod_T \times 225{,}865))]}{1{,}000{,}000}$$

Where:
$Prod_C$ = The number of passenger cars produced by the manufacturer and delivered for sale in the U.S.
$Prod_T$ = The number of light-duty trucks and medium-duty passenger vehicles produced by the manufacturer and delivered for sale in the U.S.

c. If the value determined in subsection (a)(8)(A)2.a. is not greater than 10 grams per mile, then the credits that may be accrued by a manufacturer using the default gram per mile values in subsection (a)(8)(A)1. do not exceed the allowable limit, and total credits may be determined for each category of vehicles according to subsection (a)(8)(D).

d. If the value determined in subsection (a)(8)(A)2.a. is greater than 10 grams per mile, then the combined passenger car and light-duty truck plus medium-duty passenger vehicle credits, in Megagrams, that may be accrued using the calculations in subsection (a)(8)(D) must not exceed the value determined in subsection (a)(8)(A)2.b. This limitation should generally be done by reducing the amount of credits attributable to the vehicle category that caused the limit to be exceeded such that the total value does not exceed the value determined in subsection (a)(8)(A)2.b.

3. In lieu of using the default gram per mile values specified in subsection (a)(8)(A)1. for specific technologies, a manufacturer may determine an alternative value for any of the specified technologies. An alternative value must be determined using one of the methods specified in subsection (a)(8)(B) or subsection (a)(8)(C).

(B) Technology demonstration using EPA 5-cycle methodology. To demonstrate an off-cycle technology and to determine a CO_2 credit using the EPA 5-cycle methodology, the manufacturer shall determine the off-cycle city/highway combined carbon-related exhaust emissions benefit by using the EPA 5-cycle methodology described in 40 CFR Part 600. Testing shall be performed on a representative vehicle, selected using good engineering judgment, for each model type for which the credit is being demonstrated. The emission benefit of a technology is determined by testing both with and without the off-cycle technology operating. Multiple off-cycle technologies may be demonstrated on a test vehicle. The manufacturer shall conduct the following steps and submit all test data to the Executive Officer.

1. Testing without the off-cycle technology installed and/or operating. Determine carbon-related exhaust emissions over the FTP, the HWFET, the US06, the SC03, and the cold temperature FTP test procedures according to the test procedure provisions specified in 40 CFR part 600 subpart B and using the calculation procedures specified in § 600.113-08 of this chapter. Run each of these tests a minimum of three times without the off-cycle technology installed and operating and average the per phase (bag) results for each test procedure. Calculate the 5-cycle weighted city/highway combined carbon-related exhaust emissions from the averaged per phase results, where the 5-cycle city value is weighted 55% and the 5-cycle highway value is weighted 45%. The resulting combined city/highway value is the baseline 5-cycle carbon-related exhaust emission value for the vehicle.

2. Testing with the off-cycle technology installed and/or operating. Determine carbon-related exhaust emissions over the US06, the SC03, and the cold temperature FTP test procedures according to the test procedure provisions specified in 40 CFR part 600 subpart B and using the calculation procedures specified in 40 CFR § 600.113-08. Run each of these tests a minimum of three times with the off-cycle technology installed and operating and average the per phase (bag) results for each test procedure. Calculate the 5-cycle weighted city/highway combined carbon-related exhaust emissions from the averaged per phase results, where the 5-cycle city value is weighted 55% and the 5-cycle highway value is weighted 45%. Use the averaged per phase results for the FTP and HWFET determined in subsection (a)(8)(B)1. for operation without the off-cycle technology in this calculation. The resulting combined city/highway value is the 5-cycle carbon-related exhaust emission value showing the off-cycle benefit of the technology but excluding any benefit of the technology on the FTP and HWFET.

3. Subtract the combined city/highway value determined in subsection (a)(8)(B)1. from the value determined in subsection (a)(8)(B)2. The result is the off-cycle benefit of the technology or technologies being evaluated. If this benefit is greater than or equal to three percent of the value determined in subsection (a)(8)(B)1. then the manufacturer may use this value, rounded to the nearest tenth of a gram per mile, to determine credits under subsection (a)(8)(C).

4. If the value calculated in subsection (a)(8)(B)3. is less than two percent of the value determined in subsection (a)(8)(B)1., then the manufacturer must repeat the testing required under subsections (a)(8)(B)1. and (a)(8)(B)2., except instead of running each test three times they shall run each test two additional times. The off-cycle benefit of the technology or technologies being evaluated shall be calculated as in subsection (a)(8)(B)3. using all the tests conducted under subsections (a)(8)(B)1., (a)(8)(B)2., and (a)(8)(B)4. If the value calculated in subsection (a)(8)(B)3. is less than two percent of the value determined in subsection (a)(8)(B)1., then the manufacturer must verify the emission reduction potential of the off-cycle technology or technologies using the EPA Vehicle Simulation Tool, and if the results support a credit value that is less than two percent of the value determined in subsection (a)(8)(B)1. then the manufacturer may use the off-cycle benefit of the technology or technologies calculated as in subsection (a)(8)(B)3. using all the tests conducted under subsections (a)(8)(B)1., (a)(8)(B)2., and (a)(8)(B)4., rounded to the nearest tenth of a gram per mile, to determine credits under subsection (a)(8)(C).

(C) Review and approval process for off-cycle credits.

1. Initial steps required.

   a. A manufacturer requesting off-cycle credits under the provisions of subsection (a)(8)(B) must conduct the testing and/or simulation described in that paragraph.

b. A manufacturer requesting off-cycle credits under subsection (a)(8)(B) must conduct testing and/or prepare engineering analyses that demonstrate the in-use durability of the technology for the full useful life of the vehicle.

2. Data and information requirements. The manufacturer seeking off-cycle credits must submit an application for off-cycle credits determined under subsection (a)(8)(B). The application must contain the following:

   a. A detailed description of the off-cycle technology and how it functions to reduce CO_2 emissions under conditions not represented on the FTP and HWFET.

   b. A list of the vehicle model(s) which will be equipped with the technology.

   c. A detailed description of the test vehicles selected and an engineering analysis that supports the selection of those vehicles for testing.

   d. All testing and/or simulation data required under subsection (a)(8)(B), as applicable, plus any other data the manufacturer has considered in the analysis.

   e. An estimate of the off-cycle benefit by vehicle model and the fleet-wide benefit based on projected sales of vehicle models equipped with the technology.

   f. An engineering analysis and/or component durability testing data or whole vehicle testing data demonstrating the in-use durability of the off-cycle technology components.

3. Review of the off-cycle credit application. Upon receipt of an application from a manufacturer, the Executive Officer will do the following:

   a. Review the application for completeness and notify the manufacturer within 30 days if additional information is required.

   b. Review the data and information provided in the application to determine if the application supports the level of credits estimated by the manufacturer.

4. Decision on off-cycle application.

The Executive Officer will notify the manufacturer in writing of its decision to approve or deny the application within 60 days of receiving a complete application, and if denied, the Executive Officer will provide the reasons for the denial.

(D) Calculation of total off-cycle credits. Total off-cycle credits in grams per mile of CO_2 (rounded to the nearest tenth of a gram per mile) shall be calculated separately for passenger cars and light-duty trucks plus medium-duty passenger vehicles according to the following formula:

Total Credits (g/mi) = Credit x Production
Where:
Credit = the credit value in grams per mile determined in subsection (a)(8)(A) or subsection (a)(8)(B).
Production = The total number of passenger cars or light-duty trucks plus medium-duty passenger vehicles, whichever is applicable, produced and delivered for sale in California, produced with the off-cycle technology to which to the credit value determined in subsection (a)(8)(A) or subsection (a)(8)(B) applies.

(9) Credits for certain full-size pickup trucks.

Full-size pickup trucks may be eligible for additional credits based on the implementation of hybrid technologies or on exhaust emission performance, as described in this subsection (a)(9). Credits may be generated under either subsection (a)(9)(A) or subsection (a)(9)(B) for a qualifying pickup truck, but not both.

(A) Credits for implementation of gasoline-electric hybrid technology. Full-size pickup trucks that implement hybrid gasoline-electric technologies may be eligible for an additional credit under this subsection (a)(9)(A). Pickup trucks using the credits under this subsection (a)(9)(A) may not use the credits described in subsection (a)(9)(B).

1. Full-size pickup trucks that are mild hybrid gasoline-electric vehicles and that are produced in the 2017 through 2021 model years are eligible for a credit of 10 grams/mile. To receive this credit, the manufacturer must produce a quantity of mild hybrid full-size pickup trucks such that the proportion of production of such vehicles, when compared to the manufacturer's total production of full-size pickup trucks, is not less than the amount specified in the table below for each model year.

Model year	*Required minimum percent of full-size pickup trucks*
2017	30%
2018	40%
2019	55%
2020	70%
2021	80%

2. Full-size pickup trucks that are strong hybrid gasoline-electric vehicles and that are produced in the 2017 through 2025 model years are eligible for a credit of 20 grams/mile. To receive this credit, the manufacturer must produce a quantity of strong hybrid full-size pickup trucks such that the proportion of production of such vehicles, when compared to the manufacturer's total production of full-size pickup trucks, is not less than 10 percent for each model year.

(B) Credits for emission reduction performance. 2017 through 2021 model year full-size pickup trucks that achieve carbon-related exhaust emission values below the applicable target value determined in subsection (a)(1)(B) may be eligible for an additional credit. Pickup trucks using the credits under this subsection (a)(9)(B) may not use the credits described in subsection (a)(9)(A).

1. Full-size pickup trucks that achieve carbon-related exhaust emissions less than or equal to the applicable target value determined in subsection (a)(1)(B) multiplied by 0.85 (rounded to the nearest gram per mile) and greater than the applicable target value determined in subsection (a)(1)(B) multiplied by 0.80 (rounded to the nearest gram per mile) in a model year are eligible for a credit of 10 grams/mile. A pickup truck that qualifies for this credit in a model year may claim this credit for subsequent model years through the 2021 model year if the carbon-related exhaust emissions of that pickup truck do not increase relative to the emissions in the model year in which the pickup truck qualified for the credit. To qualify for this credit in each model year, the manufacturer must produce a quantity of full-size pickup trucks that meet the emission requirements of this subsection (a)(9)(B)1. such that the proportion of production of such vehicles, when compared to the manufacturer's total production of full-size pickup trucks, is not less than the amount specified in the table below for each model year.

Model year	*Required minimum percent of full-size pickup trucks*
2017	15%
2018	20%
2019	28%
2020	35%
2021	40%

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2. Full-size pickup trucks that achieve carbon-related exhaust emissions less than or equal to the applicable target value determined in subsection (a)(1)(B) multiplied by 0.80 (rounded to the nearest gram per mile) in a model year are eligible for a credit of 20 grams/mile. A pickup truck that qualifies for this credit in a model year may claim this credit for a maximum of five subsequent model years if the carbon-related exhaust emissions of that pickup truck do not increase relative to the emissions in the model year in which the pickup truck first qualified for the credit. This credit may not be claimed in any model year after 2025. To qualify for this credit, the manufacturer must produce a quantity of full-size pickup trucks that meet the emission requirements of subsection (a)(9)(B)1. such that the proportion of production of such vehicles, when compared to the manufacturer's total production of full-size pickup trucks, is not less than 10 percent in each model year.

(C) Calculation of total full-size pickup truck credits. Total credits in grams per mile of CO_2 (rounded to the nearest whole gram per mile) shall be calculated for qualifying full-size pickup trucks according to the following formula:

Total Credits (g/mi) = (10 x $Production_{10}$) + (20 x $Production_{20}$)
Where:
$Production_{10}$ = The total number of full-size pickup trucks produced and delivered for sale in California with a credit value of 10 grams per mile from subsection (a)(9)(A) and subsection (a)(9)(B).
$Production_{20}$ = The total number of full-size pickup trucks produced and delivered for sale in California with a credit value of 20 grams per mile from subsection (a)(9)(A) and subsection (a)(9)(B).

(10) Greenhouse Gas In-Use Compliance Standards. The in-use exhaust CO_2 emission standard shall be the combined city/highway exhaust emission value calculated according to the provisions of subsection (a)(5)(A) for the vehicle model type and footprint value multiplied by 1.1 and rounded to the nearest whole gram per mile. For vehicles that are capable of operating on multiple fuels, a separate value shall be determined for each fuel that the vehicle is capable of operating on. These standards apply to in-use testing performed by the manufacturer pursuant to 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."

(b) Calculation of Greenhouse Gas Credits/Debits. Credits that are earned as part of the 2012 through 2016 MY National greenhouse gas program shall not be applicable to California's greenhouse gas program. Debits that are earned as part of the 2012 through 2016 MY National greenhouse gas program shall not be applicable to California's greenhouse gas program.

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

(A) A manufacturer that achieves fleet average CO_2 values lower than the fleet average CO_2 requirement for the corresponding model year shall receive credits for each model year in units of g/mi. A manufacturer that achieves fleet average CO_2 values higher than the fleet average CO_2 requirement for the corresponding model year shall receive debits for each model year in units of g/mi. Manufacturers must calculate greenhouse gas credits and greenhouse gas debits separately for passenger cars and for combined light-duty trucks and medium-duty passenger vehicles as follows:

CO_2 Credits or Debits = (CO_2 Standard - Manufacturer's Fleet Average CO_2 Value) x (Total No. of Vehicles Produced and Delivered for Sale in California, Including ZEVs and HEVs).
Where:
CO_2 Standard = the applicable standard for the model year as determined in subsection (a)(1)(C);
Manufacturer's Fleet Average CO_2 Value = average calculated according to subsection (a)(5);

(B) A manufacturer's total Greenhouse Gas credits or debits generated in a model year shall be the sum of its CO_2 credits or debits and any of the following credits or debits, if applicable. The manufacturer shall calculate, maintain, and report Greenhouse Gas credits or debits separately for its passenger car fleet and for its light-duty truck plus medium-duty passenger vehicle fleet.

1. Air conditioning leakage credits earned according to the provisions of subsection (a)(6);

2. Air conditioning efficiency credits earned according to the provisions of subsection (a)(7);

3. Off-cycle technology credits earned according to the provisions of subsection (a)(8).

4. CO_2-equivalent debits earned according to the provisions of subsection (a)(2)(D).

(2) A manufacturer with 2017 and subsequent model year fleet average Greenhouse Gas values greater than the fleet average CO_2 standard applicable 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 2017 and subsequent model years, the total g/mi Greenhouse Gas credits or debits earned for passenger cars and for light-duty trucks and medium-duty passenger vehicles 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) Procedure for Offsetting Greenhouse Gas Debits.

(A) A manufacturer shall equalize Greenhouse Gas emission debits by earning g/mi Greenhouse Gas emission credits in an amount equal to the g/mi Greenhouse Gas debits, or by submitting a commensurate amount of g/mi Greenhouse Gas credits to the Executive Officer that were earned previously or acquired from another manufacturer. A manufacturer shall equalize combined Greenhouse Gas debits for passenger cars, light-duty trucks, and medium-duty passenger vehicles within five model years after they are earned. If emission debits are not equalized within the specified time period, the manufacturer shall be subject to the Health and Safety Code section 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 a manufacturer demonstrating compliance under Option 2 in subsection (a)(5)(D), the emission debits that are subject to a civil penalty under Health and Safety Code section 43211 shall be calculated separately for California, the District of Columbia, and each individual state that is included in the fleet average greenhouse gas requirements in subsection (a)(1). These emission debits shall be calculated for each individual state using the formula in subsections (b)(1) and (b)(2), except that the "Total No. of Vehicles Produced and Delivered for Sale in California, including ZEVs and HEVs" shall be calculated separately for the District of Columbia and each individual state.

For the purposes of Health and Safety Code section 43211, the number of passenger cars not meeting the state board's emission standards shall be determined by dividing the total amount of g/mi Greenhouse Gas emission debits for the model year calculated for California by the g/mi Greenhouse Gas fleet average requirement for passenger car applicable for the model year in which the debits were first incurred. For the purposes of Health and Safety Code section 43211, the number of light-duty trucks and medium-duty passenger vehicles not meeting the state board's emission standards shall be determined by dividing the total amount of g/mi Greenhouse Gas emission debits for the model year calculated for California by the g/mi Greenhouse Gas fleet average requirement for light-duty trucks and medium-duty passenger vehicles, applicable for the model year in which the debits were first incurred.

(B) Greenhouse Gas emission credits earned in the 2017 and subsequent model years shall retain full value through the fifth model year after they are earned, and will have no value if not used by the beginning of the sixth model year after being earned.

(4) Use of Greenhouse Gas Emission Credits to Offset a Manufacturer's ZEV Obligations.

(A) For a given model year, a manufacturer that has Greenhouse Gas credits remaining after equalizing all of its Greenhouse Gas debits may use those Greenhouse Gas credits to comply with its ZEV obligations for that model year, in accordance with the provisions set forth in the "California Exhaust Emission Standards and Test Procedures for 2018 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 1962.2.

(B) Any Greenhouse Gas credits used by a manufacturer to comply with its ZEV obligations shall retain no value for the purposes of complying with this section 1961.3.1.

(5) Credits and debits that are earned as part of the 2012 through 2016 MY National Greenhouse Gas Program, shall have no value for the purpose of complying with this section 1961.3.1.

(c) Optional Compliance with the 2017 through 2025 MY National Greenhouse Gas Program.

For the 2017 through 2025 model years, a manufacturer may elect to demonstrate compliance with this section 1961.3.1 by demonstrating compliance with the 2017 through 2025 MY National greenhouse gas program as follows:

(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 must comply with 1961.3.1 (a) and (b);

(2) The manufacturer must submit to ARB all data that it submits to EPA in accordance with the reporting requirements as required under 40 CFR § 86.1865-12, incorporated by reference in and amended by 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," for demonstrating compliance with the 2017 through 2025 MY National greenhouse gas program and the EPA determination of compliance. All such data 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;

(3) The manufacturer must provide to the Executive Officer separate values for the number of vehicles in each model type and footprint value 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), the applicable fleet average CO_2 standards for each of these model types and footprint values, the calculated fleet average CO_2 value for each of these model types and footprint values, and all values used in calculating the fleet average CO_2 values.

(d) Test Procedures. The certification requirements and test procedures for determining compliance with the emission standards in this section are set forth in the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles,", incorporated by reference in section 1961.2. In the case of hybrid electric vehicles, the certification requirements and test procedures for determining compliance with the emission standards in this section are set forth in the "California Exhaust Emission Standards and Test Procedures for 2009 through 2017 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, or the "California Exhaust Emission Standards and Test Procedures for 2018 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 1962.2, as applicable.

(e) Abbreviations. The following abbreviations are used in this section:

"CFR" means Code of Federal Regulations.
"CH_4" means methane.
"CO_2" means carbon dioxide.
"FTP" means Federal Test Procedure.
"GHG" means greenhouse gas.
"g/mi" means grams per mile.
"GVW" means gross vehicle weight.
"GVWR" means gross vehicle weight rating.
"GWP" means the global warming potential.
"HEV" means hybrid-electric vehicle.
"HWFET" means Highway Fuel Economy Test (HWFET; 40 CFR 600 Subpart B).
"LDT" means light-duty truck.
"LVW" means loaded vehicle weight.
"MDPV" means medium-duty passenger vehicle.
"mg/mi" means milligrams per mile.
"MY" means model year.
"NHTSA" means National Highway Traffic Safety Administration.
"N_2O" means nitrous oxide.
"ZEV" means zero-emission vehicle.

(f) Definitions Specific to this Section. The following definitions apply to this section 1961.3.1:

(1) "A/C Direct Emissions" means any refrigerant released from a motor vehicle's air conditioning system.

(2) "Active Aerodynamic Improvements" means technologies that are activated only at certain speeds to improve aerodynamic efficiency by a minimum of three percent, while preserving other vehicle attributes or functions.

(3) "Active Cabin Ventilation" means devices that mechanically move heated air from the cabin interior to the exterior of the vehicle.

(4) "Active Transmission Warmup" means a system that uses waste heat from the exhaust system to warm the transmission fluid to an operating temperature range quickly using a heat exchanger in the exhaust system, increasing the overall transmission efficiency by reducing parasitic losses associated with the transmission fluid, such as losses related to friction and fluid viscosity.

(5) "Active Engine Warmup" means a system using waste heat from the exhaust system to warm up targeted parts of the engine so that it reduces engine friction losses and enables the closed-loop fuel control to activate more quickly. It allows a faster transition from cold operation to warm operation, decreasing CO_2 emissions.

(6) "Active Seat Ventilation" means a device that draws air from the seating surface which is in contact with the occupant and exhausts it to a location away from the seat.

(7) "Blower motor controls which limit waste energy" means a method of controlling fan and blower speeds that does not use resistive elements to decrease the voltage supplied to the motor.

(8) "Default to recirculated air mode" means that the default position of the mechanism which controls the source of air supplied to the air conditioning system shall change from outside air to recirculated air when the operator or the automatic climate control system has engaged the air conditioning system (i.e., evaporator is removing heat), except under those conditions where dehumidification is required for visibility (i.e., defogger mode). In vehicles equipped with interior air quality sensors (e.g., humidity sensor, or carbon dioxide sensor), the controls may determine proper blend of air supply sources to maintain freshness of the cabin air and prevent fogging of windows while continuing to maximize the use of recirculated air. At any time, the vehicle operator may manually select the non-recirculated air setting during vehicle operation but the system must default to recirculated air mode on subsequent vehicle operations (i.e., next vehicle start). The climate control system may delay switching to recirculation mode until the interior air temperature is less than the outside air temperature, at which time the system must switch to recirculated air mode.

(9) "Electric Heater Circulation Pump" means a pump system installed in a stop-start equipped vehicle or in a hybrid electric vehicle or plug-in hybrid electric vehicle that continues to circulate hot coolant through the heater core when the engine is stopped during a stop-start event. This system must be calibrated to keep the engine off for 1 minute or more when the external ambient temperature is 30 deg F.

(10) "Emergency Vehicle" means a motor vehicle manufactured primarily for use as an ambulance or combination ambulance-hearse or for use by the United States Government or a State or local government for law enforcement.

(11) "Engine Heat Recovery" means a system that captures heat that would otherwise be lost through the exhaust system or through the radiator and converting that heat to electrical energy that is used to meet the electrical requirements of the vehicle. Such a system must have a capacity of at least 100W to achieve 0.7 g/mi of credit. Every additional 100W of capacity will result in an additional 0.7 g/mi of credit.

(12) "Engine Start-Stop" means a technology which enables a vehicle to automatically turn off the engine when the vehicle comes to a rest and restart the engine when the driver applies pressure to the accelerator or releases the brake.

(13) "EPA Vehicle Simulation Tool" means the "EPA Vehicle Simulation Tool" as incorporated by reference in 40 CFR § 86.1 in the Notice of Proposed Rulemaking for EPA's 2017 and subsequent MY National Greenhouse Gas Program, as proposed at 76 Fed. Reg. 74854, 75357 (December 1, 2011).

(14) "Executive Officer" means the Executive Officer of the California Air Resources Board.

(15) "Footprint" means the product of average track width (rounded to the nearest tenth of an inch) and wheelbase (measured in inches and rounded to the nearest tenth of an inch), divided by 144 and then rounded to the nearest tenth of a square foot, where the average track width is the average of the front and rear track widths, where each is measured in inches and rounded to the nearest tenth of an inch.

(16) "Federal Test Procedure" or "FTP" means 40 CFR, Part 86, Subpart B, as amended by 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."

(17) "Full-size pickup truck" means a light-duty truck that has a passenger compartment and an open cargo box and which meets the following specifications:

1. A minimum cargo bed width between the wheelhouses of 48 inches, measured as the minimum lateral distance between the limiting interferences (pass-through) of the wheelhouses. The measurement shall exclude the transitional arc, local protrusions, and depressions or pockets, if present. An open cargo box means a vehicle where the cargo box does not have a permanent roof or cover. Vehicles produced with detachable covers are considered "open" for the purposes of these criteria.

2. A minimum open cargo box length of 60 inches, where the length is defined by the lesser of the pickup bed length at the top of the body and the pickup bed length at the floor, where the length at the top of the body is defined as the longitudinal distance from the inside front of the pickup bed to the inside of the closed endgate as measured at the height of the top of the open pickup bed along vehicle centerline, and the length at the floor is defined as the longitudinal distance from the inside front of the pickup bed to the inside of the closed endgate as measured at the cargo floor surface along vehicle centerline.
3. A minimum towing capability of 5,000 pounds, where minimum towing capability is determined by subtracting the gross vehicle weight rating from the gross combined weight rating, or a minimum payload capability of 1,700 pounds, where minimum payload capability is determined by subtracting the curb weight from the gross vehicle weight rating.

(18) "Greenhouse Gas" means the following gases: carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons.

(19) "GWP" means the global warming potential of the refrigerant over a 100-year horizon, as specified in Intergovernmental Panel on Climate Change (IPCC) 2007: Climate Change 2007 -- The Physical Science Basis. S. Solomon et al. (editors), Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge, UK and New York, NY, USA, ISBN 0-521-70596-7, or determined by ARB if such information is not available in the IPCC Fourth Assessment Report.

(20) "High Efficiency Exterior Lighting" means a lighting technology that, when installed on the vehicle, is expected to reduce the total electrical demand of the exterior lighting system by a minimum of 60 watts when compared to conventional lighting systems. To be eligible for this credit the high efficiency lighting must be installed in the following components: parking/position, front and rear turn signals, front and rear side markers, stop/brake lights (including the center-mounted location), taillights, backup/reverse lights, and license plate lighting.

(21) "Improved condensers and/or evaporators" means that the coefficient of performance (COP) of air conditioning system using improved evaporator and condenser designs is 10 percent higher, as determined using the bench test procedures described in SAE J2765 "Procedure for Measuring System COP of a Mobile Air Conditioning System on a Test Bench," when compared to a system using standard, or prior model year, component designs. SAE J2765 is incorporated by reference herein. The manufacturer must submit an engineering analysis demonstrating the increased improvement of the system relative to the baseline design, where the baseline component(s) for comparison is the version which a manufacturer most recently had in production on the same vehicle design or in a similar or related vehicle model. The dimensional characteristics (e.g., tube configuration/thickness/spacing, and fin density) of the baseline component(s) shall be compared to the new component(s) to demonstrate the improvement in coefficient of performance.

(22) "Mild hybrid gasoline-electric vehicle" means a vehicle that has start/stop capability and regenerative braking capability, where the recaptured braking energy over the FTP is at least 15 percent but less than 75 percent of the total braking energy, where the percent of recaptured braking energy is measured and calculated according to 40 CFR § 600.108(g).

(23) "Model Type" means a unique combination of car line, basic engine, and transmission class.

(24) "2012 through 2016 MY National Greenhouse Gas Program" means the national program that applies to new 2012 through 2016 model year passenger cars, light-duty-trucks, and medium-duty passenger vehicles as adopted by the U.S. Environmental Protection Agency on April 1, 2010 (75 Fed. Reg. 25324, 25677 (May 7, 2010)).

(25) "2017 through 2025 MY National Greenhouse Gas Program" means the national program that applies to new 2017 through 2025 model year passenger cars, light-duty-trucks, and medium-duty passenger vehicles as adopted by the U.S. Environmental Protection Agency as codified in 40 CFR Part 86, Subpart S, except as follows: For model years 2021 through 2025, the "2017 through 2025 MY National Greenhouse Gas Program" means the national program that applies to new 2021 through 2025 model year passenger cars, light-duty-trucks, and medium-duty passenger vehicles as adopted by the U.S. Environmental Protection Agency as codified in 40 CFR Part 86, Subpart S, as last amended on October 25, 2016 that incorporates CFR sections 86.1818-12 (October 25, 2016), 86.1865-12 (October 25, 2016), 86.1866-12 (October 25, 2016), 86.1867-12 (October 25, 2016), 86.1868-12 (October 25, 2016), 86.1869-12 (October 25, 2016), 86.1870-12 (October 25, 2016), and 86.1871-12 (October 25, 2016).

(26) "Oil separator" means a mechanism that removes at least 50 percent of the oil entrained in the oil/refrigerant mixture exiting the compressor and returns it to the compressor housing or compressor inlet, or a compressor design that does not rely on the circulation of an oil/refrigerant mixture for lubrication.

(27) "Passive Cabin Ventilation" means ducts or devices which utilize convective airflow to move heated air from the cabin interior to the exterior of the vehicle.

(28) "Plug-in Hybrid Electric Vehicle" means "off-vehicle charge capable hybrid electric vehicle" as defined in the "California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes."

(29) "Reduced reheat, with externally controlled, fixed-displacement or pneumatic variable displacement compressor" means a system in which the output of either compressor is controlled by cycling the compressor clutch off-and-on via an electronic signal, based on input from sensors (e.g., position or setpoint of interior temperature control, interior temperature, evaporator outlet air temperature, or refrigerant temperature) and air temperature at the outlet of the evaporator can be controlled to a level at 41°F, or higher.

(30) "Reduced reheat, with externally-controlled, variable displacement compressor" means a system in which compressor displacement is controlled via an electronic signal, based on input from sensors (e.g., position or setpoint of interior temperature control, interior temperature, evaporator outlet air temperature, or refrigerant temperature) and air temperature at the outlet of the evaporator can be controlled to a level at 41°F, or higher.

(31) "SC03" means the SC03 test cycle as set forth in the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light Duty Trucks, and Medium Duty Vehicles."

(32) "Solar Reflective Paint" means a vehicle paint or surface coating which reflects at least 65 percent of the impinging infrared solar energy, as determined using ASTM standards E903-96 (Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres, DOI: 10.1520/E0903-96 (Withdrawn 2005)), E1918-06 (Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field, DOI: 10.1520/E1918-06), or C1549-09 (Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer, DOI: 10.1520/C1549-09). These ASTM standards are incorporated by reference, herein.

(33) "Solar Roof Panels" means the installation of solar panels on an electric vehicle or a plug-in hybrid electric vehicle such that the solar energy is used to provide energy to the electric drive system of the vehicle by charging the battery or directly providing power to the electric motor with the equivalent of at least 50 Watts of rated electricity output.

(34) "Strong hybrid gasoline-electric vehicle" means a vehicle that has start/stop capability and regenerative braking capability, where the recaptured braking energy over the Federal Test Procedure is at least 75 percent of the total braking energy, where the percent of recaptured braking energy is measured and calculated according to 40 CFR § 600.108(g).

(35) "Subconfiguration" means a unique combination within a vehicle configuration of equivalent test weight, road load horsepower, and any other operational characteristics or parameters which is accepted by USEPA.

(36) "US06" means the US06 test cycle as set forth in the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light Duty Trucks, and Medium Duty Vehicles."

(37) "Worst-Case" means the vehicle configuration within each test group that is expected to have the highest CO_2-equivalent value, as calculated in section (a)(5).

(g) Severability.

Each provision of this section is severable, and in the event that any provision of this section is held to be invalid, the remainder of both this section and this article remains in full force and effect.

NOTE: Authority cited: Sections 39500, 39600, 39601, 43013, 43018, 43018.5, 43101, 43104 and 43105, Health and Safety Code. Reference: Sections 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43018.5, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106 and 43211, Health and Safety Code.

§ 1962.2.1. Zero-Emission Vehicle Standards for 2018 and Subsequent Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles ~~Electric Vehicle Charging Requirements~~. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

(a) *ZEV Emission Standard.* The Executive Officer shall certify new 2018 and subsequent model year passenger cars, light-duty trucks, and medium-duty vehicles as ZEVs, vehicles that produce zero exhaust emissions of any criteria pollutant (or precursor pollutant) or greenhouse gas, excluding emissions from air conditioning systems, under any possible operational modes or conditions.

(b) *[Reserved.]*

(c) *[Reserved.]*

(d) *[Reserved.]*

(e) *[Reserved.]*

(f) *[Reserved.]*

(g) *[Reserved.]*

(h) *Test Procedures.*

(1) Determining Compliance. The certification requirements and test procedures for determining compliance with this section 1962.2 are set forth in "California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes," adopted March 22, 2012, amended December 6, 2012~~September 3, 2015~~, which is incorporated herein by reference.

(2) NEV Compliance. The test procedures for determining compliance with subdivision 1962.1(d)(5)(F)1. are set forth in ETA-NTP002 (revision 3) "Implementation of SAE Standard J1666 May 93: Electric Vehicle Acceleration, Gradeability, and Deceleration Test Procedure" (December 1, 2004), and ETA-NTP004 (revision 3) "Electric Vehicle Constant Speed Range Tests" (February 1, 2008), both of which are incorporated by reference herein.

(i) ~~[Reserved.]~~ *[Reserved.]*

(j) ~~[Reserved.]~~ *[Reserved.]*

11/6/20
PER AGENCY
REQUEST
LSM

(k) ~~[Reserved.]~~ *[Reserved.]*

~~(l)~~(l) ~~[Reserved.]~~ *[Reserved.]*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43104 and 43105, Health and Safety Code. Reference: Sections 38562, 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43018.5, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43107, 43204 and 43205.5, Health and Safety Code.

§ 1962.3.1. Electric Vehicle Charging Requirements. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

(a) Applicability. This section applies to:

(1) all battery electric vehicles, range extended battery electric vehicles, except for model year 2006 through 2013 neighborhood electric vehicles, that qualify for ZEV credit under section 1962.1 and 1962.2; and

(2) all hybrid electric vehicles that are capable of being recharged by a battery charger that transfers energy from the electricity grid to the vehicle for purposes of recharging the vehicle traction battery.

(b) Definitions.

(1) The definitions in section 1962.1 and 1962.2 apply to this section.

(c) Requirements.

(1) Beginning with the 2006 model year, all vehicles identified in subdivision (a) must be equipped with a conductive charger inlet and charging system which meets all the specifications applicable to AC Level 1 and Level 2 charging contained in Society of Automotive Engineers (SAE) Surface Vehicle Recommended Practice SAE J1772 REV JAN 2010, SAE Electric Vehicle and Plug in Hybrid Electric Vehicle Conductive Charger Coupler, which is incorporated herein by reference. All such vehicles must also be equipped with an on-board charger with a minimum output of 3.3 kilowatts, or, sufficient power to enable a complete charge in less than 4 hours.

(2) A manufacturer may apply to the Executive Officer for approval to use an alternative to the AC inlet described in subdivision (c)(1), provided that the following conditions are met:

(A) each vehicle is supplied with a rigid adaptor that would enable the vehicle to meet all of the remaining system and on-board charger requirements described in subdivision (c)(1); and

(B) the rigid adaptor and alternative inlet must be tested and approved by a Nationally Recognized Testing Laboratory (NRTL).

Note: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43104 and 43105, Health and Safety Code. Reference: Sections 38562, 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43018.5, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43107, 43204 and 43205.5, Health and Safety Code.

§ 1965.0.1. Emission Control, Smog Index, and Environmental Performance Labels--1979 and Subsequent Model-Year Motor Vehicles. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

In addition to all other requirements, emission control labels are required by the California certification procedures contained in the "California Motor Vehicle Emission Control and Smog Index Label Specifications for 1978 through 2003 Model Year Motorcycles, Light-, Medium- And Heavy-Duty Engines And Vehicles," adopted March 1, 1978, as last amended September 5, 2003, which is incorporated herein by reference, 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), 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 § 1961.2(d), the "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel-Engines and Vehicles," incorporated by reference in § 1956.8(b)~~.~~, the "California Interim Certification Procedures for 2004 and Subsequent Model Hybrid-Electric Vehicles, in the Urban Bus and Heavy-Duty Vehicle Classes," incorporated by reference in § 1956.8(b) and (d), and the "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines," incorporated by reference in § 1956.8(d).

Smog index labels for passenger cars and light-duty trucks shall conform to the "California Smog Index Label Specifications for 2004 Through 2009 Model Year Passenger Cars and Light-Duty Trucks," adopted September 5, 2003, as last amended May 2, 2008, which is incorporated herein by reference. Environmental Performance labels for passenger cars, light-duty trucks, and medium-duty passenger vehicles shall conform to the "California Environmental Performance Label Specifications for 2009 and Subsequent Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles," adopted May 2, 2008, as last amended March 22, 2012 ~~September 2, 2015~~, which is incorporated herein by reference. Motorcycles shall meet the requirements of Title 40, Code of Federal Regulations, section 86.413-78, as last amended October 28, 1977, which is incorporated herein by reference.

Note: Authority cited: Sections 39600, 39601, 43200 and 43200.1, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43013, 43018.5, 43100, 43101, 43102, 43104, 43107, 43200 and 43200.1, Health and Safety Code.

11/6/26
PER AGENCY
REQUEST
LSM

§ 1969.0.1. Motor Vehicle Service Information - 1994 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Engines and Vehicles, and 2007 and Subsequent Model Heavy-Duty Engines. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

(a) Applicability

(1) This section shall apply to: (1) all California-certified 1994 and subsequent model-year passenger cars, light-duty trucks and medium-duty engines and vehicles equipped with on-board diagnostic (OBD) systems pursuant to title 13, California Code of Regulations, sections 1968.1 or 1968.2: and (2) all 2007 and subsequent model year California-certified heavy-duty engines equipped with OBD systems pursuant to title 13, California Code of Regulations, sections 1971 or 1971.1. This section shall supersede the provisions of section 1968.1(k)(2.1) at all times that this section is effective and operative. This regulation shall also apply to any passenger cars, light-duty trucks, medium-duty vehicles, and medium- and heavy-duty engines certified to future on-board diagnostic requirements adopted by the Air Resources Board.

(2) Motor vehicle and engine manufacturers shall comply with amendments made to this section no later than 90 days after such amendments are made effective by the Secretary of State. Copies of any amendments to this section may be obtained upon request to the Chief of the Emissions Certification and Compliance Division at 4001 Iowa Avenue, Riverside, California 92507.

(b) Optional Regulatory Compliance.

(1) Motor vehicle manufacturers that produce engines for use on heavy-duty vehicles may, for those engines, alternatively comply with all service information and tool provisions of this regulation that are applicable to 1994 and subsequent model year passenger cars, light-duty trucks, and medium-duty engines and vehicles, subject to Executive Officer approval. Implementation dates must comply with the service information provision dates applicable to engine manufacturers.

(2) Engine manufacturers of diesel-derived engines for use in medium-duty vehicles may, for those engines, alternatively comply with all service information and tool provisions of this regulation that are applicable to 2010 and subsequent model year heavy-duty engines, subject to Executive Officer approval. Implementation dates must comply with the service information provision dates applicable to motor vehicle manufacturers.

(c) Severability of Provisions. If any provision of this section or its application is held invalid, the remainder of the section and the application of such provision to other persons or circumstances shall not be affected.

(d) Definitions. The definitions in section 1900(b), Division 3, Chapter 9, Title 13 of the California Code of Regulations, apply with the following additions:

(1) "Access codes, recognition codes and encryption" mean any type, strategy, or means of encoding software, information, devices, or equipment that would prevent the access to, use of, or proper function of any emission-related part.

(2) "Authorized service network" means a group of independent service and repair facilities that are recognized by motor vehicle manufacturers or engine manufacturers as being capable of performing repairs to factory specifications, including warranty repair work.

(3) "Bi-directional control" means the capability of a diagnostic tool to send messages on the data bus (if applicable) that temporarily override a module's control over a sensor or actuator and give control to the diagnostic tool operator. Bi-directional controls do not create permanent changes to engine or component calibrations.

(4) "Covered person" means: (1) any person or entity engaged in the business of service or repair of passenger cars, light-duty trucks, or medium-duty motor vehicles, engines, or transmissions who is licensed or registered with the Bureau of Automotive Repair, pursuant to section 9884.6 of the Business and Professions Code, to conduct that business in California; (2) any person or entity engaged in the business of service or repair of heavy-duty motor vehicles, engines, or transmissions; (3) any commercial business or government entity that repairs or services its own California motor vehicle fleet(s); (4) tool and equipment companies; or (5) any person or entity engaged in the manufacture or remanufacture of emission-related motor vehicle or engine parts for California motor vehicles and motor vehicle engines.

(5) "Data stream information" means information that originates within a vehicle or engine by a module or intelligent sensor (including, but not limited to, a sensor that contains and is controlled by its own module) and is transmitted between a network of modules and intelligent sensors connected in parallel with either one or two communications wires. The information is broadcast over communication wires for use by other modules such as chassis or transmission modules to conduct normal vehicle operation or for use by diagnostic tools. Data stream information does not include engine calibration-related information.

(6) "Days" means calendar days (unless otherwise specified in this section); in computing the time within which a right may be exercised or an act is to be performed, the day of the event from which the designated period runs shall not be included and the last day shall be included, unless the last day falls on a Saturday, Sunday, or a California-recognized holiday observed by the subject motor vehicle manufacturer or engine manufacturer, in which case the last day shall be the following day.

(7) "Diesel-derived engine" means an engine using a compression ignition thermodynamic cycle and powered by either diesel fuel or alternative fuels such as liquefied petroleum gas or compressed natural gas.

(8) "Emission-related motor vehicle information" means 1994 and subsequent model year passenger car, light-duty truck, and medium-duty engine and vehicle information regarding any of the following:

(A) Any original equipment system, component, or part that controls emissions.

(B) Any original equipment system, component, or part associated with the powertrain system including, but not limited to, the fuel system and ignition system.

(C) Any original equipment system or component that is likely to impact emissions, including, but not limited to, the transmission system.

(9) "Emission-related engine information" means 2007 and subsequent model year heavy-duty engine information regarding any of the following:

(A) Any original equipment system, component, or part that controls emissions.

(B) Any original equipment system, component, or part associated with the engine system including, but not limited to, the fuel system and ignition system. For the purposes of this regulation, if an engine manufacturer elects to have its OBD system monitor inputs received from the transmission, the engine manufacturer is responsible for making relevant transmission system information available pursuant to subsection (e)(2); it shall also make available, beginning with the 2010 model year, and pursuant to subsection (e)(1), all corresponding repair information needed to repair the malfunction and turn off the malfunction indicator light.

(10) "Emission-related motor vehicle or engine part" means any direct replacement automotive part or any automotive part certified by Executive Order that may affect emissions from a motor vehicle or engine, including replacement parts, consolidated parts, rebuilt parts, remanufactured parts, add-on parts, modified parts and specialty parts.

(11) "Engine manufacturer," for the purposes of this regulation and unless otherwise noted, means any manufacturer of 2007 and subsequent model year heavy-duty engines equipped with on-board diagnostic systems pursuant to title 13, California Code of Regulations, sections 1971 or 1971.1.

(12) "Enhanced data stream information" means data stream information that is specific for a motor vehicle manufacturer's or an engine manufacturer's brand of tools and equipment.

(13) "Enhanced diagnostic, recalibration, and reconfiguration tool" means a proprietary tool developed by or for an engine manufacturer for its engines that can perform emission-related functions including, but not limited to, generic and enhanced tool diagnostic capability, recalibration, and reconfiguration.

(14) "Enhanced diagnostic tool" means a diagnostic tool that is specific to a motor vehicle manufacturer's vehicles or an engine manufacturer's engines and which can be used for emission-related repair purposes.

(15) "Fair, reasonable, and nondiscriminatory price", for the purposes of section 1969, means a price that allows a motor vehicle or engine manufacturer to be compensated for the cost of providing required emission-related motor vehicle or engine information and diagnostic tools considering the following:

(A) The net cost to the motor vehicle or engine manufacturer's franchised dealerships or authorized service networks, as applicable, for similar information obtained from motor vehicle manufacturers or engine manufacturers, less any discounts, rebates or other incentive programs;

(B) The cost to the motor vehicle manufacturer or engine manufacturer, as applicable, for preparing and distributing the information, excluding any research and development costs incurred in designing and implementing, upgrading or altering the onboard computer and its software or any other vehicle part or component. Amortized capital costs for the preparation and distribution of the information may be included;

(C) The price charged by other motor vehicle manufacturers or engine manufacturers, as applicable, for similar information;

(D) The price charged by the motor vehicle manufacturer or engine manufacturer, as applicable, for similar information immediately prior to the applicability of this section;

(E) The ability of an average covered person to afford the information.

(F) The means by which the information is distributed;

(G) The extent to which the information is used, which includes the number of users, and frequency, duration, and volume of use; and

(H) Inflation.

(16) "Generic scan tool" is a tool that can read standardized information pursuant to title 13, California Code of Regulations, sections 1968.1, 1968.2, and/or 1971.1 and that can be used on a number of different engines manufactured by different manufacturers.

(17) "Initialization" or "reinitialization" means the process of resetting a vehicle or engine security system by means of an ignition key or access code(s).

(18) "Intermediary information repository" means any individual or entity, other than a motor vehicle manufacturer or engine manufacturer, which collects and makes available to covered persons service information and/or information related to the development of emission-related diagnostic tools.

(19) "Motor vehicle manufacturer," for the purposes of this section, means any manufacturer of 1994 and subsequent model year engines or vehicles in the following classes: passenger cars, light-duty trucks, and medium-duty vehicles equipped with on-board diagnostic systems pursuant to title 13, California Code of Regulations, sections 1968.1 or 1968.2.

(20) "Nondiscriminatory" as used in the phrase "fair, reasonable, and nondiscriminatory price" means that motor vehicle manufacturers and engine manufacturers shall not set a price for emission-related motor vehicle or engine information or tools that provides franchised dealerships or authorized service networks with an unfair economic advantage over covered persons.

(21) "On-board diagnostic system" or "OBD system" for purposes of this section means any system certified to meet the requirements of title 13, California Code of Regulations, sections 1968.1, 1968.2, 1971, 1971.1, or future OBD requirements adopted by the Air Resources Board.

(22) A "Reasonable business means" is a method or mode of distribution or delivery of information that is commonly used by businesses or government to distribute or deliver and receive information at a fair, reasonable, and nondiscriminatory price. A reasonable business mean includes, but is not limited to, the Internet, first-class mail, courier services, intermediary information repositories, and fax services.

(23) "Recalibration" means the process of downloading to an engine's on-board computer emission-related, heavy-duty revisions of on-board computer application software and calibration parameters with default configurations. Recalibration is not dependent on the use of the vehicle identification number (VIN) in determining vehicle configuration.

(24) "Reconfiguration" means the process of enabling or adjusting engine features or engine parameters associated with such features to adapt a heavy-duty engine to a particular vehicle and/or application.

(e) (1) Service Information. Except as expressly specified below, motor vehicle manufacturers and engine manufacturers shall respectively make available for purchase to all covered persons all emission-related motor vehicle information and emission-related engine information, as applicable, that is provided to the motor vehicle manufacturer's or engine manufacturer's franchised dealerships or authorized service networks for the engine or vehicle models they have certified in California. Motor vehicle manufacturers and engine manufacturers electing to comply with one of the options of subsection (b) shall make available the emission-related information for the vehicle class for which they opt to comply. The information shall include, but is not limited to, diagnosis, service, and repair information and procedures, technical service bulletins, troubleshooting guides, wiring diagrams, and training materials useful for self-study outside a motor vehicle manufacturer's or engine manufacturer's training classroom. Any motor vehicle manufacturer or engine manufacturer choosing to withhold training materials because it has determined they are not useful for self-study as indicated above shall identify and describe the materials on its website. The motor vehicle manufacturer's or engine manufacturer's determination is subject to Executive Officer review and approval.

(2) On-Board Diagnostic System (OBD) Information. Motor vehicle manufacturers and engine manufacturers shall make available for purchase to all covered persons, a general description of each OBD system used in 1996 and subsequent model year passenger cars, light-duty trucks, and medium-duty engines and vehicles, and 2007 and subsequent model year heavy-duty engines, which shall include the following:

(A) A general description of the operation of each monitor, including a description of the parameter that is being monitored.

(B) A listing of all typical OBD diagnostic trouble codes associated with each monitor.

(C) A description of the typical enabling conditions for each monitor to execute during vehicle or engine operation, including, but not limited to, minimum and maximum intake air and engine coolant temperature, vehicle speed range, and time after engine startup. Motor vehicle manufacturers and engine manufacturers must also make available all existing monitor-specific OBD drive cycle information for all major OBD monitors as equipped including, but not limited to, catalyst, catalyst heater, oxygen sensor, oxygen sensor heater, evaporative system, exhaust gas recirculation, secondary air, and air conditioning system. As applicable, manufacturers of diesel vehicles or engines must also make available all existing monitor-specific drive cycle information for those engines and vehicles that perform misfire, fuel system, and comprehensive monitoring under specific driving conditions (i.e., non-continuous monitoring).

(D) A listing of each monitor sequence, execution frequency and typical duration.

(E) A listing of typical malfunction thresholds for each monitor.

(F) For OBD parameters for specific vehicles and engines that deviate from the typical parameters, the OBD description shall indicate the deviation and provide a separate listing of the typical values for those vehicles and engines. Subject to Executive Officer approval, manufacturers may consolidate typical value listings into a range of values or another acceptable format if the number of typical parameters is unduly burdensome to list.

(G) Identification and Scaling Information.

1. For 1994 and subsequent model year passenger cars, light-duty trucks, and medium-duty engines and vehicles, identification and scaling information necessary to interpret and understand data available to a generic scan tool through Service/Mode 6, pursuant to Society of Automotive Engineers (SAE) J1979, "E/E Diagnostic Test Modes - Equivalent to ISO/DIS 15031-5: April 30, 2002," April 2002, which is incorporated by reference in title 13, California Code of Regulations, sections 1968.1 and 1968.2.

2. For 2013 and subsequent model year heavy-duty engines, identification and scaling information necessary to interpret and understand data available through Diagnostic Message 8 pursuant to SAE Recommended Practice J1939-73 or through Service/Mode $06 pursuant to Society of Automotive Engineers (SAE) J1979, "E/E Diagnostic Test Modes - Equivalent to ISO/DIS 15031-5: April 30, 2002," April 2002, both of which are incorporated by reference in title 13, California Code of Regulations, section 1971.1.

(H) Except as provided below, the information required by this subsection does not include specific algorithms, specific software code or specific calibration data beyond those required to be made available through the generic scan tool pursuant to the requirements of title 13, California Code of Regulations, sections 1968.1, 1968.2, 1971.1, as applicable, and all future adopted OBD regulations for passenger cars, light-duty trucks, medium-duty engines and vehicles, and heavy-duty engines. Algorithms, software codes, or calibration data that are made available to franchised dealerships or authorized service networks shall be made available for purchase to covered persons. To the extent possible, motor vehicle manufacturers and engine manufacturers shall organize and format the information so that it will not be necessary to divulge specific algorithms, codes, or calibration data considered to be a trade secret by the motor vehicle manufacturer or engine manufacturer.

(3) On-Board Computer Initialization Procedures.

(A) Consistent with the requirements of subsection (i) below, motor vehicle manufacturers and engine manufacturers shall make available for purchase to all covered persons computer or anti-theft system initialization information for vehicles or engines so equipped necessary for:

1. The proper installation of on-board computers on motor vehicles or engines that employ integral vehicle security systems; or

2. The repair or replacement of any other emission-related part.

(B) Motor vehicle manufacturers and engine manufacturers must make this information available for purchase in a manner that will not require a covered person to purchase enhanced diagnostic tools to perform the initialization. Motor vehicle manufacturers and engine manufacturers may make such information available through, for example, generic aftermarket tools, a pass-through device, or inexpensive manufacturer-specific cables.

(C) A motor vehicle manufacturer or engine manufacturer may request Executive Officer approval to be excused from the requirements above for some or all model year vehicles or engines, as applicable, through the 2009 model year. The Executive Officer shall approve the request upon finding that the motor vehicle manufacturer or engine manufacturer has demonstrated that:

1. The availability of such information to covered persons would significantly increase the risk of vehicle theft;

2. A technical and economic need for such a request exists; and

3. It will make available to covered persons reasonable alternative means to install computers, or to otherwise repair or replace an emission-related part, at a fair, reasonable, and nondiscriminatory price and that such alternative means do not place covered persons, as a class, at a competitive disadvantage to either franchised dealerships or authorized service networks in their ability to service and repair vehicles or engines.

    a. Any alternative means shall be available to covered persons within 24 hours of the initial request and shall not require the purchase of enhanced diagnostic tools to perform an initialization. Alternatives may include lease of such tools, but only at a fair, reasonable and nondiscriminatory price.

b. In lieu of leasing its enhanced diagnostic tools, a motor vehicle manufacturer or engine manufacturer may alternatively make available for purchase to independent equipment and tool companies all data stream information needed to make their diagnostic tools fully functional for initialization purposes. Any motor vehicle manufacturer or engine manufacturer choosing this option must release the information to equipment and tool companies within 60 days of Executive Officer approval.

(D) All approvals are conditional and subject to audit under subsection (l) below and possible rescission if the conditions set forth in subsection (e)(3)(C) fail to be satisfied.

(4) The information required by this subsection shall be made available for purchase no later than 180 days after the start of engine or vehicle introduction into commerce or concurrently with its availability to franchised dealerships or authorized service networks, whichever occurs first.

(f) Internet Availability for Service Information.

(1) Information required to be made available for purchase under subsection (e), excluding subsection (e)(3), shall be directly accessible via the Internet. As an exception, motor vehicle manufacturers or engine manufacturers with annual California sales of less than 300 engines or vehicles (based on the average number of California-certified engines or vehicles sold by the motor vehicle manufacturer or engine manufacturer in the three previous consecutive model years) have the option not to provide required materials directly over the Internet. Such motor vehicle manufacturers and engine manufacturers may instead propose an alternative reasonable business means for providing the information required by this section to the Executive Officer for review and approval. The alternate method shall include an Internet website that adequately specifies that the required service information is readily available through other reasonable business means at fair, reasonable, and nondiscriminatory prices. If a motor vehicle manufacturer or engine manufacturer later exceeds the three-year sales average, it would be required to begin complying with all Internet availability requirements the next model year. In such cases, the requirements would apply only to those engine and vehicle models certified in that and subsequent model years and would not apply to any models that were within carry-over test groups that were initially certified before the sales average was exceeded.

(2) For purposes of making the information available for purchase via the Internet, motor vehicle manufacturers and engine manufacturers, or their designees, shall establish and maintain an Internet website(s) that:

(A) Is accessible at all times, except during times required for routine and emergency maintenance. Routine maintenance shall be scheduled after normal business hours. If the motor vehicle manufacturer's or engine manufacturer's service information website(s) is not available for more than 24 hours for other than routine maintenance, the motor vehicle manufacturer or engine manufacturer, as applicable, shall notify the Executive Officer by either phone or email within one business day.

(B) Houses all of the required information such that it is available for direct online access (i.e., for online viewing and/or file downloading), except as provided in subsections (e)(3), (f)(2)(G) and (f)(2)(J). In addition to direct online access, motor vehicle manufacturers and engine manufacturers may concurrently offer the information by means of electronic mail, fax transmission, or other reasonable business means.

(C) Is written in English with all text using readable font sizes.

(D) Has clearly labeled and descriptive headings or sections, has an online index connected to a search engine and/or hyperlinks that directly take the user to the information, and has a comprehensive search engine that permits users to obtain information by various query terms including, but not limited to, engine, transmission, or vehicle model (as applicable), model year, bulletin number, diagnostic procedure, and trouble code.

(E) Provides, at a minimum, e-mail access for communication with a designated contact person(s). The contact person(s) shall respond to any inquiries within 2 days of receipt, Monday through Friday. The website shall also provide a business address for the purposes of receiving mail, including overnight or certified mail.

(F) Lists the most recent updates to the website. Updates must occur concurrently with the availability of new or revised information to franchised dealerships or authorized service networks, whichever occurs first.

(G) Provides all training materials offered by the motor vehicle manufacturer or engine manufacturer, as applicable, as required under subsection (e)(1). For obtaining any training materials that are not in a format that can be readily downloaded directly from the Internet (e.g., instructional tapes, full-text information associated with bundled software, CD-ROMs, or other media), the website must include information on the type of materials that are available, and how such materials can be purchased.

(H) Offers media files (if any) and other service information documents in formats that can be viewed with commonly available software programs (e.g., Adobe Acrobat, Microsoft Word, RealPlayer, etc.).

(I) Provides secure Internet connections (i.e., certificate-based) for transfer of payment and personal information.

(J) Provides ordering information and instructions for the purchase of tools and information that are required to be made available pursuant to subsections (g) and (h).

(K) Complies with the following requirements for term, definitions, abbreviations, and acronyms:

1. For 2003 and subsequent model-year passenger cars, light duty trucks, and medium-duty engines and vehicles, complies with the SAE Recommended Practice J1930, "Electrical/Electronic Systems, Diagnostic Terms, Definitions, Abbreviations, and Acronyms - Equivalent to ISO/TR 15031-2: April 30, 2002," April 2002, incorporated by reference herein, for all emission-related motor vehicle information.

2. For 2010 and later model year heavy-duty engines, emission-related nomenclature shall comply with SAE J2403, "Medium/Heavy-Duty E/E Systems Diagnosis Nomenclature," August 2004, incorporated by reference herein.

(L) Complies with the following website performance criteria:

1. Possesses sufficient server capacity to allow ready access by all users and has sufficient downloading capacity to assure that all users may obtain needed information without undue delay.

2. Broken weblinks shall be corrected or deleted weekly.

3. Website navigation does not require a user to return to the motor vehicle manufacturer's or engine manufacturer's home page or a search engine in order to access a different portion of the site. The use of "one-up" links (i.e., links that connect to related webpages that preceded the one being viewed) is recommended at the bottom of subordinate webpages in order to allow a user to stay within the desired subject matter.

4. Any manufacturer-specific acronym or abbreviation shall be defined in a glossary webpage which, at a minimum, is hyperlinked by each webpage that uses such acronyms and abbreviations. Motor vehicle manufacturers and engine manufacturers may request Executive Officer approval to use alternate methods to define such acronyms and abbreviations. The Executive Officer shall approve such methods if the motor vehicle manufacturer or engine manufacturer adequately demonstrates that the method provides equivalent or better ease-of-use to the website user.

(M) Indicates the minimum hardware and software specifications required for satisfactory access to the website(s).

(3) All information must be maintained by motor vehicle manufacturers and engine manufacturers for a minimum of fifteen years. After such time, the information may be retained in an off-line electronic format (e.g., CD-ROM) and made available for purchase in that format at fair, reasonable, and nondiscriminatory prices upon request. Motor vehicle manufacturers and engine manufacturers shall index their available archived information with a title that adequately describes the contents of the document to which it refers. Motor vehicle manufacturers and engine manufacturers may allow for the ordering of information directly from the website, or from a website hyperlinked to the motor vehicle manufacturer's or engine manufacturer's website. In the alternative, motor vehicle manufacturers and engine manufacturers shall list a phone number and address where covered persons can call or write to obtain requested information through reasonable business means.

(4) Motor vehicle manufacturers and engine manufacturers must implement fair, reasonable, and nondiscriminatory pricing structures relative to a range of time periods for online access (e.g., in cases where information can be viewed online) and/or the amount of information purchased (e.g., in cases where information becomes viewable after downloading). These pricing structures shall be submitted to the Executive Officer for review concurrently with being posted on the motor vehicle manufacturer's or engine manufacturer's service information website(s).

(5) Motor vehicle manufacturers and engine manufacturers must provide the Executive Officer with free, unrestricted access to their Internet websites. Access shall include the ability to directly view and download posted service information. The information necessary to access the websites (e.g., user name, password, contact person(s)) must be submitted to the Executive Officer once the websites are operational.

(6) Reporting Requirements. Motor vehicle manufacturers and engine manufacturers shall provide the Executive Officer with reports that adequately demonstrate that their individual Internet websites meet the requirements of subsection (f)(2). The reports shall also indicate the performance and effectiveness of the websites by using commonly used Internet statistics (e.g., successful requests, frequency of use, number of subscriptions purchased, etc.). Motor vehicle manufacturers and engine manufacturers shall submit such reports annually within 30 days of the end of the calendar year. The Executive Officer may also require motor vehicle manufacturers and engine manufacturers to submit additional reports upon request, including any information required by the United States Environmental Protection Agency under the federal service information regulation. These reports shall be submitted in a format prescribed by the Executive Officer.

(g) Light-Duty and Medium-Duty Vehicle Diagnostic and Reprogramming Tools and Information.

(1) Diagnostic and Reprogramming Tools. Motor vehicle manufacturers shall make available for purchase through reasonable business means to all covered persons, all emission-related enhanced diagnostic tools and reprogramming tools available to franchised dealers, including software and data files used in such equipment. The motor vehicle manufacturer shall ship purchased tools to a requesting covered person as expeditiously as possible after a request has been made.

(2) Data Stream and Bi-Directional Control Information. Motor vehicle manufacturers shall make available for purchase through reasonable business means, to all equipment and tool companies, all information necessary to read and format all emission-related data stream information, including enhanced data stream information, that is used in diagnostic tools available to franchised dealerships or authorized service networks, and all information that is needed to activate all emission-related bi-directional controls that can be activated by franchised dealership or authorized service network tools. Motor vehicle manufacturers may require, as a condition of sale, that the business agreement contain indemnity or "hold harmless" clauses that relieve the motor vehicle manufacturer from any liability resulting from damage caused by tools produced by the tool and equipment company that is otherwise not attributable to the data provided by the motor vehicle manufacturer. Motor vehicle manufacturers shall make all required information available through the Internet or other reasonable business means to the requesting equipment and tool company within 14 days after the request to purchase has been made, unless the motor vehicle manufacturer petitions the Executive Officer for approval to refuse to disclose such information ("petition for non-disclosure") to the requesting company or petitions the Executive Officer for additional time to comply ("petition for additional time"). After receipt of a petition and consultation with the affected parties, the Executive Officer shall either grant or refuse the petition based on the evidence submitted during the consultation process:

(A) If the evidence demonstrates that the motor vehicle manufacturer has a reasonably based belief that the requesting equipment and tool company could not produce safe and functionally accurate tools that would not cause damage to the vehicle, a petition for non-disclosure will be granted.

(B) If the evidence demonstrates that the motor vehicle manufacturer does not have a reasonably-based belief that the requesting equipment and tool company could not produce safe and functionally accurate tools that would not cause damage to the vehicle, a petition for non-disclosure will be denied and the motor vehicle manufacturer shall make the requested information available to the requesting equipment and tool company within 2 days of the denial.

(C) If the motor vehicle manufacturer submits a petition for additional time, and satisfactorily demonstrates to the Executive Officer that the motor vehicle manufacturer is able to comply but requires additional time within which to do so, the Executive Officer shall grant the petition and provide additional time that is necessary to fully and expeditiously comply. Petitions for additional time shall be considered by the Executive Officer on a case-by-case basis.

(3) Reprogramming Information.

(A) Beginning with the 2004 model year, reprogramming methods used for passenger cars, light-duty trucks, and medium-duty engines and vehicles shall be compatible with SAE J2534-1 Paper, "Recommended Practice for Pass-Thru Vehicle Programming, December 2004, which is incorporated by reference herein, for all vehicle models that can be reprogrammed by franchised dealerships or authorized service networks.

(B) Motor vehicle manufacturers shall make available for purchase through reasonable business means to covered persons for vehicle models meeting the requirements of subsection (g)(3)(A) all vehicle reprogramming information and materials necessary to install motor vehicle manufacturers' software and calibration data to the extent that it is provided to franchised dealerships. The motor vehicle manufacturer shall, within 2 days of receipt of a covered person's request, provide purchased reprogramming information via an Internet download or, if available in a different electronic format, via postal mail or package delivery service.

(4) The information and tools required by this subsection shall be made available for purchase no later than 180 days after the start of vehicle introduction into commerce or concurrently with its availability to franchised dealerships or authorized service networks, whichever occurs first.

(h) Heavy-Duty Engine Enhanced Diagnostic, Recalibration, and Reconfiguration Tools and Information.

(1) (A) Engine manufacturers shall continue to make available for purchase through reasonable business means all emission-related diagnostic tools currently available to covered persons, including installation software and data files used in such equipment. Beginning with the 2013 model year, engine manufacturers shall also make available for purchase all emission-related enhanced diagnostic tools, recalibration tools, and reconfiguration tools available to franchised dealerships and authorized service networks, including installation software and data files used in such equipment. The engine manufacturer shall ship purchased tools to a requesting covered person as expeditiously as possible after a request has been made. As a condition for sale and shipment, however, an engine manufacturer may request that the requesting covered persons to take all necessary training offered by the engine manufacturer. Any required training materials and classes must comply with the following conditions:

1. similar training must be required by the engine manufacturer for the use of the same tool by its franchised dealerships and authorized service networks, and the training required for covered persons must be substantially similar to such training in terms of material covered and length of training classes;

2. the training must be available within six months after a tool request has been made;

3. the training must be available at a minimum of one California location; and

4. the training must be made available to the covered person at a fair, reasonable and nondiscriminatory price.

(B) Recalibration and reconfiguration software, methods, and parameters shall be made available for purchase through reasonable business means to covered persons. Recalibration information and methods shall be compatible with either SAE J2534-1, December 2004, or the Technology and Maintenance Council's (TMC) Recommended Practice RP1210A, "WindowsECommunication API," July 1999, which are incorporated by reference herein.

(2) Data Stream and Bi-Directional Control Information.

(A) Beginning with the 2013 model year, engine manufacturers shall make available for purchase through reasonable business means, to all equipment and tool companies, all information necessary to read and format all emission-related data stream information, including enhanced data stream information, that is used in diagnostic tools available to franchised dealerships or authorized service networks, and all information that is needed to activate all emission-related bi-directional controls that can be activated by franchised dealership or authorized service network tools. Engine manufacturers shall make all required information available through the Internet or other reasonable business means to the requesting equipment and tool company within 14 days after the request to purchase has been made, unless the engine manufacturer petitions the Executive Officer for approval to refuse to disclose such information ("petition for non-disclosure") to the requesting company or petitions the Executive Officer for additional time to comply ("petition for additional time"). After receipt of a petition and consultation with the affected parties, the Executive Officer shall either grant or refuse the petition based on the evidence submitted during the consultation process:

1. If the evidence demonstrates that the engine manufacturer has a reasonably based belief that the requesting equipment and tool company could not produce safe and functionally accurate tools that would not cause damage to the engine, the petition for non-disclosure will be granted. Engine manufacturers are not required to provide data stream and bi-directional control information that would permit an equipment and tool company's products to modify a California-certified engine or transmission configuration.

2. If the evidence does not demonstrate that the engine manufacturer has a reasonably-based belief that the requesting equipment and tool company could not produce safe and functionally accurate tools that would not cause damage to the engine, the petition for non-disclosure will be denied and the engine manufacturer, as applicable, shall make the requested information available to the requesting equipment and tool company within 2 days of the denial.

3. If the engine manufacturer submits a petition for additional time, and satisfactorily demonstrates to the Executive Officer that the motor vehicle manufacturer is able to comply but requires additional time within which to do so, the Executive Officer shall grant the petition and provide additional time to fully and expeditiously comply. Petitions for additional time shall be considered by the Executive Officer on a case-by-case basis.

(B) Engine manufacturers may require that tools using information covered under subsection (h)(2)(A) comply with the Component Identifier message specified in SAE J1939-71, dated December 2003, as Parameter Group Number (PGN) 65249 (including the message parameter's make, model, and serial number) and the SAE J1939-81, dated May 2003, Address Claim PGN.

(C) An engine manufacturer may require, as a condition of sale of its tools, that the business agreement contain indemnity or "hold harmless" clauses that relieve the engine manufacturer from any liability resulting from damage caused by tools produced by the tool and equipment company that is otherwise not attributable to the data provided by the engine manufacturer.

(3) The information and tools required by this subsection shall be made available for purchase no later than 180 days after the start of engine introduction into commerce or concurrently with its availability to franchised dealerships or authorized service networks, whichever occurs first.

(i) Costs: All information and tools required to be provided to covered persons by this regulation shall be made available for purchase at a fair, reasonable, and nondiscriminatory prices.

(j) Motor vehicle manufacturers and engine manufacturers shall not utilize any access code, recognition code or encryption for the purpose of preventing a vehicle or engine owner from using an emission-related motor vehicle or engine part (with the exception of the powertrain control module, engine control modules and transmission control modules, as applicable), that has not been manufactured by that motor vehicle manufacturer or engine manufacturer or any of its original equipment suppliers.

(k) Trade Secrets: Motor vehicle manufacturers and engine manufacturers may withhold trade secret information (as defined in the Uniform Trade Secret Act contained in Title 5 of the California Civil Code) which otherwise must be made available for purchase, subject to the following:

(1) At the time of initial posting of all information required to be provided under subsections (e) through (h) above, a motor vehicle manufacturer or engine manufacturer shall identify, by brief description on its Internet website, any information that it believes to be a trade secret and not subject to disclosure.

(2) A covered person, believing that a motor vehicle manufacturer or engine manufacturer has not fully provided all information that is required to be provided under subsections (e) through (h) above shall submit a request in writing by certified mail to the motor vehicle manufacturer for release of the information.

(3) Upon receipt of the request for information, a motor vehicle manufacturer or engine manufacturer shall do the following:

(A) If it had not previously made the information available for purchase because of an oversight, it shall make the information available within 2 days from receipt of the request directly to the requesting covered person at a fair, reasonable, and nondiscriminatory price and by reasonable business means. Additionally, the motor vehicle manufacturer or engine manufacturer shall, within 7 days, make such information available for purchase to other covered persons consistent with the requirements of this regulation.

(B) If it has not made the requested information available for purchase because it believes the information to be a trade secret, it shall within 14 days, notify the requesting covered person that it considers the information to be a trade secret, provide justification in support of its position, and make reasonable efforts to see if the matter can be resolved informally.

(C) If during this 14 day period set forth in subsection (k)(3)(B), the motor vehicle manufacturer or engine manufacturer determines that the information is, in fact, not a trade secret, it shall immediately notify the requesting covered person of its determination and make the information available within the timeframes and means set forth in subsection (k)(3)(A)

(D) If the parties can informally resolve the matter, the motor vehicle manufacturer or engine manufacturer shall within 2 days provide the requesting covered person with all of the information that is subject to disclosure consistent with that agreement. The motor vehicle manufacturer or engine manufacturer shall also, within 7 days, make such information available for purchase to other covered persons consistent with the requirements of this regulation.

(E) If the matter cannot be informally resolved, the motor vehicle manufacturer or engine manufacturer shall, within 30 days from the date that it notified the requesting covered person that it considers the information to be a trade secret, or such longer period the parties may mutually agree upon, petition the California superior court for declaratory relief to make a finding that the information is exempt from disclosure because it is a trade secret. The petition shall be filed in accordance with the California Code of Civil Procedure section 395 et seq. The petition shall be accompanied with a declaration stating facts that show that the motor vehicle manufacturer or engine manufacturer has made a reasonable and good faith attempt to informally resolve the matter.

(l) Executive Officer Review of Compliance.

(A) The Executive Officer shall monitor compliance with the requirements of Health and Safety Code section 43105.5 and this regulation.

(2) The Executive Officer, through the Chief of the Mobile Source Operations Division (Division Chief), shall periodically audit a motor vehicle manufacturer's or engine manufacturer's Internet website(s) and other distribution sources to determine whether the information requirements of Health and Safety Code section 43105.5 and this regulation are being fulfilled. Motor vehicle manufacturers and engine manufacturers must provide the Executive Officer with free unrestricted access to the sites and other sources for the purposes of an audit.

(3) The Division Chief shall also commence an audit upon receipt of a request from a covered person that provides reasonable cause to believe that a motor vehicle manufacturer or engine manufacturer is not in compliance.

(A) Such a request shall be in the form of a written declaration setting forth specific details of the alleged noncompliance of the motor vehicle manufacturer or engine manufacturer. The declaration shall also set forth facts that demonstrate that the requesting covered person has undertaken efforts to resolve the matter informally with the named motor vehicle manufacturer or engine manufacturer.

(B) The covered person shall concurrently provide a copy of the audit request on the motor vehicle manufacturer or engine manufacturer against whom the request has been filed.

(C) The Division Chief shall determine if the request, on its face, sets forth facts establishing reasonable cause to believe that that motor vehicle manufacturer or engine manufacturer is in noncompliance with Health and Safety Code section 43105.5 or this regulation and that the covered person has undertaken reasonable efforts to informally resolve the alleged noncompliance with the motor vehicle manufacturer or engine manufacturer directly. If the Division Chief determines that the request satisfies these conditions, he or she shall conduct an audit of the designated motor vehicle manufacturer's or engine manufacturer's Internet website. Otherwise, the Division Chief shall dismiss the request and notify the requesting covered person and the affected motor vehicle manufacturer or engine manufacturer of his or her determination.

(4) In conducting any audit, the Division Chief may require the motor vehicle manufacturer or engine manufacturer to provide the ARB with all information and materials related to compliance with the requirements of Health and Safety Code section 43105.5 and this regulation, including but not limited to:

(A) Copies of all books, records, correspondence or documents in its possession or under its control that the motor vehicle manufacturer or engine manufacturer is required to provide to persons engaged in the service and repair industries and to equipment and tool companies under subsections (d) through (h) of this regulation, and

(B) Any and all reports or records developed or compiled either for or by the motor vehicle manufacturer or engine manufacturer to monitor performance of its Internet site(s).

(5) In conducting the audit, the Division Chief may order or subpoena the motor vehicle manufacturer or engine manufacturer, the party filing the request for inspection, or any other person with possible knowledge of the issue of noncompliance to appear in person and testify under oath. The Division Chief may also request or subpoena such persons to provide any additional information that the Division Chief deems necessary to determine any issue of noncompliance.

(6) Except for good cause, the audit shall be completed within 60 days from the date that the Division Chief notifies the motor vehicle manufacturer or engine manufacturer about the audit. At the conclusion of the audit, the Division Chief shall issue a written determination, with supporting findings, regarding compliance by the motor vehicle manufacturer or engine manufacturer.

(7) If the Division Chief finds sufficient credible evidence that the motor vehicle manufacturer or engine manufacturer is not in compliance with any requirements of Health and Safety Code section 43105.5 or this regulation, the determination shall be in the form of a notice to comply against the motor vehicle manufacturer or engine manufacturer.

(8) The Division Chief's determination not to issue a notice to comply against a motor vehicle manufacturer or engine manufacturer is subject to limited review by the Executive Officer.

(A) A covered person may only request that the Executive Officer review a determination that it specifically requested pursuant to subsection (l)(3) above.

(B) The covered person shall file the request for Executive Officer review within 10 days from the date of issuance of the Division Chief's determination.

1. The request shall be filed to the attention of the Executive Officer c/o Clerk of the Board, Air Resources Board, P.O. Box 2815, Sacramento, CA 95812-2815. A copy of the request shall be concurrently served on the motor vehicle manufacturer that was the subject of the audit and determination.

2. The request shall set forth specific facts and reasons why the determination should be reviewed and supporting legal authority for why a notice to comply should have been issued.

(C) The motor vehicle manufacturer or engine manufacturer may file an opposition to the request for review within 10 days from the date of service of the request for review.

(D) The Executive Officer shall issue a determination within 30 days from the last day that the motor vehicle manufacturer or engine manufacturer had to file an opposition. The Executive Officer may affirm the decision of the Division Chief; remand the matter back to the Division Chief for further consideration or evidence; or issue a notice to comply against the motor vehicle manufacturer or engine manufacturer.

(9) Within 30 days from the date of issuance of a notice to comply, the motor vehicle manufacturer or engine manufacturer shall either:

(A) Submit to the Executive Officer a compliance plan that adequately demonstrates that the motor vehicle manufacturer or engine manufacturer will come into compliance with this section within 45 days from the date of submission of the plan, or such longer period that the Executive Officer deems appropriate to allow the motor vehicle manufacturer or engine manufacturer to properly remedy the noncompliance; or

(B) Request an administrative hearing to consider the basis or scope of the notice to comply.

(10) If the motor vehicle manufacturer or engine manufacturer elects to submit a compliance plan, the Executive Officer shall review the plan and issue a written determination, within 30 days, either accepting or rejecting the plan. The Executive Officer shall reject the compliance plan if the Executive Officer finds that it will not bring the motor vehicle manufacturer or engine manufacturer into compliance within 45 days from the date that the plan would have been approved, or such longer period that the Executive Officer deemed appropriate to allow the motor vehicle manufacturer or engine manufacturer to properly remedy the noncompliance. The Executive Officer shall notify the motor vehicle manufacturer or engine manufacturer in writing of his or her determination, and that the Executive Officer will be seeking administrative review pursuant to subsection (m) below.

(11) After approving a proposed compliance plan, if the Executive Officer determines that the motor vehicle manufacturer or engine manufacturer has failed to comply with the terms of the plan, the Executive Officer shall notify the motor vehicle manufacturer or engine manufacturer of his or her determination and that he or she will be seeking administrative review pursuant to subsection (m) below.

(m) Administrative Hearing Review.

(1) A motor vehicle manufacturer or engine manufacturer may request that a hearing officer review the basis and scope of the notice to comply. Failure by the motor vehicle manufacturer or engine manufacturer to request such a review and failing, in the alternative, to submit a compliance plan as required by subsection (l)(9)(A) shall result in the Executive Officer's determination becoming final and may subject the motor vehicle manufacturer or engine manufacturer to penalties pursuant to Health and Safety Code section 43105.5(f) and subsection (l).

(2) The Executive Officer shall forward the following matters to a hearing officer for appropriate administrative review, including, if warranted, consideration of penalties:

(A) A compliance plan that it has rejected pursuant to subsection (l)(10).

(B) A notice to comply that has been issued against a motor vehicle manufacturer or engine manufacturer who has failed to either request administrative review of the Executive Officer determination, or, in the alternative, to submit a compliance plan.

(C) An Executive Officer determination that a motor vehicle manufacturer or engine manufacturer has failed to satisfy the terms of a compliance plan it has submitted in response to a notice to comply.

(3) Administrative hearings under this regulation shall be conducted pursuant to the procedures set forth in title 17, California Code of Regulations, section 60060.1 et seq.

(n) Penalties.

(1) If after an administrative hearing, the hearing officer finds that the motor vehicle manufacturer or engine manufacturer has failed to comply with any of the requirements of this section, and the motor vehicle manufacturer or engine manufacturer fails to correct the violation within 30 days from the date of his finding, the hearing officer may impose a civil penalty upon the motor vehicle manufacturer or engine manufacturer in an amount not to exceed $25,000 per day (including Saturdays, Sundays, and observed holidays) per violation until the violation is corrected. The hearing officer may immediately impose a civil penalty in cases where a motor vehicle manufacturer or engine manufacturer has failed to act in accordance with a compliance plan it has previously submitted.

(2) For purposes of this section, a finding by a hearing officer that a motor vehicle manufacturer or engine manufacturer has failed to comply with the requirements of Health and Safety Code section 43105.5 and title 13, California Code of Regulations, section 1969 et seq., including the failure to submit a timely compliance plan, shall be considered a single violation.

Note: Authority cited: Sections 39600, 39601, 43000.5, 43018, 43105.5 and 43700, Health and Safety Code. Reference: Sections 39027.3, 43104 and 43105.5, Health and Safety Code.

§ 1976.0.1. Standards and Test Procedures for Motor Vehicle Fuel Evaporative Emissions. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

(a) Fuel evaporative emissions from 1970 through 1977 model passenger cars and light-duty trucks are set forth in Title 40, Code of Federal Regulations, Part 86, Subparts A and C, as it existed on June 20, 1973. These standards are enforced in California pursuant to section 43008 of the Health and Safety Code.

(b) (1) Evaporative emissions for 1978 and subsequent model gasoline fueled, 1983 and subsequent model liquefied petroleum gas fueled, and 1993 and subsequent model alcohol fueled motor vehicles and hybrid electric vehicles subject to exhaust emission standards under this article, except petroleum fueled diesel vehicles, compressed natural gas fueled vehicles, hybrid electric vehicles that have sealed fuel systems which can be demonstrated to have no evaporative emissions, and motorcycles, shall not exceed the following standards:

(A) For vehicles identified below, tested in accordance with the test procedure based on the Sealed Housing for Evaporative Determination as set forth in Title 40, Code of Federal Regulations, sections 86.130-78 through 86.143-90 as they existed July 1, 1989, the evaporative emission standards are:

Vehicle Type	*Model Year*	*Hydrocarbons[1] Diurnal + Hot Soak (grams/test) 50K miles*
Passenger cars	1978 and 1979	6.0
Light-duty trucks		6.0
Medium-duty vehicles		6.0
Heavy-duty vehicles		6.0
Passenger cars	1980-1994[2]	2.0
Light-duty trucks		2.0
Medium-duty vehicles		2.0
Heavy-duty vehicles		2.0

[1] Organic Material Hydrocarbon Equivalent, for alcohol-fueled vehicles.

[2] Other than hybrid electric vehicles.

(B) For the vehicles identified below, tested in accordance with the test procedure which includes the running loss test, the hot soak test, and the 72 hour diurnal test, the evaporative emission standards are:

Vehicle Type	*Model Year*	*Hydrocarbons*[1]	
		Three-Day Diurnal +Hot Soak (grams/test) Useful Life[2]	*Running Loss (grams/mile) Useful Life*[2]
Passenger cars	1995 through 2005[3]	2.0	0.05
Light-duty trucks		2.0	0.05
Medium-duty vehicles (6,001-8,500 lbs. GVWR)			
with fuel tanks < 30 gallons		2.0	0.05
with fuel tanks ≥ 30 gallons		2.5	0.05
(8,501-14,000 lbs. GVWR)[4]		3.0	0.05
Heavy-duty vehicles (over 14,000 lbs. GVWR)		2.0	0.05
Hybrid electric passenger cars	1993 through 2005[5]	2.0	0.05
Hybrid electric light-duty trucks		2.0	0.05
Hybrid electric medium-duty vehicles		2.0	0.05

[1] Organic Material Hydrocarbon Equivalent, for alcohol-fueled vehicles.

[2] For purposes of this paragraph, "useful life" shall have the same meaning as provided in section 2112, Title 13, California Code of Regulations. Approval of vehicles which are not exhaust emission tested using a chassis dynamometer pursuant to section 1960.1 or 1961, Title 13, California Code of Regulations shall be based on an engineering evaluation of the system and data submitted by the applicant.

[3] The running loss and useful life three-day diurnal plus hot soak evaporative emission standards (hereinafter "running loss and useful life standards") shall be phased in beginning with the 1995 model year. Each manufacturer, except ultra-small volume and small volume manufacturers, shall certify the specified percent (a) of passenger cars and (b) of light-duty trucks, medium-duty vehicles and heavy-duty vehicles to the running loss and useful life standards according to the following schedule:

Model Year	***Minimum Percentage of Vehicles Certified to Running Loss and Useful Life Standards****
1995	10 percent
1996	30 percent
1997	50 percent

* The minimum percentage of motor vehicles of each vehicle type required to be certified to the running loss and useful life standards shall be based on the manufacturer's projected California model-year sales (a) of passenger cars and (b) of light-duty trucks, medium-duty vehicles and heavy-duty vehicles. Optionally, the percentage of motor vehicles can also be based on the manufacturer's projected California model-year sales (a) of passenger cars and light-duty trucks and (b) of medium-duty vehicles and heavy-duty vehicles.

Beginning with the 1998 model year, all motor vehicles subject to the running loss and useful life standards, except those produced by ultra-small volume manufacturers, shall be certified to the specified standards. In the 1999 through 2005 model years, all motor vehicles subject to the running loss and useful life standards, including those produced by ultra-small volume manufacturers, shall be certified to the specified standards.

All 1995 through 1998 model-year motor vehicles which are not subject to running loss and useful life standards pursuant to the phase-in schedule shall comply with the 50,000-mile standards in effect for 1980 through 1994 model-year vehicles.

[4] For the 1995 model year only, the evaporative emission standards for complete vehicles in this weight range shall be 2.0 grams/test and compliance with the evaporative emission standards shall be based on the SHED conducted in accordance with the procedures set forth in Title 40, Code of Federal Regulations, sections 86.130-78 through 86.143-90 as they existed July 1, 1989. For the 1995 through 2005 model years, the evaporative emission standards for incomplete vehicles in this weight range shall be 2.0 grams/test and compliance with the evaporative emission standards shall be based on the test procedures specified in paragraph 4.g. of the "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles."

[5] The running loss and useful life standards for all hybrid electric vehicles shall be effective beginning in the 1993 model year.

(C) For vehicles identified below, tested in accordance with the test procedure which includes the hot soak test and the 48 hour diurnal test, the evaporative emission standards are:

Vehicle Type	***Model Year***	***Hydrocarbons[1] Two-Day Diurnal + Hot Soak (grams/test) Useful Life[2]***
Passenger cars	1996 through	2.5
Light-duty trucks	2005[3]	2.5
Medium-duty vehicles		
(6.001-8,500 lbs. GVWR)		
with fuel tanks < 30 gallons		2.5
with fuel tanks ≥ 30 gallons		3.0
(8,501-14,000 lbs. GVWR)		3.5
Heavy-duty vehicles (over 14,000 lbs. GVWR)		4.5
Hybrid electric passenger cars	1996 through	2.5
Hybrid electric light-duty trucks	2005[3]	2.5
Hybrid electric medium-duty vehicles		2.5

[1] Organic Material Hydrocarbon Equivalent for alcohol-fueled vehicles.

[2] For purposes of this paragraph, "useful life" shall have the same meaning as provided in section 2112, Title 13, California Code of Regulations. Approval of vehicles which are not exhaust emission tested using a chassis dynamometer pursuant to section 1960.1 or 1961, Title 13, California Code of Regulations shall be based on an engineering evaluation of the system and data submitted by the applicant.

[3] The two-day diurnal plus hot soak evaporative emission standards (hereinafter "supplemental standards") shall be phased-in beginning with the 1996 model year. Those vehicles certified under the running loss and useful life standards for the 1996 through 2005 model years must also be certified under the supplemental standards.

(D) Zero-emission vehicles shall produce zero fuel evaporative emissions under any and all possible operational modes and conditions.

(E) For 2001 through 2014 model year vehicles, the optional zero-fuel evaporative emission standards for the three-day and two-day diurnal-plus-hot-soak tests are 0.35 grams per test for passenger cars, 0.50 grams per test for light-duty trucks 6,000 lbs. GVWR and under, and 0.75 grams per test for light-duty trucks from 6,001 to 8,500 lbs. GVWR, to account for vehicle non-fuel evaporative emissions (resulting from paints, upholstery, tires, and other vehicle sources). Vehicles demonstrating compliance with these evaporative emission standards shall also have zero (0.0) grams of fuel evaporative emissions per test for the three-day and two-day diurnal-plus-hot-soak tests. The "useful life" shall be 15 years or 150,000 miles, whichever occurs first. In lieu of demonstrating compliance with the zero (0.0) grams of fuel evaporative emissions per test over the three-day and two-day diurnal-plus-hot-soak tests, the manufacturer may submit for advance Executive Officer approval a test plan to demonstrate that the vehicle has zero (0.0) grams of fuel evaporative emissions throughout its useful life.

Additionally, in the case of a SULEV vehicle for which a manufacturer is seeking a partial ZEV credit, the manufacturer may prior to certification elect to have measured fuel evaporative emissions reduced by a specified value in all certification and in-use testing of the vehicle as long as measured mass exhaust emissions of NMOG for the vehicle are increased in all certification and in-use testing. The measured fuel evaporative emissions shall be reduced in increments of 0.1 gram per test, and the measured mass exhaust emissions of NMOG from the vehicle shall be increased by a gram per mile factor, to be determined by the Executive Officer, for every 0.1 gram per test by which the measured fuel evaporative emissions are reduced. For the purpose of this calculation, the evaporative emissions shall be measured, in grams per test, to a minimum of three significant figures.

(F) For the 2004 through 2014 model motor vehicles identified below, tested in accordance with the test procedures described in Title 40, Code of Federal Regulations, sections 86.130-78 through 86.143-90 as they existed July 1, 1989 and as modified by the "California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles" incorporated by reference in section 1976(c), the evaporative emission standards are:

Vehicle Type	***Hydrocarbon[1] Standards[2 3 4]***		
	Running Loss (grams per mile)	***Three Day Diurnal + Hot Soak (grams per test)***	***Two-Day Diurnal + Hot Soak (grams per test)***
Passenger cars	0.05	0.50	0.65
Light-duty trucks (under 8,501 lbs. GVWR)			
6,000 lbs. GVWR and under	0.05	0.65	0.85
6,001-8,500 lbs. GVWR	0.05	0.90	1.15
Medium-duty vehicles (8,501-14,000 lbs. GVWR)	0.05	1.00	1.25
Heavy-duty vehicles (over 14,000 lbs. GVWR)	0.05	1.00	1.25

[1] Organic Material Hydrocarbon Equivalent for alcohol-fueled vehicles.

[2] For all vehicles certified to these standards, the "useful life" shall be 15 years or 150,000 miles, whichever first occurs. Approval of vehicles which are not exhaust emission tested using a chassis dynamometer pursuant to section 1960.1 or 1961, title 13, California Code of Regulations shall be based on an engineering evaluation of the system and data submitted by the applicant.

[3] (a) These evaporative emission standards shall be phased-in beginning with the 2004 model year. Each manufacturer, except small volume manufacturers, shall certify at a minimum the specified percentage of its vehicle fleet to the evaporative emission standards in this table or the optional zero-evaporative emission standards in section 1976(b)(1)(E) according to the schedule set forth below. For purposes of this paragraph (a), each manufacturer's vehicle fleet consists of the total projected California sales of the manufacturer's gasoline-fueled, liquefied petroleum-fueled and alcohol-fueled passenger cars, light-duty trucks, medium-duty vehicles, and heavy-duty vehicles.

Model Year	***Minimum Percentage of Vehicles Certified to the Standards in §§ 1976(b)(1)(F) and (b)(1)(E)***
2004	40
2005	80

2006 and subsequent	100

A small volume manufacturer shall certify 100 percent of its 2006 and subsequent model vehicle fleet to the evaporative emission standards in the table or the optional zero-evaporative emission standards in section 1976(b)(1)(E).

All 2004 through 2005 model-year motor vehicles which are not subject to these standards or the standards in section 1976(b)(1)(E) pursuant to the phase-in schedule shall comply with the requirements of sections 1976(b)(1)(B) and (C).

(b) A manufacturer may use an "Alternative or Equivalent Phase-in Schedule" to comply with the phase-in requirements. An "Alternative Phase-in" is one that achieves at least equivalent emission reductions by the end of the last model year of the scheduled phase-in. Model-year emission reductions shall be calculated by multiplying the percent of vehicles (based on the manufacturer's projected California sales volume of the applicable vehicle fleet) meeting the new requirements per model year by the number of model years implemented prior to and including the last model year of the scheduled phase-in. The "cumulative total" is the summation of the model-year emission reductions (e.g., the three model-year 40/80/100 percent phase-in schedule would be calculated as: (40%*3 years) + (80%*2 years) + (100%*1 year) =380). The required cumulative total for the phase-in of these standards is 380 emission reductions. Any alternative phase-in that results in an equal or larger cumulative total than the required cumulative total by the end of the last model year of the scheduled phase-in shall be considered acceptable by the Executive Officer only if all vehicles subject to the phase-in comply with the respective requirements in the last model year of the required phase-in schedule. A manufacturer shall be allowed to include vehicles introduced before the first model year of the scheduled phase-in (e.g., in the previous example, 10 percent introduced one year before the scheduled phase-in begins would be calculated as: (10%*4 years) =40) and added to the cumulative total.

(c) These evaporative emission standards do not apply to zero-emission vehicles.

[4] In-use compliance whole vehicle testing shall not begin until the motor vehicle is at least one year from the production date and has accumulated a minimum of 10,000 miles. For vehicles introduced prior to the 2007 model year, in-use compliance standards of 1.75 times the "Three-Day Diurnal + Hot-Soak" and "Two-Day Diurnal + Hot-Soak" gram per test standards shall apply for only the first three model years of an evaporative family certified to a new standard.

(G) For 2015 and subsequent model motor vehicles, the following evaporative emission requirements apply:

1. A manufacturer must certify all vehicles subject to this section to the emission standards specified in either Option 1 or Option 2 below.

   a. *Option 1.* The evaporative emissions from 2015 and subsequent model motor vehicles, tested in accordance with the test procedure sequence described in the "California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles," incorporated by reference in section 1976(c), shall not exceed:

Vehicle Type	*Hydrocarbon[1] Emission Standards[2]*		
	Running Loss (grams per mile)	*Three-Day Diurnal + Hot Soak and Two-Day Diurnal + Hot Soak*	
		Whole Vehicle (grams per test)	*Fuel Only[3] (grams per test)*
Passenger cars	0.05	0.350	0.0
Light-duty trucks 6,000 lbs. GVWR and under	0.05	0.500	0.0
Light-duty trucks 6,001-8,500 lbs. GVWR	0.05	0.750	0.0
Medium-duty passenger vehicles	0.05	0.750	0.0
Medium-duty vehicles (8,501-14,000 lbs. GVWR)	0.05	0.750	0.0
Heavy-duty vehicles (over 14,000 lbs. GVWR)	0.05	0.750	0.0

[1] Organic Material Hydrocarbon Equivalent for alcohol-fueled vehicles.

[2] For all vehicles certified to these standards, the "useful life" shall be 15 years or 150,000 miles, whichever occurs first. Approval of vehicles that are not exhaust emission tested using a chassis dynamometer pursuant to section 1961, title 13, California Code of Regulations shall be based on an engineering evaluation of the system and data submitted by the applicant.

[3] In lieu of demonstrating compliance with the fuel-only emission standard (0.0 grams per test) over the three-day and two-day diurnal plus hot soak tests, a manufacturer may, with advance Executive Officer approval, demonstrate compliance through an alternate test plan.

b. *Option 2.* The evaporative emissions from 2015 and subsequent model motor vehicles, tested in accordance with the test procedure sequence described in the "California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles," incorporated by reference in section 1976(c), shall not exceed:

Vehicle Type	*Hydrocarbon[1] Emission Standards[2]*		
	Running Loss (grams per mile)	*Highest Whole Vehicle Diurnal + Hot Soak[345] (grams per test)*	*Canister Bleed[6] (grams per test)*
Passenger cars; and Light-duty trucks 6,000 lbs. GVWR and under, and 0-3,750 lbs. LVW	0.05	0.300	0.020
Light-duty trucks 6,000 lbs. GVWR and under, and 3,751-5,750 lbs. LVW	0.05	0.400	0.020
Light-duty trucks 6,001-8,500 lbs. GVWR; and Medium-duty passenger vehicles	0.05	0.500	0.020
Medium-duty vehicles (8,501-14,000 lbs. GVWR); and Heavy-duty vehicles (over 14,000 lbs. GVWR)	0.05	0.600	0.030

[1] Organic Material Hydrocarbon Equivalent for alcohol-fueled vehicles.

[2] ~~Except as provided below, f~~For ~~all~~ vehicles certified to the running loss and the highest whole vehicle diurnal plus hot soak emission~~these~~ standards, the "useful life" shall be 15 years or 150,000 miles, whichever occurs first. ~~For 2016 and previous model vehicles, 2017 and previous model vehicles >6,000 lbs. GVWR, and 2021 and previous model vehicles certified by a small volume manufacturer, the canister bleed standards are certification standards only. Manufacturers are not required to establish deterioration factors for canister bleed emissions.~~ Approval of vehicles that are not exhaust emission tested using a chassis dynamometer pursuant to section 1961, title 13, California Code of Regulations shall be based on an engineering evaluation of the system and data submitted by the applicant. The canister bleed emission standard does not have a useful life requirement.

[3] The manufacturer shall determine compliance by selecting the highest whole vehicle diurnal plus hot soak emission value of the Three-Day Diurnal Plus Hot Soak Test and of the Two-Day Diurnal Plus Hot Soak Test.

[4] *Fleet-Average Option for the Highest Whole Vehicle Diurnal Plus Hot Soak Emission Standard Within Each Emission Standard Category.* A manufacturer may optionally comply with the highest whole vehicle diurnal plus hot soak emission standards by using fleet-average hydrocarbon emission values. To participate, a manufacturer must utilize the fleet-average option for all of its emission standard categories and calculate a separate fleet-average hydrocarbon emission value for each emission standard category. The emission standard categories are as follows: (1) passenger cars and light-duty trucks 6,000 pounds GVWR and under, and 0-3,750 pounds LVW; (2) light-duty trucks 6,000 pounds GVWR and under, and 3,751-5,750 pounds LVW; (3) light-duty trucks 6,001-8,500 pounds GVWR and medium-duty passenger vehicles; and (4) medium-duty and heavy-duty vehicles. The fleet-average hydrocarbon emission value for each emission standard category shall be calculated as follows:

$$\frac{\sum_{i=1}^{n}[(\text{number of vehicles in the evaporative family})_i \times (\text{family emission limit})_i]}{\sum_{i=1}^{n}(\text{number of vehicles in the evaporative family})_i}$$

where "n" = a manufacturer's total number of Option 2 certification evaporative families within an emission standard category for a given model year;

"number of vehicles in the evaporative family" = the number of vehicles produced and delivered for sale in California in the evaporative family;

"family emission limit" = the numerical value selected by the manufacturer for the evaporative family that serves as the emission standard for the evaporative family with respect to all testing, instead of the emission standard specified in this section 1976.0.1 (b)(1)(G)1.b. The family emission limit shall not exceed 0.500 grams per test for passenger cars; 0.650 grams per test for light duty trucks 6,000 pounds GVWR and under; 0.900 grams per test for light-duty trucks 6,001-8,500 pounds GVWR; and 1.000 grams for medium-duty passenger vehicles, medium-duty vehicles, and heavy-duty vehicles. In addition, the family emission limit shall be set in increments of 0.025 grams per test.

[5] *Calculation of Hydrocarbon Credits or Debits for the Fleet-Average Option.*

(1) *Calculation of Hydrocarbon Credits or Debits.* For each emission standard category in the model year, a manufacturer shall calculate the hydrocarbon credits or debits, as follows:

[(Applicable Hydrocarbon Emission Standard for the Emission Standard Category) -- (Manufacturer's Fleet-Average Hydrocarbon Emission Value for the Emission Standard Category)] X (Total Number of Affected Vehicles)

where "Total Number of Affected Vehicles" = the total number of vehicles in the evaporative families participating in the fleet-average option, which are produced and delivered for sale in California, for the emission standard category of the given model year.

A negative number constitutes hydrocarbon debits, and a positive number constitutes hydrocarbon credits accrued by the manufacturer for the given model year. Hydrocarbon credits earned in a given model year shall retain full value through the fifth model year after they are earned. At the beginning of the sixth model year, the hydrocarbon credits will have no value.

(2) *Procedure for Offsetting Hydrocarbon Debits.* A manufacturer shall offset hydrocarbon debits with hydrocarbon credits for each emission standard category within three model years after the debits have been incurred. If total hydrocarbon debits are not equalized within three model years after they have been incurred, the manufacturer shall be subject to the Health and Safety Code section 43211 civil penalties 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 hydrocarbon debits are not equalized by the end of the specified time period. For the purposes of Health and Safety Code section 43211, the number of vehicles not meeting the state board's emission standards shall be determined by dividing the total amount of hydrocarbon debits for the model year in the emission standard category by the applicable hydrocarbon emission standard for the model year in which the debits were first incurred.

Additionally, to equalize the hydrocarbon debits that remain at the end of the three model year offset period: (1) hydrocarbon credits may be exchanged between passenger cars and light-duty trucks 6,000 pounds GVWR and under and 0-3,750 pounds LVW, and light-duty trucks 6,000 pounds GVWR and under and 3,751-5,750 pounds LVW and (2) hydrocarbon credits may be exchanged between light-duty trucks 6,001-8,500 pounds GVWR and medium-duty passenger vehicles, and medium-duty vehicles and heavy-duty vehicles.

[6] *Vehicle Canister Bleed Emission.* Compliance with the canister bleed emission standard shall be determined based on the Bleed Emission Test Procedure described in the "California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles," incorporated by reference in section 1976(c), and demonstrated on a stabilized canister system. Vehicles with a non-integrated refueling canister-only system are exempt from the canister bleed emission standard.

2. *Phase-In Schedule.* For each model year, a manufacturer shall certify, at a minimum, the specified percentage of its vehicle fleet to the evaporative emission standards set forth in section 1976(b)(1)(G)1.a. or section 1976(b)(1)(G)1.b., according to the schedule set forth below. For the purpose of this section 1976(b)(1)(G)2., the manufacturer's vehicle fleet consists of the vehicles produced and delivered for sale by the manufacturer in California that are subject to the emission standards in section 1976(b)(1)(G)1. All 2015 through 2022 model motor vehicles that are not subject to these standards pursuant to the phase-in schedule shall comply with the requirements for 2004 through 2014 model motor vehicles, as described in section 1976(b)(1)(F)~~, or the optional zero-fuel evaporative emission standards for 2001 through 2014 model motor vehicles, as described in section 1976(b)(1)(E)~~.

Model Years 2015, 2016, and 2017	***Minimum Percentage of Vehicle Fleet[12] Average of vehicles certified to section 1976(b)(1)(E) in model years 2012, 2013, and 2014[(3)(4)]***
2018 and 2019	60
2020 and 2021	80
2022 and subsequent	100

[1] For the 2018 through 2022 model years only, a manufacturer may use an alternate phase-in schedule to comply with the phase-in requirements. An alternate phase-in schedule must achieve equivalent compliance volume by the end of the last model year of the scheduled phase-in (2022). The compliance volume is the number calculated by multiplying the percent of vehicles (based on the manufacturer's projected sales volume of all vehicles~~vehicles produced and delivered for sale by the manufacturer in California~~) meeting the new requirements in each model year by the number of years implemented prior to and including the last model year of the scheduled phase-in, then summing these yearly results to determine a cumulative total. The cumulative total of the five year (60/60/80/80/100) scheduled phase-in set forth above is calculated as follows: (60*5 years) + (60*4 years) + (80*3 years) + (80*2 years) + (100*1 year) = 1040. Accordingly, the required cumulative total for any alternate phase-in schedule of these emission standards is 1040. The Executive Officer shall consider acceptable any alternate phase-in schedule that results in an equal or larger cumulative total by the end of the last model year of the scheduled phase-in (2022).

[2] Small volume manufacturers are not required to comply with the phase-in schedule set forth in this table. Instead, they shall certify 100 percent of their 2022 and subsequent model year vehicle fleet to the evaporative emission standards set forth in section 1976(b)(1)(G)1.a. or section 1976(b)(1)(G)1.b.

[3] The percentage of vehicle fleet averaged across the 2015, 2016, and 2017 model years shall be used to determine compliance with this requirement.

[4] The minimum percentage required in the 2015, 2016, and 2017 model years is determined by averaging the percentage of vehicles certified to the emission standards in section 1976(b)(1)(E) in each of the manufacturer's 2012, 2013, and 2014 model year vehicle fleets. For the purpose of calculating this average, a manufacturer shall use the percentage of vehicles produced and delivered for sale in California for the 2012, 2013, and 2014 model years. A manufacturer may calculate this average percentage using the projected sales for these model years in lieu of actual sales.

3. *Carry-Over of 2014 Model-Year Evaporative Families Certified to the Zero-Fuel Evaporative Emission Standards.* A manufacturer may carry over 2014 model motor vehicles certified to the zero-fuel (0.0 grams per test) evaporative emission standards set forth in section 1976(b)(1)(E) through the 20182~~2019~~ model year and be considered compliant with the requirements of section 1976(b)(1)(G)1. For all motor vehicles that are certified via this carry-over provision, the emission standards set forth in section 1976(b)(1)(E) shall apply when determining in-use compliance throughout the vehicle's useful life. If the manufacturer chooses to participate in the fleet-average option for the highest whole vehicle diurnal plus hot soak emission standard, the following family emission limits are assigned to these evaporative families for the calculation of the manufacturer's fleet-average hydrocarbon emission value.

Vehicle Type	***Highest Whole Vehicle Diurnal + Hot Soak (grams per test)***
Passenger cars	0.300
Light-duty trucks 6,000 lbs. GVWR and under, and 0-3,750 lbs. LVW	0.300
Light-duty trucks 6,000 lbs. GVWR and under, and 3,751-5,750 lbs. LVW	0.400
Light-duty trucks 6,001-8,500 lbs. GVWR	0.500

4. *Pooling Provision.* The following pooling provision applies to the fleet-average option for the Highest Whole Vehicle Diurnal Plus Hot Soak Emission Standard in section 1976(b)(1)(G)1.b. and to the phase-in requirements in section 1976(b)(1)(G)2.

   a. For the fleet-average option set forth in section 1976(b)(1)(G)1.b., a manufacturer must demonstrate compliance, for each model year, based on one of two options applicable throughout the model year, either:

      Pooling Option 1: the total number of passenger cars, light-duty trucks, medium-duty passenger vehicles, medium-duty vehicles, and heavy-duty vehicles that are certified to the California evaporative emission standards in section 1976(b)(1)(G)1.b., and are produced and delivered for sale in California; or

Pooling Option 2: the total number of passenger cars, light-duty trucks, medium-duty passenger vehicles, medium-duty vehicles, and heavy-duty vehicles that are certified to the California evaporative emission standards in section 1976(b)(1)(G)1.b., and are produced and delivered for sale in California, the District of Columbia, and all states that have adopted California's evaporative emission standards set forth in section 1976(b)(1)(G)1. for that model year pursuant to section 177 of the federal Clean Air Act (42 U.S.C. § 7507).

b. For the phase-in requirements in section 1976(b)(1)(G)2., a manufacturer must demonstrate compliance, for each model year, based on one of two options applicable throughout the model year, either:

Pooling Option 1: the total number of passenger cars, light-duty trucks, medium-duty passenger vehicles, medium-duty vehicles, and heavy-duty vehicles that are certified to the California evaporative emission standards in section 1976(b)(1)(G)1., and are produced and delivered for sale in California; or

Pooling Option 2: the total number of passenger cars, light-duty trucks, medium-duty passenger vehicles, medium-duty vehicles, and heavy-duty vehicles that are certified to the California evaporative emission standards in section 1976(b)(1)(G)1., and are produced and delivered for sale in California, the District of Columbia, and all states that have adopted California's evaporative emission standards set forth in section 1976(b)(1)(G)1. for that model year pursuant to section 177 of the federal Clean Air Act (42 U.S.C. § 7507).

c. A manufacturer that selects Pooling Option 2 must notify the Executive Officer of that selection in writing before the start of the applicable model year or must comply with Pooling Option 1. Once a manufacturer has selected Pooling Option 2, that selection applies unless the manufacturer selects Option 1 and notifies the Executive Officer of that selection in writing before the start of the applicable model year.

d. When a manufacturer is demonstrating compliance using Pooling Option 2 for a given model year, the term "in California" as used in section 1976(b)(1)(G) means California, the District of Columbia, and all states that have adopted California's evaporative emission standards for that model year pursuant to Section 177 of the federal Clean Air Act (42 U.S.C. § 7507).

e. A manufacturer that selects Pooling Option 2 must provide to the Executive Officer separate values for the number of vehicles in each evaporative family produced and delivered for sale in the District of Columbia and for each individual state within the average.

5. Optional Certification for 2014 Model Motor Vehicles. A manufacturer may optionally certify its 2014 model motor vehicles to the evaporative emission standards set forth in section 1976(b)(1)(G)1.

~~6. *Effective leak diameter standard and procedure.* Manufacturers shall demonstrate that for 2018 and subsequent model vehicles ≤ 14,000 lbs. GVWR certifying to the evaporative emission standards set forth in 1976(b)(1)(G), fuel systems do not exceed an effective leak diameter of 0.02 inches when tested in accordance with the test procedure sequence described in the "California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles," incorporated by reference in section 1976(c). This requirement does not apply to 2021 and previous model vehicles certified by a small volume manufacturer. For vehicles with fuel tanks exceeding 25 gallons nominal fuel tank capacity, manufacturers may request approval from the Executive Officer for a leak standard greater than 0.020 inches, up to a maximum value of 0.040 inches.~~

~~7. *Auxiliary engines and fuel systems. Auxiliary engines and fuel systems.* For 2017 and subsequent model vehicles ≤6,000 lbs. GVWR equipped with an auxiliary engine and 2018 and subsequent model vehicles >6,000 lbs. GVWR equipped with an auxiliary engine, manufacturers shall demonstrate compliance in accordance with the provisions set forth in the "California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles," incorporated by reference in section 1976(c). These requirements do not apply to 2021 and previous model vehicles certified by a small volume manufacturer.~~

(b) (2) Evaporative emissions for gasoline-fueled motorcycles subject to exhaust emission standards under this article shall not exceed:

Motorcycle Class	***Model Year***	***Hydrocarbons (grams per test)***
Class I and II (50-279cc)	1983 and 1984	6.0
	1985 and subsequent	2.0
Class III (280cc and larger)	1984 and 1985	6.0
	1986 and subsequent	2.0
Class III (280cc and larger) (Optional Standard for Small-Volume Motorcycle Manufacturers)	1986-1988	6.0

(c) The test procedures for determining compliance with the standards in subsection (b) above applicable to 1978 through 2000 model year vehicles are set forth in "California Evaporative Emission Standards and Test Procedures for 1978-2000 Model Motor Vehicles," adopted by the state board on April 16, 1975, as last amended August 5, 1999, which is incorporated herein by reference. The test procedures for determining compliance with standards applicable to 2001 and subsequent model year vehicles are set forth in the "California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles," adopted by the state board on August 5, 1999, and as last amended December 6, 2012, which is incorporated herein by reference.

(d) Motorcycle engine families certified to 0.2 grams per test or more below the applicable standards shall be exempted from the state board's "Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks" pursuant to section 2235, Title 13, California Code of Regulations.

(e) Small volume motorcycle manufacturers electing to certify 1986, 1987, or 1988 model-year Class III motorcycles in accordance with the optional 6.0 grams per test evaporative emission standard shall submit, with the certification application, a list of the motorcycle models for which it intends to seek California certification and estimated sales data for such models. In addition, each such manufacturer shall, on or before July 1 of each year in which it certifies motorcycles under the optional standard, submit a report describing its efforts and progress toward meeting the more stringent evaporative emission standards. The report shall also contain a description of the manufacturer's current hydrocarbon evaporative emission control development status, along with supporting test data, and shall summarize future planned development work.

(f) Definitions Specific to this Section.

(1) For purposes of this section, "small volume motorcycle manufacturer" means a manufacturer which sells less than 5,000 new motorcycles per year in California.

(2) For the purposes of this section, "ultra-small volume manufacturer" means any vehicle manufacturer with California sales less than or equal to 300 new vehicles per model year based on the average number of vehicles sold by the manufacturer in the previous three consecutive model years, and "small volume manufacturer" means, for 1978 through 2000 model years, any vehicle manufacturer with California sales less than or equal to 3000 new vehicles per model year based on the average number of vehicles sold by the manufacturer in the previous three consecutive model years. For 2001 and subsequent model motor vehicles, "small volume manufacturer" has the meaning set forth in section 1900(a).

(3) "Non-integrated refueling emission control system" is defined in 40 Code of Federal Regulations § 86.1803-01.

(4) "Non-integrated refueling canister-only system" means a subclass of a non-integrated refueling emission control system, where other non-refueling related evaporative emissions from the vehicle are stored in the fuel tank, instead of in a vapor storage unit(s).

NOTE: Authority cited: Sections 39500, 39600, 39601, 39667, 43013, 43018, 43101, 43104, 43105, 43106 and 43107, Health and Safety Code. Reference: Sections 39002, 39003, 39500, 39667, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43107, 43204 and 43205, Health and Safety Code.

§ 1978.0.1. Standards and Test Procedures for Vehicle Refueling Emissions. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

(a) (1) Vehicle refueling emissions for 1998 and subsequent model gasoline-fueled, alcohol-fueled, diesel-fueled, liquefied petroleum gas-fueled, fuel-flexible, and hybrid electric passenger cars, light-duty trucks, and medium-duty vehicles with a gross vehicle weight rating less than 8501 pounds, and 2015 and subsequent model gasoline-fueled, alcohol-fueled, diesel-fueled, liquefied petroleum gas-fueled, fuel-flexible, and hybrid electric medium-duty vehicles with a gross vehicle weight rating between 8,501 and 14,000 pounds, ~~and 2022 and subsequent model gasoline-fueled, alcohol-fueled, diesel-fueled, liquefied petroleum gas-fueled, fuel-flexible, and hybrid electric heavy-duty vehicles with a gross vehicle weight rating greater than 14,000 pounds~~ shall not exceed the following standards. Natural gas-fueled vehicles are exempt from meeting these refueling standards, but the refueling receptacles on natural gas-fueled vehicles must comply with the receptacle provisions of the American National Standards Institute/American Gas Association Standard for Compressed Natural Gas Vehicle Fueling Connection Devices, ANSI/AGA NGV1 ~~2006~~ standard-1994, which is incorporated herein by reference. The standards apply equally to certification and in-use vehicles.

Hydrocarbons (for gasoline-fueled, diesel-fueled, and hybrid electric vehicles): 0.20 grams per gallon of fuel dispensed.

Organic Material Hydrocarbon Equivalent (for alcohol-fueled, fuel-flexible, and hybrid electric vehicles): 0.20 grams per gallon of fuel dispensed. Hydrocarbons (for liquefied petroleum gas-fueled vehicles): 0.15 gram per gallon of fuel dispensed.

(2) Vehicles powered by diesel fuel are not required to conduct testing to demonstrate compliance with the refueling emission standards set forth above, provided that all of the following provisions are met:

(A) The manufacturer can attest to the following evaluation: "Due to the low vapor pressure of diesel fuel and the vehicle tank temperatures, hydrocarbon vapor concentrations are low and ~~that~~ the vehicle meets the 0.20 grams/gallon refueling emission standard without a control system."; ~~and~~

(B) The certification requirement described in paragraph (A) is provided in writing and applies for the full useful life of the vehicle, as defined in section 2112.

In addition to the above provisions, the ARB reserves the authority to require testing to enforce compliance and to prevent noncompliance with the refueling emission standard.

Vehicles certified to the refueling emission standard under this provision shall not be counted in the phase-in sales percentage compliance determinations.

(3) Through model year 2014, the manufacturer shall adhere to the following phase-in schedule, as determined by projected vehicle sales throughout the United States, with the exception of small volume manufacturers.

ORVR Model Year Phase-in Schedule			
Class of Vehicle	***40% Fleet***	80% Fleet	100% Fleet
Passenger Cars	1998	1999	2000
Light-Duty Trucks 0-6,000 lbs. GVWR	2001	2002	2003
Light-Duty Trucks/ Medium-Duty Vehicles (6,001-8,500 lbs. GVWR)	2004	2005	2006

(A) Prior to the 2001 model year, small volume manufacturers are defined for purposes of this section as any vehicle manufacturer with California actual sales less than or equal to 3000 new vehicles per model year based on the average number of vehicles sold by the manufacturer in the previous three consecutive years.

(B) Small volume manufacturers of passenger cars, as defined in subsection (a)(3)(A), are exempt from the implementation schedule in subsection (a)(3) for model year 1998 and 1999. For small volume manufacturers of passenger cars, the standards of subsection (a)(1), and the associated test procedures, shall not apply until model year 2000, when 100 percent compliance with the standards of this section is required. Small volume manufacturers of light-duty trucks and medium-duty vehicles are not exempt from the implementation schedule in subsection (a)(3).

(4) Beginning with model year 2015, aAll vehicles subject to the refueling emission standards in section 1978(a)(1) shall demonstrate compliance except incomplete vehicles of 14,000 pounds gross vehicle weight rating or less that are certified as incomplete vehicles for the purposes of evaporative emissions testing as set forth in the "California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles," incorporated by reference in section 1976.

(5) *Carry-Over of 2014 Model Year Families:* 2014 model year motor vehicles certified to the refueling emission standards of section 1978(a)(1) may carry over to the 2015 through 2018 model years and be considered compliant.

(b) The test procedures for determining compliance with standards applicable to 1998 through 2000 gasoline, alcohol, diesel, and hybrid electric passenger cars, light-duty trucks, and medium-duty vehicles are set forth in the "California Refueling Emission Standards and Test Procedures for 1998-2000 Model Year Motor Vehicles," as amended August 5, 1999, which is incorporated herein by reference. The test procedures for determining compliance with standards applicable to 2001 and subsequent gasoline, alcohol, diesel, and hybrid electric passenger cars, light-duty trucks, and medium-duty vehicles are set forth in the "California Refueling Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles," adopted August 5, 1999, and last amended March 22, 2012, which is incorporated herein by reference.

NOTE: Authority cited: Sections 39500, 39600, 39601, 39667, 43013, 43018, 43101, 43104, 43105 and 43106, Health and Safety Code. Reference: Sections 39002, 39003, 39500, 39667, 43000, 43009.5, 43013, 43018, 43101, 43101.5, 43102, 43104, 43105, 43106, 43204 and 43205 Health and Safety Code.

§ 2037.0.1. Defects Warranty Requirements for 1990 and Subsequent Model Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, and Motor Vehicle Engines Used in Such Vehicles. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

(a) Applicability.

This section shall apply to 1990 and subsequent model passenger cars, light-duty trucks, medium-duty vehicles, and motor vehicle engines used in such vehicles. This section shall apply to medium-duty vehicles certified to the GHG emission standards of section 95663, title 17, for GHG emission control components, as set forth in 40 CFR 1037.120, as adopted November 14, 2011. The warranty period shall begin on the date the vehicle is delivered to an ultimate purchaser, or if the vehicle is first placed in service as a "demonstrator" or "company" car prior to delivery, on the date it is first placed in service.

(b) General Emissions Warranty Coverage.

The manufacturer of each motor vehicle or motor vehicle engine shall warrant to the ultimate purchaser and each subsequent purchaser that the vehicle or engine is:

(1) Designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board pursuant to its authority in chapters 1 and 2, part 5, division 26 of the Health and Safety Code; and

(2) Free from defects in materials and workmanship which cause the failure of a warranted part to be identical in all material respects to the part as described in the vehicle or engine manufacturer's application for certification, including any defect in materials or workmanship which would cause the vehicle's on-board diagnostic malfunction indicator light to illuminate, for a period of three years or 50,000 miles, whichever first occurs; and

(3) Free from defects in materials and workmanship which cause the failure of a warranted part described in section (c) below for seven years or 70,000 miles, whichever first occurs.

(c) "High-Priced" Warranted Parts.

(1) Each manufacturer shall identify in its application for certification the "high-priced" warranted parts which are:

(A) For 1990 through 2007 model year vehicles: [i] included on the Board's "Emissions Warranty Parts List" as last amended February 22, 1985, incorporated herein by reference, and; [ii] have an individual replacement cost at the time of certification exceeding the cost limit defined in section (c)(3);

(B) For 2008 and subsequent model year vehicles: [i] subject to coverage as a warranted part in section (b)(2) above, and; [ii] have an individual replacement cost at the time of certification exceeding the cost limit defined in section (c)(3).

(2) The replacement cost shall be the retail cost to a vehicle owner and include the cost of the part, labor, and standard diagnosis. The costs shall be those of the highest-cost metropolitan area of California.

(3) The cost limit shall be calculated using the following equation:

$\text{Cost limit}_n = \$300 \times (\text{CPI}_{n-2} / 118.3)$ where:

Cost limit_n is the cost limit for the applicable model year of the vehicle rounded to the nearest ten dollars.

n is the model year of the new vehicles.

n-2 is the calendar year two years prior to the model year of the new vehicles.

CPI is the annual average nationwide urban consumer price index published by the United States Bureau of Labor Statistics.

(4) The cost limit shall be revised annually by the Executive Officer. The highest-cost metropolitan area in California shall be identified by the Executive Officer for use in this section. If a manufacturer seeks certification of a vehicle before the applicable annual average CPI is available, the cost limit shall be calculated using the average of the monthly nationwide urban CPI figures for the most recent twelve month period for which figures have been published by the United States Bureau of Labor Statistics.

(5) Each manufacturer shall submit to the Executive Officer the documentation used to identify the "high-priced" warranted parts required in this section. The documentation shall include the estimated retail parts costs, labor rates in dollars per hour, and the labor hours necessary to diagnose and replace the parts. The documentation is not required for vehicles certified before January 24, 1991.

(6) The Executive Officer may reject or require modification of the manufacturer's list of "high-priced" warranted parts to ensure that such list includes all emission-related parts whose replacement cost exceeds the cost limit defined in section (c)(3).

(d) Subject to the conditions and exclusions of section (i), the warranty on emission-related parts shall be interpreted as follows:

(1) Any warranted part which is not scheduled for replacement as required maintenance in the written instructions required by section (e) shall be warranted for the applicable warranty period defined in section (b)(2) or (3). If any such part fails during the period of warranty coverage, it shall be repaired or replaced by the vehicle or engine manufacturer according to section (d)(4) below. Any such part repaired or replaced under the warranty shall be warranted for the remaining warranty period.

(2) Any warranted part which is scheduled only for regular inspection in the written instructions required by section (e) shall be warranted for the applicable warranty period defined in section (b)(2) or (3). A statement in such written instructions to the effect of "repair or replace as necessary" shall not reduce the period of warranty coverage. Any such part required or replaced under warranty shall be warranted for the remaining warranty period.

(3) Any warranted part which is scheduled for replacement as required maintenance in the written instructions required by section (e) shall be warranted for the period of time or mileage, whichever first occurs, prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part shall be repaired or replaced by the vehicle or engine manufacturer according to section (d)(4) below. Any such part required or replaced under warranty shall be warranted for the remainder of the period prior to the first scheduled replacement point for the part.

(4) Repair or replacement of any warranted part under the warranty provisions of this article shall be performed at no charge to the vehicle or engine owner at a warranty station, except in the case of an emergency when a warranted part or a warranty station is not reasonably available to the vehicle or engine owner. In an emergency, repairs may be performed at any available service establishment, or by the owner, using any replacement part. The manufacturer shall reimburse the owner for his or her expenses including diagnostic charges for such emergency repair or replacement, not to exceed the manufacturer's suggested retail price for all warranted parts replaced and labor charges based on the manufacturer's recommended time allowance for the warranty repair and the geographically appropriate hourly labor rate. A vehicle or engine owner may reasonably be required to keep receipts and failed parts in order to receive compensation for warranted repairs reimbursable due to an emergency, provided the manufacturer's written instructions required by section (e) advise the owner of this obligation.

(5) Notwithstanding the provisions of subsection (d)(4) above, warranty services or repairs shall be provided at all of a manufacturer's dealerships which are franchised to service the subject vehicles or engines.

(6) The vehicle or engine owner shall not be charged for diagnostic labor which leads to the determination that a warranted part is defective, provided that such diagnostic work is performed at a warranty station.

(7) The vehicle or engine manufacturer shall be liable for damages to other vehicle components proximately caused by a failure under warranty of any warranted part.

(8) Throughout the vehicle or engine's warranty period defined in section (b)(2) and (b)(3), the vehicle or engine manufacturer shall maintain a supply of warranted parts sufficient to meet the expected demand for such parts. The lack of availability of such parts or the incompleteness of repairs within a reasonable time period, not to exceed 30 days from the time the vehicle or engine is initially presented to the warranty station for repair, shall constitute an emergency for purposes of section (d)(4) above.

(9) Any replacement part may be used in the performance of any maintenance or repairs. Any replacement part designated by a manufacturer may be used in warranty repairs provided without charge to the vehicle owner. Such use shall not reduce the warranty obligations of the vehicle or engine manufacturer, except that the vehicle or engine manufacturer shall not be liable under this article for repair or replacement of any replacement part which is not a warranted part (except as provided under section (d)(7) above).

(10) Any add-on or modified part exempted by the Air Resources Board from the prohibitions of Vehicle Code section 27156 may be used on a vehicle or engine. Such use, in and of itself, shall not be grounds for disallowing a warranty claim made in accordance with this article. The vehicle or engine manufacturer shall not be liable under this article to warrant failures of warranted parts caused by the use of such an add-on or modified part.

(11) The Executive Officer may request and, in such case, the vehicle or engine manufacture shall provide, any documents which describe the manufacturer's warranty procedures or policies.

(e) Each manufacturer shall furnish with each new vehicle or engine, written instructions for the maintenance and use of the vehicle or engine by the owner, and the instructions shall be consistent with this article and applicable regulations in article 2 of this subchapter.

(f) Each manufacturer shall furnish with each new vehicle or engine a list of the "high-priced" warranted parts established by section (c).

(g) Prior to the 2001 model year, each manufacturer shall submit the documents required by sections (c)(5), (e), and (f) with the manufacturer's preliminary application for new vehicle or engine certification for approval by the Executive Officer. For 2001 and subsequent model years, each manufacturer shall submit the documents required by section (c)(5), (e), and (f) with the Part 2 Application for Certification pursuant to 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 title 13, CCR section 1961(d), or the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," incorporated by reference in title 13, CCR section 1961.2(d), as applicable. The Executive Officer may reject or require modification of any of the documents required by sections (c), (e), and (f) for, among other reasons, incompleteness and lack of clarity. Approval by the Executive Officer of the documents required by sections (c), (e), and (f) shall be a condition of certification. The Executive Officer shall approve or disapprove the documents required by sections (c), (e), and (f) within 90 days of the date such documents are received from the manufacturer. Any disapproval shall be accompanied by a statement of the reasons thereof. In the event of disapproval, the manufacturer may petition the Board to review the decision of the Executive Officer.

(h) *Vehicle Inspection Program.*

(1) This section applies to 1990 and subsequent model passenger cars, light-duty trucks, and medium-duty vehicles which fail to pass a smog check inspection pursuant to Health and Safety Code section 44012 after the warranty period of three years or 50,000 miles, whichever occurs first, has expired, but before the warranty period of seven years or 70,000 miles, whichever occurs first, has expired. The provisions of this section shall be contained in the warranty statement required pursuant to title 13, CCR section 2039.

(2) The owner of a vehicle which fails an inspection during the period described in section (h)(1) may choose to have the vehicle repaired at a warranty station.

(A) If the warranty station identifies that the inspection failure was caused by the failure or malfunction of a "high-priced" part defined in section (c), then the vehicle manufacturer shall be liable for expenses involved in detecting and correcting the part failure or malfunction, unless the warranty station demonstrates that the part failure or malfunction was caused by abuse, neglect, or improper maintenance as specified in section (i).

(B) If the warranty station demonstrates that the inspection failure was caused by one or more conditions excluded from warranty coverage pursuant to section (i), the vehicle owner shall be liable for all diagnostic and repair expenses. Such expenses shall not exceed the maximum repair costs permissible under the inspection program.

(C) If the warranty station determines that the inspection failure was caused by one or more defects covered under warranty pursuant to these regulations and in combination with one or more conditions excluded from warranty coverage pursuant to section (i), then the vehicle owner shall not be charged for the diagnostic and repair costs related to detecting and repairing the warrantable defects.

(3) In the alternative, the owner of a vehicle which fails the inspection may choose to have the vehicle repaired at other than a warranty station. If a warrantable defect is found, the vehicle owner may deliver the vehicle to a warranty station and have the defect corrected free of charge. The vehicle manufacturer shall not be liable for any expenses incurred at a service establishment not authorized to perform warranty repairs, except in the case of an emergency as defined in section (d)(4). If the vehicle owner chooses to have a warrantable defect repaired at other than a warranty station, the upper cost limit pursuant to Health and Safety Code section 44017 shall not apply to the repair.

(i) Exclusions.

The repair or replacement of any warranted part otherwise eligible for warranty coverage under sections (d) and (h) shall be excluded from such warranty coverage if the vehicle or engine manufacturer demonstrates that the vehicle or engine has been abused, neglected, or improperly maintained, and that such abuse, neglect, or improper maintenance was the direct cause of the need for the repair or replacement of the part.

Note: Authority cited: Sections 38501, 38505, 38510, 38560, 39600 and 39601, Health and Safety Code. Reference: Sections 38501, 38505, 38510, 38560, 43106, 43204, 43205, 44004, 44010, 44011, 44012, 44015 and 44017, Health and Safety Code.

§ 2038.0.1. Performance Warranty Requirements for 1990 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, and Motor Vehicle Engines Used in Such Vehicles. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

(a) Applicability.

This section shall apply to 1990 and subsequent model passenger cars, light-duty trucks, and medium-duty vehicles, and motor vehicle engines used in such vehicles required to be inspected under any California statutorily authorized motor vehicle emissions inspection and maintenance program. The warranty period shall begin on the date the vehicle is delivered to an ultimate purchaser, or if the vehicle is first placed in service as a "demonstrator" or "company" car prior to delivery, on the date it is first placed in service.

(b) General Emissions Warranty Coverage.

The manufacturer of each passenger car, light-duty truck, and medium-duty vehicle shall warrant to the ultimate purchaser and each subsequent purchaser that the vehicle or engine:

(1) Is designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board pursuant to its authority in chapters 1 and 2, part 5, division 26 of the Health and Safety Code; and

(2) Will, for a period of three years or 50,000 miles, whichever first occurs, pass an inspection established under section 44012 of the Health and Safety Code ("inspection").

(c) Written Instructions.

(1) Each vehicle or engine manufacturer shall furnish with each new vehicle or engine, written instructions for the required maintenance and use of this vehicle or engine by the vehicle owner (written instructions), and the written instructions shall be consistent with this article and applicable regulations in article 2 of this subchapter.

(2) Prior to the 2001 model year, each vehicle or engine manufacturer shall submit the documents required by section (c)(1) with the vehicle or engine manufacturer's preliminary application for new vehicle or engine certification for approval by the Executive Officer.

(3) For 2001 and subsequent model years, each vehicle or engine manufacturer shall submit the documents required by section (c)(1) with the Part 2 Application for Certification pursuant to 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 title 13, CCR section 1961(d), or the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," incorporated by reference in title 13, CCR section 1961.2(d), as applicable.

(4) The Executive Officer may reject or require modification of written instructions for, among other reasons, incompleteness or lack of clarity. Approval by the Executive Officer of the written instructions shall be a condition of certification. The Executive Officer shall approve or disapprove the written instructions within 90 days of the date such documents are received from the vehicle or engine manufacturer. Any disapproval shall be accompanied by a statement of the reasons therefore. In the event of disapproval, the engine or vehicle manufacturer may petition the Board to review the decision of the Executive Officer.

(d) Proper Use and Maintenance.

(1) An emission performance warranty claim may be denied if the vehicle or engine manufacturer demonstrates that the vehicle or engine's failure of the inspection was directly caused by abuse, neglect, or improper maintenance as reflected by a failure to maintain or use the vehicle or engine in accordance with the written instructions.

(2) Except as provided in section (d)(5), a vehicle or engine manufacturer may deny an emission performance warranty claim on the basis of noncompliance with the written instructions only if:

(A) An owner is not able to comply with a request by a manufacturer for evidence pursuant to section (d)(4); or

(B) Notwithstanding the evidence presented pursuant to section (d)(4), the vehicle or engine manufacturer is able to prove that the vehicle failed an inspection because the vehicle was abused, the required maintenance and use was performed in a manner resulting in a component being improperly installed or a component or related parameter being adjusted substantially outside of the vehicle or engine manufacturer's specifications, or maintenance was performed on a vehicle which resulted in the removing or rendering inoperative of any component affecting the vehicle's emissions.

(3) When determining whether an owner has complied with the written instructions, a vehicle or engine manufacturer may require an owner to submit evidence of compliance only with those written instructions for which the vehicle or engine manufacturer has an objective reason for believing:

(A) Were not performed, and;

(B) If not performed, could be the cause of the particular vehicle's failed inspection.

(4) Evidence of compliance with a maintenance instruction may consist of:

(A) A maintenance log book which has been validated at the approximate time or mileage intervals specified in the written instructions by someone who regularly engages in the business of servicing automobiles for the relevant maintenance; or

(B) A repair order, sales receipt, or similar evidence showing that the vehicle has been submitted for scheduled maintenance at the approximate time or mileage intervals specified in the written instructions to someone who regularly engages in the business of servicing automobiles for the purpose of performing the relevant maintenance; or

(C) A statement by the vehicle owner that the maintenance was performed at the approximate time or mileage interval specified in the written instructions using proper replacement parts.

(5) In no case may a vehicle or engine manufacturer deny an emission performance warranty claim on the basis of:

(A) Warranty work or predelivery service performed by any facility authorized by the vehicle or engine manufacturer to perform such work or service; or

(B) Work performed in an emergency situation to rectify an unsafe condition, including an unsafe driveability condition, attributable to the vehicle or engine manufacturer, provided the vehicle owner has taken steps to put the vehicle back in a conforming condition in a timely manner; or

(C) Any cause attributable to the vehicle or engine manufacturer; or

(D) The use of any fuel which is commonly available in the geographical area in which the vehicle or engine is located, unless the written instructions specify that the use of that fuel would adversely affect the emission control devices and systems of the vehicle, and there is commonly available information for the vehicle owner to identify the proper fuel to be used.

(6) The vehicle owner may perform maintenance or have maintenance performed more frequently than required in the written instructions.

(7) Except as specified in section (d)(2)(B) above, failure of the vehicle or engine owner to ensure the performance of such scheduled maintenance or to keep maintenance records shall not, per se, be grounds for disallowing a warranty claim.

(e) Repair, adjustment, or replacement of any part under the warranty provisions of this article shall be performed at no charge to the vehicle or engine owner at a warranty station, except where a warranted part is not available to the vehicle or engine owner within a reasonable time (in no case more than 30 days) after the vehicle or engine is initially presented to the warranty station for repair. In case of such unavailability, repairs may be performed at any available service establishment, or by the owner, using any replacement part. The manufacturer shall reimburse the owner for his or her expenses including diagnostic charges for such repair or replacement, not to exceed the manufacturer's suggested retail price for all warranted parts replaced and labor charges based on the manufacturer's recommended time allowance for the warranty repair and the geographically appropriate hourly labor rate. A vehicle or engine owner may reasonably be required to keep receipts and failed parts in order to receive reimbursement due to such unavailability, provided the manufacturer's written instructions advise the owner of this obligation.

(f) The vehicle or engine manufacturer shall be liable for damages to other vehicle components proximately caused by a failure under warranty of any warranted part.

(g) Any replacement part may be used in the performance of any maintenance or repairs. Any replacement part designated by a vehicle or engine manufacturer may be used in warranty repairs provided without charge to the vehicle owner. Such use shall not reduce the warranty obligations of the vehicle or engine manufacturer, except that the vehicle or engine manufacturer shall not be liable under this article for repair or replacement of any replacement part which is not a warranted part (except as provided under section (d) above).

(h) Any add-on or modified part exempted by the Air Resources Board from the prohibitions of Vehicle Code section 27156 may be used on a vehicle or engine. Such use, in and of itself, shall not be grounds for disallowing a warranty claim made in accordance with this article. The vehicle or engine manufacturer shall not be liable under this article to warrant failures of warranted parts caused by the use of such an add-on or modified part.

(i) Warranty Claim Procedures.

(1) A warranty claim may be submitted by bringing a vehicle to any repair facility authorized by the vehicle or engine manufacturer to service that vehicle.

(2) The manufacturer of each vehicle or engine to which the warranty is applicable shall establish procedures as to the manner in which a claim under the emission performance warranty is to be processed. The procedures shall provide for a final decision and repair of a warrantable condition by the vehicle or engine manufacturer within a reasonable time, not to exceed 30 days from the time at which the vehicle is initially presented for repair, or unless a delay:

(A) is requested by the vehicle owner, or

(B) is caused by an event not attributable to the vehicle or engine manufacturer or the warranty station.

(3) Within the time period specified in section (i)(2), the manufacturer shall provide the owner, in writing, with an explanation as to why the claim is being denied.

(4) Failure to notify a vehicle owner that a warrantable condition does not exist within the required time period of section (i)(2), for reasons other than those provided for in sections (i)(2)(A) and (B), shall result in the vehicle or engine manufacturer being responsible for repairing the vehicle free of charge to the vehicle owner.

(5) The vehicle or engine manufacturer shall incur all costs associated with a determination that an emission performance warranty claim is valid.

(j) Warranty services or repairs shall be provided at all of a vehicle or engine manufacturer's dealerships which are franchised to service the subject vehicles or engines.

(k) The vehicle owner shall not be charged for diagnostic labor which leads to the determination of a warrantable condition provided that such diagnostic work is performed at a warranty station.

(l) Throughout the vehicle or engine's warranty period defined in section (b), the vehicle or engine manufacturer shall maintain a supply of warranted parts sufficient to meet the expected demand for such parts. The lack of availability of such parts or the incompleteness of the repairs within a reasonable time period, not to exceed 30 days from the time the vehicle or engine is initially presented to the warranty station for repair, shall constitute an unavailability of parts for purposes of section (e).

(m) The Executive Officer may request and, in such case, the vehicle or engine manufacturer shall provide, any documents which describe the vehicle or engine manufacturer's warranty procedures or policies.

Note: Authority cited: Sections 39600 and 39601, Health and Safety Code. Reference: Sections 43106, 43204, 43205, 44004, 44010, 44011, 44012, 44014 and 44015, Health and Safety Code.

§ 2112.0.1. Definitions. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

(a) "Capture rate" means the percentage of in-use vehicles subject to recall which must be corrected to bring the class or category of vehicles into compliance. The number of vehicles subject to recall shall be based on the actual number of vehicles in use as verified by the Department of Motor Vehicles registration records, or vehicle or engine registration records compiled and prepared by R. L. Polk and Company or a comparable source at the time a recall is initiated.

(b) "Correlation factor" means a pollutant-specific multiplicative factor calculated by a manufacturer for an engine family or test group which establishes a relationship between chassis exhaust emission data, as determined from the test procedures specified in section 1960.1, 1961, or 1961.2, Title 13, California Code of Regulations, and engine exhaust emission data, as determined from the test procedures specified in section 1956.8, Title 13, California Code of Regulations.

(c) "Days", when computing any period of time, means normal working days on which a manufacturer is open for business, unless otherwise noted.

(d) "Emission-Related Failure" means a failure of a device, system, or assembly described in the approved application for certification which affects any parameter, specification, or component enumerated in Appendix A to this subchapter 2.5 or listed in the Emission Warranty Parts List pursuant to section 2036, Title 13, California Code of Regulations, except for failures of devices, systems and assemblies which the Executive Officer has deleted from the manufacturer's list of warranted parts pursuant to section 2036(f), Title 13, California Code of Regulations.

(e) "Emission Warranty Claim" means an adjustment, inspection, repair or replacement of a specific emission-related component for which the vehicle or engine manufacturer is invoiced or solicited by a repairing agent for compensation pursuant to warranty provisions, regardless of whether compensation is actually provided.

(f) "Executive Officer" means the Executive Officer of the Air Resources Board or his or her authorized representative.

(g) "Influenced Emission Recall" means an inspection, repair, adjustment, or modification program initiated and conducted by a manufacturer or its agent or representative as a result of in-use enforcement testing or other evidence of noncompliance provided or required by the Board, to remedy any nonconformity for which direct notification of vehicle or engine owners is necessary.

(h) "Nonconformity" or "noncompliance" exists whenever:

(1) a substantial number of a class or category of vehicles or engines, although properly maintained and used, experience a failure of the same emission-related component within their useful lives which, if uncorrected, results in the vehicles' or engines' failure to meet the applicable standards; or

(2) a class or category of vehicles or engines within their useful lives, although properly maintained and used, on average does not comply with the emission standards prescribed under section 43101 or the Health and Safety Code which are applicable to the model-year of such vehicles or engines.

(i) "Ordered Emission Recall" means an inspection, repair, adjustment, or modification program required by the Board and conducted by the manufacturer or its agent or representative to remedy any nonconformity for which direct notification of vehicle or engine owners is necessary.

(j) "Quarterly reports" refer to the following calendar periods: January 1-March 31, April 1-June 30, July 1-September 30, October 1-December 31.

(k) "Ultimate purchaser" has the same meaning as defined in section 39055.5 of the Health and Safety Code.

(l) "Useful life" means, for the purposes of this article:

(1) For Class I motorcycles and motorcycle engines (50 to 169 cc or 3.1 to 10.4 cu. in.), a period of use of five years or 12,000 kilometers (7,456 miles), whichever first occurs.

(2) For Class II motorcycles and motorcycle engines (170 to 279 cc or 10.4 to 17.1 cu. in.), a period of use of five years or 18,000 kilometers (11,185 miles), whichever first occurs.

(3) For Class III motorcycles and motorcycle engines (280 cc and larger or 17.1 cu. in. and larger), a period of use of five years or 30,000 kilometers (18,641 miles), whichever first occurs.

(4) For 1982 through 1984 model-year diesel heavy-duty vehicles (except medium-duty vehicles), and 1982 through 1984 model-year motor vehicle engines used in such vehicles, a period of use of five years, 100,000 miles, or 3000 hours of operation, whichever first occurs.

(5) For 1982 through 1987 model-year gasoline heavy-duty vehicles (except medium-duty vehicles) certified using the steady-state emission standards and test procedures, and 1982 through 1987 model-year gasoline heavy-duty motor vehicle engines certified using the steady-state emission standards and test procedures, a period of use of five years or 50,000 miles, whichever first occurs.

(6) For 1987 through 2003 model-year gasoline heavy-duty vehicles (except medium-duty vehicles) certified to the transient emission standards and test procedures, and 1987 and subsequent model-year gasoline heavy-duty motor vehicle engines certified using the transient emission standards and test procedures, a period of use of eight years or 110,000 miles, whichever first occurs, except as noted in paragraph (13).

(7) For 1985 through 2003 model-year heavy-duty diesel urban buses, and 1985 through 2003 model-year heavy-duty diesel engines to be used in urban buses, and for 1985 through 2003 model-year diesel heavy-duty vehicles (except medium-duty vehicles), and 1985 through 2003 model-year motor vehicle engines used in such vehicles, a period of use of eight years or 110,000 miles, whichever first occurs, for diesel light, heavy-duty vehicles; eight years or 185,000 miles, whichever first occurs, for diesel medium, heavy-duty vehicles; and eight years or 290,000 miles, whichever first occurs, for diesel heavy, heavy-duty vehicles, except as provided in paragraphs (11), (14), (15) and (16); or any alternative useful life period approved by the Executive Officer. (The classes of diesel light, medium, and heavy, heavy-duty vehicles are defined in 40 CFR section 86.085-2, as amended November 16, 1983.)

(8) For light-duty and medium-duty vehicles certified under the Optional 100,000 Mile Certification Procedure, and motor vehicle engines used in such vehicles, a period of use of ten years or 100,000 miles, whichever first occurs.

(9) For 2001 through 2019 model year medium-duty low-emission, ultra-low-emission and super-ultra-low-emission vehicles certified to the primary standards in section 1961(a)(1), and motor vehicle engines used in such vehicles, a period of use of ten years or 120,000 miles, whichever occurs first. For 2001 through 2019 medium-duty low-emission, ultra-low-emission and super-ultra-low-emission vehicles certified to the optional 150,000 mile standards in section 1961(a)(1), and motor vehicle engines used in such vehicles, a period of use of fifteen years or 150,000 miles, whichever occurs first. For all other 1995 and subsequent model-year medium-duty vehicles and motor vehicle engines used in such vehicles, and 1992 through 1994 model-year medium-duty low-emission and ultra-low-emission vehicles certified to the standards in Section 1960.1(h)(2), and motor vehicle engines used in such vehicles, a period of use of eleven years or 120,000 miles, whichever occurs first.

(10) For all other light-duty and medium-duty vehicles, and motor vehicle engines used in such vehicles, a period of use of five years or 50,000 miles, whichever first occurs. For those passenger cars, light-duty trucks and medium-duty vehicles certified pursuant to section 1960.1.5, Title 13, California Code of Regulations, the useful life shall be seven years, or 75,000 miles. whichever first occurs; however, the manufacturer's reporting and recall responsibility beyond 5 years or 50,000 miles shall be limited, as provided in section 1960.1.5. For those passenger cars and light-duty trucks certified pursuant to Title 13, California Code of Regulations, section 1960.1(f) and section 1960.1(g), the useful life shall be ten years or 100,000 miles, whichever first occurs; however, for those vehicles certified under section 1960.1(f), the manufacturer's warranty failure and defects reporting and recall responsibility shall be subject to the conditions and standards specified in section 1960.1(f).

(11) For 1994 through 2003 model-year heavy heavy-duty diesel urban buses, and 1994 through 2003 model-year heavy heavy-duty diesel engines to be used in urban buses, for the particulate standard, a period of use of ten years or 290,000 miles, whichever first occurs; or any alternative useful life period approved by the Executive Officer.

(12) For 1997 and subsequent model year off-road motorcycles, all terrain vehicles, and for 2007 and subsequent model year off-road sport vehicles, off-road utility vehicles, sand cars, and engines used in such vehicles, a period of use of five years or 10,000 kilometers (6,250 miles), whichever first occurs.

(13) For 1998 through 2003 model-year gasoline heavy-duty engines, for the NOx standard, a period of use of ten years or 110,000 miles, whichever first occurs; or any alternative useful life period approved by the Executive Officer.

(14) For 1998 through 2003 model-year light heavy-duty diesel engines, for the NOx standard, a period of use of ten years or 110,000 miles, whichever first occurs; or any alternative useful life period approved by the Executive Officer.

(15) For 1998 through 2003 model-year medium heavy-duty diesel engines, for the NOx standard, a period of use of ten years or 185,000 miles, whichever first occurs; or any alternative useful life period approved by the Executive Officer.

(16) For 1998 through 2003 model-year heavy heavy-duty diesel engines, for the NOx, standard, a period of use of ten years or 290,000 miles, whichever first occurs; or any alternative useful life period approved by the Executive Officer.

(17) For those passenger cars and light-duty trucks certified to the primary standards in section 1961(a)(1), the useful life shall be ten years or 120,000 miles, whichever occurs first. For 2001 and subsequent passenger car and light-duty truck low-emission, ultra-low-emission and super-ultra-low-emission vehicles certified to the optional 150,000 mile standards in section 1961(a)(1), and motor vehicle engines used in such vehicles, a period of use of fifteen years or 150,000 miles, whichever occurs first.

(18) For those passenger cars, light-duty trucks, and medium-duty vehicles certified to the standards in section 1961.2 or 1961.3, the useful life shall be fifteen years or 150,000 miles, whichever occurs first.

(19) For 2004 and subsequent model-year light heavy-duty diesel engines, for carbon monoxide, particulate, and oxides of nitrogen plus non-methane hydrocarbons emissions standards, a period of use of ten years or 110,000 miles, whichever first occurs; or any alternative useful life period approved by the Executive Officer.

(19.1) For 2004 and subsequent model-year light heavy-duty diesel engines certified to the Greenhouse Gas emission standards in section 1956.8(a)(7), title 13, CCR, for carbon dioxide, nitrous oxide, and methane emission standards, a period of use of ten years or 110,000 miles, whichever first occurs, or any alternative useful life period approved by the Executive Officer.

(20) For 2004 and subsequent model-year medium heavy-duty diesel engines, for carbon monoxide, particulate, and oxides of nitrogen plus non-methane hydrocarbons emissions standards, a period of use of ten years or 185,000 miles, whichever first occurs; or any alternative useful life period approved by the Executive Officer.

(20.1) For 2004 and subsequent model-year medium heavy-duty diesel engines certified to the Greenhouse Gas emission standards in section 1956.8(a)(7), title 13, CCR, for carbon dioxide, nitrous oxide, and methane emission standards, a period of use of ten years or 185,000 miles, whichever first occurs, or any alternative useful life period approved by the Executive Officer.

(21) For 2004 and subsequent model-year heavy heavy-duty diesel engines, 2004 and subsequent model-year heavy-duty diesel urban buses, 2004 and subsequent model-year heavy-duty diesel engines to be used in urban buses, and 2004 and subsequent model year hybrid-electric urban buses for carbon monoxide, particulate, and oxides of nitrogen plus non-methane hydrocarbon emissions standards, a period of use of 10 years or 435,000 miles, or 22,000 hours, whichever first occurs, or any alternative useful life period approved by the Executive Officer, except as provided in paragraphs (21)(A) and (21)(B).

(A) The useful life limit of 22,000 hours in paragraph (19) of this definition is effective as a limit to the useful life only when an accurate hours meter is provided by the manufacturer with the engine and only when such hours meter can reasonably be expected to operate properly over the useful life of the engine.

(B) For an individual engine, if the useful life hours limit of 22,000 hours is reached before the engine reaches 10 years or 100,000 miles, the useful life shall become 10 years or 100,000 miles, whichever occurs first, as required under Clean Air Act section 202(d)(42 U.S.C. 7521(d)).

(21.1) For 2004 and subsequent model-year heavy heavy-duty diesel engines certified to the Greenhouse Gas emission standards in section 1956.8(a)(7), title 13, CCR, for carbon dioxide, nitrous oxide, and methane emission standards, a period of use of ten years or 435,000 miles, or 22,000 hours, whichever first occurs, or any alternative useful life period approved by the Executive Officer, except as provided in paragraphs (21)(A) and (21)(B).

(22) For 2004 and subsequent model-year heavy-duty Otto-cycle engines, for carbon monoxide, particulate, and oxides of nitrogen plus non-methane hydrocarbon emissions standards, a period of use of 10 years or 110,000 miles, whichever first occurs.

(22.1) For 2004 and subsequent model-year heavy-duty Otto-cycle engines certified to the Greenhouse Gas emission standards in section 1956.8(h)(6), title 13, CCR, for carbon dioxide, nitrous oxide, and methane emissions standards, the useful life shall be a period of use of ten years or 110,000 miles, whichever first occurs.

(23) For 2000 and later model year off-road compression-ignition engines, for oxides of nitrogen, hydrocarbon, oxides of nitrogen plus hydrocarbon (when applicable), carbon monoxide, particulate emission standards, and for smoke opacity:

(A) For all engines rated under 19 kilowatts, and for constant-speed engines rated under 37 kilowatts with rated speeds greater than or equal to 3,000 revolutions per minute, a period of use of five years or 3,000 hours of operation, whichever first occurs.

(B) For all other engines rated above 19 kilowatts and under 37 kilowatts, a period of use of seven years or 5,000 hours of operation, whichever first occurs.

(C) For engines rated at or above 37 kilowatts, a period of use of ten years or 8,000 hours of operation, whichever first occurs.

(24)

(A) For California-certified 2008 and subsequent model year spark-ignition sterndrive/inboard marine engines with maximum rated power less than or equal to 373 kilowatts and complying with the Option 2 requirements in Section 2442(b)(1), and for California-certified 2009 and subsequent model-year spark-ignition sterndrive/inboard marine engines with a maximum rated or maximum engine power less than or equal to 485 kilowatts, a period of ten years or 480 hours, a period of ten years or 480 hours, whichever first occurs.

(B) For California-certified 2009 and subsequent model-year spark-ignition sterndrive/inboard marine engines greater than 485 kilowatts, a period of one year or 50 hours, whichever first occurs. Manufacturers of spark-ignition sterndrive/inboard marine engines greater than 485 kilowatts may petition the Executive Officer for a approval of a shorter period when appropriate.

(25) For 2014 and subsequent model-year heavy-duty vehicles at or below 19,500 pounds GVWR, certified to the GHG emission standards of section 95663, title 17, CCR, the useful life shall be ten years or 110,000 miles, whichever first occurs.

(26) For 2014 and subsequent model-year heavy-duty vehicles above 19,500 pounds and at or below 33,000 pounds GVWR, certified to the GHG emission standards of section 95663, title 17, CCR, the useful life shall be ten years or 185,000 miles, whichever first occurs.

(27) For 2014 and subsequent model-year heavy-duty vehicles above 33,000 pounds GVWR, certified to the GHG emission standards of section 95663, title 17, CCR, the useful life shall be ten years or 435,000 miles, whichever first occurs.

(m) "Vehicle or engine manufacturer" means the manufacturer granted certification for a motor vehicle or motor vehicle engine.

(n) "Voluntary Emission Recall" means an inspection, repair, adjustment, or modification program voluntarily initiated and conducted by a manufacturer or its agent or representative to remedy any nonconformity for which direct notification of vehicle or engine owners is necessary.

Appendix A to Article 2.1

California In-Use Vehicle Emission-Related Recall Procedures, Enforcement Test Procedures, and Failure Reporting Procedures for 1982 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, Heavy-Duty Vehicles and Engines, Motorcycles, 1997 and Subsequent Model-Year Off-Road Motorcycles and All -Terrain Vehicles, 2000 and Subsequent Model-Year Off-Road Compression-Ignition Engines, and 2008 and Subsequent Model-Year Spark-Ignition Sterndrive/Inboard Marine Engines.

Vehicle and Engine Parameters, Components, and Specifications

I. Passenger Car, Light-Duty Truck, Medium-Duty Vehicle, Motorcycle, and Inboard and Sterndrive Parameters and Specifications.

A. Basic Engine Parameters-Reciprocating Engines.

1. Compression ratio.

2. Cranking compression pressure.

3. Valves (intake and exhaust).

a. Head diameter dimension.

b. Valve lifter or actuator type and valve lash dimension.

4. Turbocharger calibrations.

5. Camshaft timing.

a. Valve opening (degrees BTDC).

b. Valve closing (degrees ATDC).

c. Valve overlap (inch-degrees).

B. Basic Engine Parameters-Rotary Engines.

1. Intake port(s): Timing and overlap if exposed to the combustion chamber.

2. Exhaust port(s): Timing and overlap if exposed to the combustion chamber.

3. Cranking compression pressure.

4. Compression ratio.

C. Air Inlet System: Temperature control system calibration.

D. Fuel System.

1. General

a. Engine idle speed.

b. Engine idle mixture.

2. Carburetion.

a. Air-fuel flow calibration.

b. Transient enrichment system calibration.

c. Starting enrichment system calibration.

d. Altitude compensation system calibration.

e. Hot idle compensation system calibration.

3. Fuel injection.

a. Control parameters and calibrations.

b. Fuel shutoff system calibration.

c. Starting enrichment system calibration.

d. Transient enrichment system calibration.

e. Air-fuel flow calibration.

f. Altitude compensation system calibration.

g. Operating pressure(s).

h. Injector timing calibrations.

E. Ignition System.

1. Control parameters and calibrations.

2. Initial timing setting.

3. Dwell setting.

4. Altitude compensation system calibration.

5. Spark plug voltage.

F. Engine Cooling System: Thermostat calibration.

G. Exhaust Emission Control system.

1. Air injection system.

a. Control parameters and calibrations.

b. EGR valve flow calibration.

2. EGR system.

a. Control parameters and calibrations.

b. EGR valve flow calibration.

3. Catalytic converter system.

a. Active surface area.

b. Volume of catalyst.

c. Conversion efficiency.

d. Leaded fuel restrictor or constricted fuel filler neck.

4. Backpressure.

H. Evaporative Emission Control System.

1. Control parameters and calibrations.

2. Fuel tank.

a. Pressure and vacuum relief settings.

b. Fuel fill pipe and opening specifications (Reference section 2290, Title 13, C.C.R.).

I. Crankcase Emission Control System.

1. Control parameters and calibrations.

2. Valve calibration(s).

J. Auxiliary Emission Control Devices (AECD).

1. Control parameters and calibrations.

2. Component calibration(s).

K. Emission Control Related Malfunction and Diagnostic Systems.

1. On-Board Malfunction and Diagnostic Systems

a. Control parameters and calibrations.

b. Component calibration(s).

2. Emission Control Related Warning Systems

a. Control parameters and calibrations.

b. Component calibration(s).

L. Driveline Parameters.

1. Axle ratio(s).

II. Heavy-Duty Gasoline Engine Parameters and Specifications.

A. Basic Engine Parameters.

1. Compression ratio.

2. Cranking compression pressure.

3. Supercharger/turbocharger calibration.

4. Valves (intake and exhaust).

a. Head diameter dimension.

b. Valve lifter or actuator type and valve lash dimension.

5. Camshaft timing.

a. Valve opening (degrees BTDC).

b. Valve closing (degrees ATDC).

c. Valve overlap (inch-degrees).

B. Air Inlet System: Temperature control system calibration.

C. Fuel System.

1. General.

a. Engine idle speed.

b. Engine idle mixture.

2. Carburetion.

a. Air-fuel flow calibration.

b. Transient enrichment system calibration.

c. Starting enrichment system calibration.

d. Altitude compensation system calibration.

e. Hot idle compensation system calibration.

3. Fuel injection.

a. Control parameters and calibrations.

b. Fuel shutoff system calibration.

c. Starting enrichment system calibration.

d. Transient enrichment system calibration.

e. Air-fuel flow calibration.

f. Altitude compensation system calibration.

g. Operating pressure(s).

h. Injector timing calibrations.

D. Ignition System.

1. Control parameters and calibrations.

2. Initial timing setting.

3. Dwell setting.

4. Altitude compensation system calibration.

5. Spark plug voltage.

E. Engine Cooling System: Thermostat calibration.

F. Exhaust Emission Control system.

1. Air injection system.

a. Control parameters and calibrations.

b. Pump flow rate.

2. EGR system.

a. Control parameters and calibrations.

b. EGR valve flow calibration.

3. Catalytic converter system.

a. Active surface area.

b. Volume of catalyst.

c. Conversion efficiency.

d. Leaded fuel restrictor or constricted fuel filler neck.

4. Backpressure.

G. Evaporative Emission Control System.

1. Control parameters and calibrations.

2. Fuel tank.

a. Pressure and vacuum relief settings.

b. Fuel fill pipe and opening specifications (Reference section 2290, Title 13, C.C.R.).

H. Crankcase Emission Control System.

1. Control parameters and calibrations.

2. Valve calibration(s).

I. Auxiliary Emission Control Devices (AECD).

1. Control parameters and calibrations.

2. Component calibration(s).

J. Emission Control Related Warning Systems.

1. Control parameters and calibrations.

2. Component calibration(s).

III. Heavy-Duty Diesel Engine and Off-Road Compression-Ignition Engine Parameters and Specifications.

A. Basic Engine Parameters-Four Stroke Cycle Reciprocating Engines.

1. Compression ratio.

2. Cranking compression pressure.

3. Supercharger/turbocharger calibration.

4. Valves (intake and exhaust).

a. Head diameter dimension.

b. Valve lifter or actuator type and valve lash dimension.

5. Camshaft timing.

a. Valve opening (degrees BTDC).

b. Valve closing (degrees ATDC).

c. Valve overlap (inch-degrees).

B. Basic Engine Parameters-Two Stoke Cycle Reciprocating Engine.

1-5. Same as section III.A.

6. Intake port(s): Timing in combustion cycle.

7. Exhaust port(s): Timing in combustion cycle.

C. Air Inlet System: Temperature control system calibration.

1. Temperature control system calibration.

2. Maximum allowable air inlet restriction.

D. Fuel System.

1. Fuel injection.

a. Control parameters and calibrations.

b. Transient enrichment system calibration.

c. Air-fuel flow calibration.

d. Altitude compensation system calibration.

e. Operating pressure(s).

f. Injector timing calibration.

E. Exhaust Emission Control System: Maximum allowable backpressure.

F. Crankcase Emission Control System.

1. Control parameters and calibrations.

2. Valve calibration(s).

G. Auxiliary Emission Control Device (AECD).

1. Control parameters and calibrations.

2. Component calibration(s).

NOTE: Authority cited: Sections 38501, 38505, 38510, 38560, 39010, 39600, 39601, 43013, 43018, 43101, 43104, 43105 and 43806, Health and Safety Code; and Section 28114, Vehicle Code. Reference: Sections 38501, 38505, 38510, 38560, 39002, 39003, 39010, 39500, 39601, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43107, 43202, 43204-43205.5, 43206, 43210, 43211, 43212, 43213 and 43806, Health and Safety Code; and Section 28114, Vehicle Code.

§ 2139.0.1. Testing. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

After the vehicles or trailers have been accepted and restorative maintenance, if any, has been performed, the ARB or its designated laboratory shall perform the applicable emission tests pursuant to the following:

(a) For passenger cars and light-duty trucks, in-use compliance emission tests shall be performed pursuant to section 1960.1,1961, 1961.2, or 1961.3, Title 13, California Code of Regulations, as applicable.

(b) For medium-duty vehicles certified according to the chassis standards and test procedures specified in section 1960.1, 1961, 1961.2, or 1961.3, Title 13, California Code of Regulations and the documents incorporated by reference therein, in-use compliance emission tests shall be performed pursuant to section 1960.1, 1961, 1961.2, or 1961.3, Title 13, California Code of Regulations, as applicable.

For medium-duty vehicles certified according to the Greenhouse Gas emission standards of section 95663, Title 17, California Code of Regulations, and the documents incorporated by reference therein, in-use compliance emission tests shall be performed pursuant to section 95663, Title 17, California Code of Regulations, as applicable.

(c) For medium-duty engines and vehicles certified according to the optional engine test procedures specified in section 1956.8, Title 13, California Code of Regulations and the documents incorporated by reference therein, in-use compliance emission tests shall be performed pursuant to one of the following procedures:

<u>For medium-duty engines and vehicles certified to the Greenhouse Gas emission standards in sections 1956.8(a)(7) and 1956.8(h)(6), Title 13, California Code of Regulations, in-use compliance emission tests shall be performed pursuant to one of the following procedures:</u>

(1) The engines of medium-duty vehicles may be tested pursuant to the engine test procedures specified in section 1956.8, provided that the manufacturer or its designated laboratory conduct procurement and enforcement testing pursuant to Sections 2136 through 2140, Title 13, California Code of Regulation, at the manufacturer's expense.

For manufacturers that have only one engine family or test group, the manufacturer or its designated laboratory that have more than one engine family or test group, the manufacturer or its designated laboratory shall procure no more than fifteen vehicles per engine family or test group. For manufacturers that have more than one engine family or test group, the manufacturer or its designated laboratory shall procure and test at the manufacturer's expense no more than one-third of its engine families or test groups and no more than fifteen vehicles from each engine family or test group. For the purposes of this section, "one-third" of a manufacturer's engine families or test groups shall be determined by dividing the number of distinct engine families or test groups by three, adding 0.5, and truncating the result to the nearest whole number.

The specific engine families or test groups subject to enforcement testing shall be selected by the ARB. The manufacturer or its designated laboratory shall begin the engine procurement process within 10 working days of notification by the ARB and shall complete testing within 100 working days of notification by the ARB. The Executive Officer shall approve the manufacturer's procurement procedures in advance of their use by the manufacturer. The Executive Officer shall approve a manufacturer's procurement procedures if engines are screened according to the criteria specified in section 2137, Title 13, California Code of Regulations and selected randomly from registration records compiled and prepared by R. L. Polk and Company or a comparable source. In addition, no vehicle shall be selected for enforcement testing with mileage less than 60 percent of the useful-life mileage without prior approval from the Executive Officer. The manufacturer shall permit an ARB representative to witness procurement, restorative maintenance, and enforcement testing. The Executive Officer shall have the authority to accept or reject a test engine based upon criteria specified in section 2137. Once an engine has been tested and determined to be in compliance with the current in-use emission standards, no further testing will be performed on subsequent engine families or test groups that carry-over the durability data of the tested engine family or test group.

Notwithstanding the above, if a manufacturer fails to demonstrate compliance with the emission standards after one-third of its engine families or test groups have been tested, additional engine families or test groups shall be tested, by the manufacturer or its designated laboratory, at the manufacturer's expense, until compliance is demonstrated on one-third of the engine families or test groups or all of a manufacturer's engine families or test groups have been tested. In addition, any engine family or test group which has been tested and determined to be in noncompliance shall be retested by the manufacturer each subsequent year until compliance with the applicable emission standards has been demonstrated. Notwithstanding the above, the ARB may conduct engine enforcement testing pursuant to the engine test procedures specified in section 1956.8, at their own expense.

(2) Medium-duty vehicles may be tested according to the chassis test procedures specified in section 1960.1(k), 1961, or 1961.2, Title 13, California Code of Regulations or section 95663, Title 17, California Code of Regulations, as applicable, if a manufacturer develops correlation factors which establish the relationship between engine and chassis testing for each engine family or test group and submits these correlation factors within one year after the beginning of production. The correlation factors shall be applied to the measured in-use engine exhaust emission data to determine the in-use engine exhaust emission levels. All correlation factors and supporting data included in a manufacturer's application must be submitted to and approved by the Executive Officer in advance of their use by a manufacturer. Correlation factors intended to apply to a specific engine family or test group shall be applicable for each vehicle model incorporating that specific engine. Manufacturers shall submit test data demonstrating the applicability of the correlation factors for vehicle models comprising a minimum of 80 percent of their engine sales for that specific engine family or test group. The correlation factors for the remaining fleet may be determined through an engineering evaluation based upon a comparison with similar vehicle models. The Executive Officer shall approve a submitted correlation factor if it accurately corresponds to other established empirical and theoretical correlation factors and to emission test data available to the Executive Officer.

A manufacturer may choose to use the results from the chassis in-use testing as a screening test. If an engine family or test group does not demonstrate compliance with any of the applicable in-use engine standards, as determined from the chassis test data and the applied correlation factors, the manufacturer shall be subject to the requirements and cost of in-use compliance engine testing, as specified in section 2139(c)(1). The manufacturer shall be subject to engine testing for any non-complying engine family or test group for each subsequent year until compliance with the engine emission standards is demonstrated.

Subsequent to approval of the correlation factors, the Executive Officer may make a determination that the original correlation factors are not valid. Such a determination may be based upon in-use emission data, including chassis and engine testing. Upon determination that the correlation factors for a specific engine family or test group are not valid, the manufacturer of the engine family or test group shall be subject to the enforcement testing requirements and costs of in-use compliance engine testing, as specified in section 2139(c)(1).

(3) The manufacturer shall choose one of the procedures specified in subsections (c)(1) through (c)(2). The Executive Officer shall permit the use of alternative test procedures if the Executive Officer determines the alternative test procedure adequately predicts the exhaust emissions from the engine test procedure specified in section 1956.8, Title 13, California Code of Regulations. Such a determination may be based upon correlation with test data from the engine test procedures.

(4) The time limits specified in subsections (c)(1) and (c)(2) may be extended by the Executive Officer if the manufacturer demonstrates that the time limits specified could not be achieved due to reasons beyond the reasonable control of the manufacturer.

(d) For heavy-duty engines and vehicles, in-use compliance emission tests shall be performed pursuant to section 1956.8, title 13, California Code of Regulations. For heavy-duty vehicles certified to the GHG emission standards of section 95663, title 17, California Code of Regulations, in-use compliance emission tests shall be performed pursuant to section 95663, Title 17, California Code of Regulations.

(e) For motorcycles, in-use compliance emission tests shall be performed pursuant to section 1958, title 13, California Code of Regulations.

(f) For off-road motorcycles and all-terrain vehicles, in-use compliance tests shall be performed pursuant to section 2412, title 13, California Code of Regulations. The in-use compliance testing shall use the same test procedure utilized for the specific vehicle's original certification testing.

(g) For off-road compression-ignition engines, in-use compliance tests shall be performed pursuant to section 2423, title 13, California Code of Regulations. The in-use compliance testing shall use the same test procedure utilized for the specific engine's original certification testing.

(h) For spark-ignition sterndrive/inboard marine engines, in-use compliance tests shall be performed pursuant to section 2442, title 13, California Code of Regulations. The in-use compliance testing shall use the same test procedure utilized for the specific engine's original certification testing.

(i) For any emission in-use compliance test performed pursuant to subsections (a) through (h), the ARB may waive a specific test for subsequent vehicle samples if results from vehicle samples already tested are deemed sufficient to establish complying emission levels. The ARB shall inform the manufacturer at least 30 days prior to enforcement testing of its vehicles or engines and shall permit a manufacturer representative to observe the enforcement testing.

Note: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43104 and 43105, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43107, 43204-43205.5 and 43211-43213, Health and Safety Code.

§ 2140.0.1. Notification and Use of Test Results. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

(a) The Executive Officer shall notify the manufacturer in writing if the in-use vehicle enforcement test results indicate that the test fleet contains three or more failures of the same emission-related component. Upon receipt of the notification, the manufacturer shall submit an emissions information report in accordance with title 13, California Code of Regulations, sections 2146 and 2147. The engine family, test group, or sub-group manufacturer shall be subject to recall when a specific emission-related failure occurred in three or more test vehicles, unless the Executive Officer determines from the emissions information report that a recall is unnecessary.

(b) If the results of the in-use vehicle emission tests conducted pursuant to section 2139 indicate that the average emissions of the test vehicles for any pollutant exceed the applicable emission standards specified in title 13, California Code of Regulations, sections 1960.1, 1961, 1961.2, 1961.3, 1956.8, 1958, 2412, 2423 or 2442, or in title 17, California Code of Regulations, section 95663, the entire vehicle population so represented shall be deemed to exceed such standards. The Executive Officer shall notify the manufacturer of the test results and upon receipt of the notification, the manufacturer shall have 45 days to submit an influenced recall plan in accordance with sections 2113 through 2121, title 13, California Code of Regulations. If no such recall plan is submitted, the Executive Officer may order corrective action including recall of the affected vehicles in accordance with sections 2122 through 2135, title 13, California Code of Regulations.

Note: Authority cited: Sections 38501, 38505, 38510, 38560, 39600, 39601, 43013, 43018 and 43105, Health and Safety Code. Reference: Sections 38501, 38505, 38510, 38560, 43000, 43009.5, 43013, 43018, 43101, 43104, 43105, 43106, 43107, 43204-43205.5 and 43211-43213, Health and Safety Code.

§ 2147.0.1. Demonstration of Compliance with Emission Standards. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

(a) In order to overcome the presumption of noncompliance set forth in title 13, California Code of Regulations, section 2123(b), the average emissions of the vehicles~~,~~ and engines, with the failed emission-related component must comply with applicable emission standards. A manufacturer may demonstrate compliance with the emission standards by following the procedures set forth in either subsection (b) or subsection (c) of this section.

(b) A manufacturer may test properly maintained in-use vehicles with the failed emission-related component pursuant to the applicable certification emission tests specified in title 13, California Code of Regulations, section 1960.1, 1961, 1961.2, or 1961.3, as applicable, for passenger cars, light-duty trucks, and medium-duty vehicles, section 1956.8 for heavy-duty engines and vehicles, section 1958 for motorcycles, and section 2442 for sterndrive/inboard marine engines, and in title 17, California Code of Regulations, section 95663, for heavy-duty vehicles. The emissions shall be projected to the end of the vehicle's or engine's useful life using in-use deterioration factors. The in-use deterioration factors shall be chosen by the manufacturer from among the following:

(1) "Assigned" in-use deterioration factors provided by the ARB on a manufacturer's request and based on ARB in-use testing; or,

(2) deterioration factors generated during certification, provided adjustments are made to account for vehicle aging, customer mileage-accumulation practices, type of failed component, component failure mode, effect of the failure on other emission-control components, commercial fuel and lubricant quality, and any other factor which may affect the vehicle's or engine's operating conditions; or,

(3) subject to approval by the Executive Officer, a manufacturer-generated deterioration factor. The Executive Officer shall approve such deterioration factor if it is based on in-use data generated from certification emission tests performed on properly maintained and used vehicles in accordance with the procedures set forth in section 1960.1, 1961, or 1961.2, of title 13 of the California Code of Regulations, as applicable, for passenger cars, light-duty trucks, and medium-duty vehicles; section 1956.8 of title 13 of the California Code of Regulations heavy duty vehicles and engines; and section 1958 of title 13 of the California Code of Regulations for motorcycles; and section 95663 of title 17 of the California Code of Regulations, for heavy-duty vehicles, and if the vehicles from which it was derived are representative of the in-use fleet with regard to emissions performance and are equipped with similar emission control technology as vehicles with the failed component.

(c) In lieu of the vehicle or engine emission testing described in subsection (b) above and subject to approval by the Executive Officer, a manufacturer may perform an engineering analysis, laboratory testing or bench testing, when appropriate, to demonstrate the effect of the failure.

Note: Authority cited: Sections 38501, 38505, 38510, 38560, 39500, 39600, 39601, 43000.5, 43013, 43018, 43105, 43204, 43205.5 and 43214 ,Health and Safety Code. Reference: Sections 38501, 38505, 38510, 38560, 43000, 43009.5, 43018, 43101, 43104, 43105, 43106, 43107 and 43204-43205.5, Health and Safety Code.

§ 2317.0.1. Satisfaction of Designated Clean Fuel Requirements with a Substitute Fuel. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

(a) Any person may petition the state board to designate by regulation a substitute fuel which may be used instead of a primary designated clean fuel to satisfy any requirements in this chapter pertaining to a designated clean fuel. The state board shall designate such a substitute fuel if it is satisfied that the petitioner has demonstrated all of the following:

(1) That use of the fuel in low-emission vehicles certified on the primary designated clean fuel will result in emissions of NMOG (on a reactivity-adjusted basis), NOx, and CO no greater than the corresponding emissions from such vehicles fueled with the primary designated clean fuel, as determined pursuant to the procedures set forth in the "California Test Procedure for Evaluating Substitute Fuels and New Clean Fuels through 2014," as amended March 22, 2012 or the "California Test Procedure for Evaluating Substitute Fuels and New Clean Fuels in 2015 and Subsequent Years," as adopted March 22, 2012 as applicable, which are incorporated herein by reference.

(2) That use of the fuel in low-emission vehicles certified on the primary designated clean fuel will result in potential health risks from exposure to benzene, 1,3-butadiene, formaldehyde, and acetadehyde in the aggregate no greater than the corresponding potential health risks for such vehicles fueled with the primary designated clean fuel, as determined pursuant to the procedures set forth in the "California Test Procedure for Evaluating Substitute Fuels and New Clean Fuels through 2014" or the "California Test Procedure for Evaluating Substitute Fuels and New Clean Fuels in 2015 and Subsequent Years," as applicable, which are incorporated herein by reference.

(3) That if the proposed substitute fuel may be used to fuel any motor vehicle other than low-emission vehicles certified on the primary designated clean fuel:

(A) Use of the substitute fuel in such other motor vehicles would not increase emissions of NMOG (on a reactivity-adjusted basis), NOx, and CO as determined pursuant to the procedures set forth in the "California Test Procedure for Evaluating Substitute Fuels and New Clean Fuels through 2014" or the "California Test Procedure for Evaluating Substitute Fuels and New Clean Fuels in 2015 and Subsequent Years," as applicable, which are incorporated herein by reference; and

(B) Use of the substitute fuel in such other motor vehicles would result in potential health risks from exposure to benzene, 1,3-butadiene, formaldehyde, and acetadehyde in the aggregate no greater than the corresponding potential health risk from the emissions from such vehicles when operating on their customary fuel, as determined pursuant to the procedures set forth in the "California Test Procedure for Evaluating Substitute Fuels and New Clean Fuels through 2014" or the "California Test Procedure for Evaluating Substitute Fuels and New Clean Fuels in 2015 and Subsequent Years," as applicable, which are incorporated herein by reference; and

(C) Use of the substitute fuel in such other motor vehicles would not result in increased deterioration of the emission control system on the vehicle and would not void the warranties of any such vehicles.

(b) Whenever the state board designates a substitute fuel pursuant to this section, the state board shall also establish by regulation required specifications for the substitute fuel.

(c) Commencing with the effective date of a regulatory action of the state board designating a substitute fuel pursuant to this section, any person may satisfy his or her obligations under this chapter pertaining to a primary designated clean fuel, in whole or in part, by substituting the substitute fuel in place of the primary designated clean fuel.

NOTE: Authority cited: Sections 39600, 39601, 39667, 43013, 43018 and 43101, Health and Safety Code; and *Western Oil and Gas Ass'n. v. Orange County Air Pollution Control District*, 14 Cal. 3d 411, 121 Cal. Rptr. 249 (1975). Reference: Sections 39000, 39001, 39002, 39003, 39500, 39515, 39516, 39667, 43000, 43013, 43018 and 43101, Health and Safety Code; and *Western Oil and Gas Ass'n. v. Orange County Air Pollution Control District*, 14 Cal. 3d 411, 121 Cal. Rptr. 249 (1975).

§ 2903.0.1. Definitions. (Alternative)

For purposes of this section, any cross-referenced section in title 13 or title 17 of the California Code of Regulations shall refer to the section identified as the alternative version "(Alternative)" for the corresponding section, to the extent an alternative version of that section exists.

The following definitions shall govern the provisions of this Article 2.

"Aerodynamic technologies" is defined in Title 17, section 95302 and is used to comply with the requirements of the "California Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model Heavy-Duty Vehicles," incorporated by reference in Title 17, section 95663, subsection (c).

"Engine family" is a basic classification unit that is used to demonstrate compliance with Title 13, section 1956.8.

"Evaporative emissions family" is a basic classification unit that is used to demonstrate compliance with Title 13, section 1976.

"Family emission limit (FEL)" is defined in Title 13, section 1956.8.

"Fuel-fired heater" means any idling emission reduction device subject to the certification requirements in Title 13, sections 1956.8 and 2485, subsection (c)(3)(B).

"Heavy-duty compression ignition (HD CI) engine family" means any heavy-duty compression ignition engine family subject to the heavy-duty engine certification requirements in Title 13, section 1956.8 that apply to: heavy-duty diesel engines, heavy-duty natural gas-fueled and liquefied-petroleum-gas-fueled engines derived from diesel-cycle engines, and heavy-duty methanol-fueled diesel engines.

"Heavy-duty Otto-cycle (HDO) engine family" means any heavy-duty Otto-cycle engine family subject to the heavy-duty engine certification requirements in Title 13, section 1956.8.

"Heavy-duty greenhouse gas vehicle family" means any heavy-duty vehicle family subject to the requirements of the "California Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model Heavy-Duty Vehicles," incorporated by reference in Title 17, section 95663, subsection (c).

11/6/24
PER AGENCY
REQUEST
LSM

"Heavy-duty greenhouse gas (HD GHG) partial carry-over" means an application that is identical to the previous model year's application that resulted in the issuance of an certification except for one or more of the following: (1) model year; (2) Engine or Vehicle family name; (3) applicant contact information; (4) projected sales data; and in addition one or more of the following: 5) model names (only if the CO_2 standard to which the vehicle is certified or the lowest and highest FELs are not changed); (6) part numbers (only if the CO_2 standard to which the vehicle is certified or the lowest and highest FELs are not changed); (7) Engine families, transmission families, powertrain families, and axle families (only if the CO_2 standard to which the vehicle is certified or the lowest and highest FELs are not changed); and (8) Tires (for design-based standards only, tire changes must not impact the worst case coefficient of rolling resistance).

"Heavy-duty vehicle evaporative emissions family" means any heavy-duty vehicle family subject to the certification requirements in Title 13, sections 1976 and 1978.

"Incomplete medium-duty vehicle" means any medium-duty vehicle that meets the definition of an "incomplete vehicle" in the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," incorporated by reference in Title 13, section 1961.2, and is subject to the emission standards in Title 13, section 1956.8.

"Incomplete medium-duty vehicle (MDV) evaporative emissions family" means any medium-duty evaporative emissions family that is incorporated in an incomplete medium-duty vehicle.

"Light-duty vehicle" means any passenger car or light-duty truck that meets the applicable definitions in Title 13, section 1900 and is subject to the certification requirements in Title 13, Division 3, Chapter 1, Article 2. A street-use motorcycle is not a light-duty vehicle.

"Low California production manufacturer" means a manufacturer that produces annually for sale in California a total of no more than 300 heavy-duty vehicles that certify to the heavy-duty greenhouse gas standards in Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Subarticle 12 or a total of no more than 300 street-use motorcycles and motorcycle engines. The annual number of units produced for sale in California for purposes of this definition shall be based on the average number of applicable heavy-duty vehicles or street-use motorcycles or motorcycle engines produced for sale in California for the three previous consecutive model years by the manufacturer that seeks certification as a low California production manufacturer. For manufacturers seeking certification for the first time in California, model-year production volume shall be based on projected California sales. If actual reported sales numbers are available, projected production of California sales cannot be used to determine compliance with this definition.

1) For heavy-duty vehicles that certify to the heavy-duty greenhouse gas standards, the production cap is 300 units based on final sales data reported in accordance with section 1037.250 of the "California Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model Heavy-Duty Vehicles," incorporated by reference in Title 17, section 95663, subsection (c). If final sales data is not available, projected sales data reported in accordance with section 1037.205 of the procedures shall be used to determine eligibility under this definition.

2) For street-use motorcycles and motorcycle engines, the production cap is 300 units based on final annual production for sale volume reports submitted in accordance with Title 40, Code of Federal Regulations, Part 86, section 86.415-78, incorporated in Title 13, section 1958, subsection (c) or projected production for sale data reported in accordance with Title 40, Code of Federal Regulations, Part 86, section 86.416-80, incorporated in Title 13, section 1958, subsection (c), if final sales data is not available.

"Low California production for sale engine family" means a street-use motorcycle family or street-use motorcycle engine family with a maximum of 100 units. The maximum allowable number of units shall be calculated based on the final annual production for sale volume reports submitted in accordance with Title 40, Code of Federal Regulations, Part 86, section 86.415-78, incorporated in Title 13, section 1958, subsection (c) or projected production for sale data reported in accordance with Title 40, Code of Federal Regulations, Part 86, section 86.416-80, incorporated in Title 13, section 1958, subsection (c), if final sales data is not available.

The number of "low California production for sale engine family" applications that a manufacturer may submit for each model year is based on the average total number of units that manufacturer produced for sale in California for the three previous consecutive model years. For manufacturers seeking certification for the first time in California, model-year production volume shall be based on projected California sales.

1) A manufacturer that produced for sale in California more than an average of 2,500 total units for the previous three model years may submit no more than three "low California production for sale engine family" applications for each model year and may not use the low California production manufacturer provision for any other applications of the same model year.

2) A manufacturer that produces for sale in California an average of 2,500 or fewer total units for the previous three model years may submit up to six "low California production for sale engine family" applications for each model year and may not use the low California production manufacturer provision for any other applications of the same model year.

"Medium-duty compression ignition (MD CI) engine family" means any engine family subject to the medium-duty compression ignition engine certification requirements in Title 13, section 1956.8.

"Medium-duty Otto-cycle (MDO) engine family" means any engine family subject to the medium-duty Otto-cycle engine certification requirements in Title 13, section 1956.8.

"Medium-duty vehicle" means any vehicle that meets the definition of a medium-duty vehicle (including medium-duty passenger vehicles) in Title 13, section 1900 and is subject to the certification requirements in Title 13, Division 3, Chapter 1, Article 2.

"On-road heavy-duty exempt engine" means a federally-certified heavy-duty engine that can legally be sold in California under the provisions of Title 13, section 1956.8, subdivision (f).

"Specially constructed vehicle (SPCNS) certified engine package" is a "certified engine package," as defined in Title 13, section 2211, that is subject to the certification requirements in Title 13, section 2212.

"Specially constructed vehicle (SPCNS) certified engine package extension" is a "SPCNS certified engine package," that complies with the requirements in Title 13, section 2209.2, subsection (b).

"Specially produced motor vehicle (SPMV) certified engine package" is a "certified engine package," as defined in Title 13, section 2209.1, that is subject to the certification requirements in Title 13, section 2209.2.

"Specially produced motor vehicle (SPMV) manufacturer" is described in the "California Certification Procedures for Light-Duty Engine Packages for Use in New Light-Duty Specially-Produced Motor Vehicles for 2019 and Subsequent Model Years," incorporated by reference in Title 13, section 2209.1.

"Street-use motorcycle or motorcycle engine" means any motorcycle or motorcycle engine subject to the certification requirements in Title 13, section 1958.

"Test group" is a basic classification unit that has the meaning given in the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium Duty Vehicles," incorporated by reference in Title 13, section 1961.2 subsection (d).

"Trailer Family" means any trailer family subject to the certification requirements in Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Subarticle 12.

Note: Authority cited: Sections 39600, 39601, 43019, 43019.1, and 43202.6, Health and Safety Code. Reference: Sections 43000, 43000.5, 43013, 43018, 43019, and 43019.1, Health and Safety Code.