

Appendix A-8.1

Proposed Second 15-Day Changes to Proposed Title 13 Regulation Order (Compared to the First 15-Day Changes)

[Note: The proposed modifications (referred to as Second 15-Day Changes) to the proposed regulations are shown below. This version (Appendix A-8.1) complies with Government Code sections 11346.2, subdivision (a)(3), and 11346.8, subdivision (c). The originally proposed regulatory text made available September 23, 2025 (45-Day Proposal), and the proposed modifications released on April 3, 2026 (First 15-Day Changes), are incorporated into this version as plain, clean text (shown in “normal type”) because it is not being made available for public comment by this Notice. The deletions and additions to the originally proposed language that comprise the Second 15-day Changes that are made public with this Notice and available for comment are shown in ~~strikeout~~ to indicate deletions and underline to indicate additions. Subsections for which no changes are proposed in this rulemaking are indicated with “* * * * *.” The Second 15-Day Changes are being presented in multiple versions. For ease of readability, and to review these 15-Day Changes in an Accessible format, please refer to the Word (.docx) version (Appendix A-8.2).]

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 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 1962.1.1 Zero-Emission Vehicle Standards for 2009 through 2017 Model Year 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 1965.0.1 Emission Control, Smog Index, and Environmental Performance Labels -- 1979 and Subsequent Model-Year Motor Vehicles. (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)

Proposed Regulation Order

Title 13, California Code of Regulations

Amend Sections 1961.2.1, 1962.2.1, 1965.0.1, 1976.0.1, and 1978.0.1, and adopt section 1962.1.1 to read as follows:

§ 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.~~

~~*"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+NO_x emission standards for LEV160, LEV395, or LEV630, as applicable, in this subsection (a)(1) and the corresponding NMOG+NO_x numerical values in subsection (a)(4), in lieu of the separate NMOG and NO_x 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+NO_x emission standards for ULEV125, ULEV340, or ULEV570, as applicable, in this subsection (a)(1) and the corresponding NMOG+NO_x numerical values in subsection (a)(4), in lieu of the separate NMOG and NO_x 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+NO_x emission standards for SULEV30, SULEV170, or SULEV230, as applicable, in this subsection (a)(1) and the corresponding NMOG+NO_x numerical values in subsection (a)(4), in lieu of the separate NMOG and NO_x 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+NO_x standards. LEV II vehicles that certify to combined NMOG+NO_x 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 Vehicles³						
<i>Vehicle Type</i>	<i>Durability Vehicle Basis (mi)</i>	<i>Vehicle Emission Category²</i>	<i>NMOG + Oxides of Nitrogen⁴ (g/mi)</i>	<i>Carbon Monoxide (g/mi)</i>	<i>Formaldehyde (mg/mi)</i>	<i>Particulates¹ (g/mi)</i>
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+NO_x 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+NO_x 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.

⁶—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

(1) —“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.~~

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[†]	Particulates (mg/mi)
MDVs 8501–10,000 lbs. GVWR, excluding MDPVs	8
MDVs 10,001–14,000 lbs. GVWR	10

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

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.

(2) ~~NMOG+NO_x 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+NO_x 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+NO_x, 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.

- (3) ~~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 NMOC+NO_x 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 D 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 NMOC+NO_x 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.10 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.

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			
<i>Vehicle Emission Category</i>	<i>NMOC + NO_x (g/mi)</i>		<i>HCHO (g/mi)</i>
	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

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)			
<i>Vehicle Emission Category</i>	<i>NMOG + NO_x (g/mi)</i>		<i>HCHO (g/mi)</i>
	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

- (4) ~~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)

<i>Vehicle Type</i>	<i>Carbon Monoxide</i>
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.~~

~~(5) *Highway NMOG + NO_x 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+NO_x standard set forth in subsection (a)(1). Both the sum of the NMOG+NO_x emissions and the HWFET standard must be rounded in accordance with ASTM E29-67 to the nearest 0.001 g/mi before being compared.~~

~~(6) *Supplemental Federal Test Procedure (SFTP) Off-Cycle Emission Standards.*~~

~~(A) *SFTP NMOG+NO_x 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+NO_x and CO Stand-Alone Exhaust Emission Standards* set forth in subsection (a)(7)(A)1., or in accordance with the *SFTP NMOG+NO_x 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+NO_x composite emission standard applicable to 2015 model vehicles if choosing to comply with the *SFTP NMOG+NO_x 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+NO_x and CO emission standards on a 150,000-mile durability basis. Once an emission~~

standard type for NMOG+NO_x 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+NO_x and CO emission standards pursuant to this subsection (a)(7)(A) shall be subject to the 4,000-mile SFTP NMOG+NO_x and CO emission standards set forth in subsection 1960.1(r).

SFTP NMOG+NO_x and CO Exhaust Stand-Alone Emission Standards. The following standards are the maximum SFTP NMOG+NO_x 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 fuel flexible vehicles ≤ 6,000 lbs. GVWR and 2015 through 2017 model year fuel flexible vehicles > 6,000 lbs. GVWR when operating on 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+NO_x and CO Stand-Alone Exhaust Emission Standards for 2015 and Subsequent Model LEV III Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles				
			US06 Test (g/mi)	SC03 Test (g/mi)

<i>Vehicle Type</i>	<i>Durability Vehicle Basis (mi)</i>	<i>Vehicle Emission Category¹</i>	<i>NMOG + NO_x</i>	<i>CO</i>	<i>NMOG + NO_x</i>	<i>CO</i>
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.

1. ~~SFTP NMOG+NO_x 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+NO_x composite emission value does not exceed the applicable NMOG+NO_x 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 fuel-flexible vehicles ≤ 6,000 lbs. GVWR and 2015 through 2017 model year fuel-flexible vehicles > 6,000 lbs. GVWR when operating on 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+NO_x and, for LEV III test groups, a separate Composite Emission Value for CO, using the following equation:

$$\text{Composite Emission Value} = 0.28 \times \text{US06} + 0.37 \times \text{SC03} + 0.35 \times \text{FTP} \text{ [Eq. 1]}$$

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

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

"FTP" = the test group's NMOG+NO_x 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+NO_x composite emission standard applicable to the model year, manufacturers shall use a sales-weighted fleet average of the NMOG+NO_x 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+NO_x, 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+NO_x 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+NO_x 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+NO_x 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 Standard⁷										
	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 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, 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:~~

$$\frac{[\sum_{i=1}^n (\text{number of vehicles in the test group})_i \times (\text{composite value of bin})_i]}{\sum_{i=1}^n (\text{number of vehicles in the test group})_i} \quad [\text{Eq.2}]$$

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:~~

~~[(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 may not comply with the 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.~~

~~*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 $\leq 6,000$ 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 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) $\leq 6,000$ 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 Vehicles¹					
<i>Vehicle Type</i>	<i>Test Weight</i>	<i>Mileage for Compliance</i>	<i>Test Cycle</i>	<i>PM² (mg/mi)</i>	
				<i>2018 and Prior Model Years</i>	<i>2019 and Subsequent Model Years</i>
All PCs and LDTs through 8,500 lbs GVWR; MDPVs	Loaded vehicle weight	150,000	US06	10	6

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.

SFTP NMOG+NO_x and CO Exhaust Emission Standards for Medium-Duty Vehicles.

The following standards are the maximum NMOG+NO_x 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+NO_x 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 + NO _x	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
MDVs 10,001–14,000 lbs GVWR	150,000	n/a	Hot 1435 UC (Hot 1435 LA92), SC03, FTP	ULEV	0.550	6.0
				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).~~

~~**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[†]					
<i>Vehicle Type</i>	<i>Test Weight</i>	<i>Mileage for Compliance</i>	<i>Hp/GVWR²</i>	<i>Test Cycle^{3,4,5}</i>	<i>PM (mg/mi)</i>
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
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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.~~

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.~~

~~(7) Interim In-Use Compliance Standards.~~

~~(A) LEV III NMOG+NO_x 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.~~

~~NMOG+NO_x 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 + NO _x (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

¹not applicable to test groups that receive PZEV credits

~~NMOG+NO_x 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.

<i>Emission Category</i>	<i>Durability Vehicle Basis (miles)</i>	<i>LEV III MDVs (excluding MDPVs) 8,501–10,000 lbs. GVW</i>	<i>LEV III MDVs 10,001–14,000 lbs. GVW</i>
		<i>NMOG + NO_x (g/mi)</i>	<i>NMOG + NO_x (g/mi)</i>
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. ~~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+NO_x for the first two model years that they are certified to LEV III NMOG+NO_x standards or a LEV III SFTP NMOG+NO_x 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+NO_x 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+NO_x 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+NO_x shall be 1.4 times the applicable certification standard.~~

2. ~~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 10 mg/mi.~~
- 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.~~
- (8) ~~*Requirement to Generate Additional NMOG+NO_x 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+NO_x 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).~~
- (9) ~~*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.”~~

~~(10) *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 and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty trucks and Medium-duty Vehicles";~~

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

~~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.~~

~~(11) *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.~~

~~(12) — 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 (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 + NO_x 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)		
<i>Model Year</i>	<i>Fleet Average NMOG + NOx (grams per mile)</i>	
	<i>All PCs; LDTs 0-3750 lbs. LVW</i>	<i>LDTs 3751 lbs. LVW - 8500 lbs. GVWR; All MDPVs</i>
2014 [†]	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

[†] 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:~~

$$\frac{(\sum [\text{Number of vehicles in a test group excluding off-vehicle charge capable hybrid electric vehicles} \times \text{applicable emission standard}] + \sum [\text{Number of off-vehicle charge capable hybrid electric vehicles in a test group} \times \text{HEV NMOG+NOx contribution factor}])}{\text{Total Number of PCs plus LDT1s Produced and Delivered for sale in California, Including ZEVs and HEVs}}$$

- 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:~~

$$\frac{(\sum [\text{Number of vehicles in a test group excluding off-vehicle charge capable hybrid electric vehicles} \times \text{applicable emission standard}] + \sum [\text{Number of off-vehicle charge capable hybrid electric vehicles in a test group} \times \text{HEV NMOG factor}])}{\text{Total Number of LDT2s plus MDPVs Produced and Delivered for sale in California, Including ZEVs and HEVs}}$$

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);	LEV II LEVs; LEV160s	0.160	0.160
	LEV II ULEVs; LEV125s	0.125	0.125
	ULEV70s	0.070	0.070
2015 and subsequent model year vehicles certified to the "LEV III" standards in subsection 1961.2(a)(1)	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.~~

~~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.” 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)(1)(B)2., the maximum allowable Zero-emission VMT Allowance that may be used in these equations is 1.0.~~

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

- ~~1. In the 2015 through 2016 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 the 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 2022 and subsequent model years, a small volume manufacturer shall not exceed a fleet average NMOG+NOx value of 0.051 g/mi for PCs and LDTs from 0-3750 lbs. LVW or 0.051 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) 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 SULEV17 or SULEV23	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.	MDVs 10,001 – 14,000 lbs.
	GVWR	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+NO_x Contribution Factor for Off-vehicle Charge Capable HEVs 8,501 – 10,000 lbs. GVWR. The HEV NMOG+NO_x 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+NO_x Contribution Factor for Off-vehicle Charge Capable HEVs 10,001 – 14,000 lbs. GVWR. The HEV NMOG+NO_x 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]~~

- ~~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.~~
 - ~~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.~~

<i>Model Year</i>	<i>Number of Test Groups Certified to §1961.2.1(a)(1)</i>				<i>Vehicles Certified to §1956.8(c) or (h) (%)</i>
	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	4	2	4	0	100
2018	0	2	2	0	100
2019	0	4	2	4	100
2020	0	4	4	2	100
2021	0	0	4	3	100
2022 +	0	0	0	4	100

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:

<i>Model Year</i>	<i>Number of Test Groups Certified to §1961.2.1(a)(1)</i>				<i>Vehicles Certified to §1956.8(c) or (h) (%)</i>
	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	4	2	0	0	100
2017	0	2	4	0	100
2018	0	4	2	0	100
2019-2020	0	4	4	4	100
2021	0	0	4	2	100
2022 +	0	0	0	3	100

- 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.~~

<i>Model Year</i>	<i>Number of Test Groups Certified to §1961.2(a)(1)</i>				<i>Vehicles Certified to §1956.8(c) or (h) (%)</i>
	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

- 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.~~

<i>Model Year</i>	<i>Number of Test Groups Certified to §1961.2.1(a)(1)</i>				<i>Vehicles Certified to §1956.8(c) or (h) (%)</i>
	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-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+NO_x 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+NO_x 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+NO_x 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+NO_x 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:~~

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

~~(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+NO_x 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+NO_x credits in accordance with subsection (c)(2)(B).~~

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

- ~~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:~~

$$\begin{aligned} & \{(1.00) \times [(\text{No. of LEV395s and LEV630s Produced} \\ & \text{excluding HEVs}) + (\text{No. of LEV395 HEVs} \times \text{HEV} \\ & \text{VEC factor for LEV395s}) + \\ & (\text{No. of LEV630 HEVs} \times \text{HEV VEC} \\ & \text{factor for LEV630s})] - (\text{No. of} \\ & \text{LEV395s and LEV630s Required to be} \\ & \text{Produced})\} + \end{aligned}$$

$$\begin{aligned} & \{(1.14) \times [(\text{No. of ULEV340s and ULEV570s} \\ & \text{Produced excluding HEVs}) + (\text{No. of ULEV340 HEVs} \\ & \times \text{HEV VEC factor for ULEV340s}) + \\ & (\text{No. of ULEV570 HEVs} \times \text{HEV VEC factor} \\ & \text{for ULEV570s})] - (\text{No. of ULEV340s and} \\ & \text{ULEV570s Required to be Produced})\} + \end{aligned}$$

$$\begin{aligned} & \{(1.37) \times [(\text{No. of ULEV250s and ULEV400s} \\ & \text{Produced excluding HEVs}) + (\text{No. of ULEV250 HEVs} \\ & \times \text{HEV VEC factor for ULEV250s}) + \\ & (\text{No. of ULEV400 HEVs} \times \text{HEV VEC factor} \\ & \text{for ULEV400s})] - (\text{No. of ULEV250s and} \\ & \text{ULEV400s Required to be Produced})\} + \end{aligned}$$

$$\begin{aligned} & \{(1.49) \times [(\text{No. of ULEV200s and ULEV270s} \\ & \text{Produced excluding HEVs}) + (\text{No. of ULEV200 HEVs} \\ & \times \text{HEV VEC factor for ULEV200s}) + \end{aligned}$$

~~(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)].~~

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

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

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

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

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

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

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

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

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

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

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

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

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

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.

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+NO_x 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.~~

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

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) 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.~~

~~(3) Procedure for Offsetting Debits.~~

(A) ~~A manufacturer shall equalize emission debits by earning g/mi NMOG+NO_x emission credits or VECs in an amount equal to the g/mi NMOG+NO_x debits or VEDs, or by submitting a commensurate amount of g/mi NMOG+NO_x credits or VECs to the Executive Officer that were earned previously or acquired from another manufacturer. A manufacturer shall equalize NMOG+NO_x debits for PCs, LDTs, and MDPVs and VEC debits or NMOG+NO_x 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+NO_x emission debits for the model year by the g/mi NMOG+NO_x 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+NO_x emission debits for the model year by the g/mi NMOG+NO_x 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+NO_x 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+NO_x 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+NO_x 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+NO_x 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+NO_x 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 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.~~

Introduction. This section 1961.2.1.1 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 1961.2.1.1 in 2020 and subsequent model years.

Pooling Provision.

For each model year, a manufacturer must demonstrate compliance with this section 1961.2.1.1 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 1961.2.1.1 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 1961.2.1.1 means California, the District of Columbia, and all states that adopted California's criteria pollutant emission standards set forth in this section 1961.2.1.1 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 (1) 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.

<u>LEV III Exhaust Mass Emission Standards for New 2015 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles</u>						
<u>Vehicle Type</u>	<u>Durability Vehicle Basis (mi)</u>	<u>Vehicle Emission Category²</u>	<u>NMOG + Oxides of Nitrogen (g/mi)</u>	<u>Carbon Monoxide (g/mi)</u>	<u>Formaldehyde (mg/mi)</u>	<u>Particulates¹ (g/mi)</u>
<u>All PCs;</u> <u>LDTs 8,500 lbs. GVWR or less;</u> <u>MDPVs</u> <u>Vehicles in this category are tested at their loaded vehicle weight</u>	<u>150,000</u>	<u>LEV160</u>	<u>0.160</u>	<u>4.2</u>	<u>4</u>	<u>0.01</u>
		<u>ULEV125</u>	<u>0.125</u>	<u>2.1</u>	<u>4</u>	<u>0.01</u>
		<u>ULEV70</u>	<u>0.070</u>	<u>1.7</u>	<u>4</u>	<u>0.01</u>
		<u>ULEV50</u>	<u>0.050</u>	<u>1.7</u>	<u>4</u>	<u>0.01</u>
		<u>SULEV30</u>	<u>0.030</u>	<u>1.0</u>	<u>4</u>	<u>0.01</u>
		<u>SULEV20</u>	<u>0.020</u>	<u>1.0</u>	<u>4</u>	<u>0.01</u>
<u>MDVs</u> <u>8,501 - 10,000 lbs. GVWR</u>	<u>150,000</u>	<u>LEV395</u>	<u>0.395</u>	<u>6.4</u>	<u>6</u>	<u>0.12</u>
		<u>ULEV340</u>	<u>0.340</u>	<u>6.4</u>	<u>6</u>	<u>0.06</u>
		<u>ULEV250</u>	<u>0.250</u>	<u>6.4</u>	<u>6</u>	<u>0.06</u>

<u>Vehicles in this category are tested at their adjusted loaded vehicle weight</u>		<u>ULEV200</u>	<u>0.200</u>	<u>4.2</u>	<u>6</u>	<u>0.06</u>
		<u>SULEV170</u>	<u>0.170</u>	<u>4.2</u>	<u>6</u>	<u>0.06</u>
		<u>SULEV150</u>	<u>0.150</u>	<u>3.2</u>	<u>6</u>	<u>0.06</u>
<u>MDVs</u> <u>10,001-14,000 lbs.</u> <u>GVWR</u> <u>Vehicles in this category are tested at their adjusted loaded vehicle weight</u>	<u>150,000</u>	<u>LEV630</u>	<u>0.630</u>	<u>7.3</u>	<u>6</u>	<u>0.12</u>
		<u>ULEV570</u>	<u>0.570</u>	<u>7.3</u>	<u>6</u>	<u>0.06</u>
		<u>ULEV400</u>	<u>0.400</u>	<u>7.3</u>	<u>6</u>	<u>0.06</u>
		<u>ULEV270</u>	<u>0.270</u>	<u>4.2</u>	<u>6</u>	<u>0.06</u>
		<u>SULEV230</u>	<u>0.230</u>	<u>4.2</u>	<u>6</u>	<u>0.06</u>
		<u>SULEV200</u>	<u>0.200</u>	<u>3.7</u>	<u>6</u>	<u>0.06</u>

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.

(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).

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

<u>2027</u>	<u>25</u>	<u>75</u>
<u>2028 and subsequent</u>	<u>0</u>	<u>100</u>

(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.

<u>LEV III Particulate Emission Standard Values for Medium-Duty Vehicles, Other than Medium-Duty Passenger Vehicles</u>	
<u>Vehicle Type¹</u>	<u>Particulates (mg/mi)</u>
<u>MDVs</u> <u>8,501 - 10,000 lbs. GVWR,</u> <u>excluding MDPVs</u>	<u>8</u>
<u>MDVs</u> <u>10,001 - 14,000 lbs. GVWR</u>	<u>10</u>

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.

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

(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 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 exhaust emission standards for NMOG+NO_x 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 C 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+NO_x 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, 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 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.

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

(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)			
<u>Vehicle Emission Category</u>	<u>NMOG + NO_x</u> <u>(g/mi)</u>		<u>HCHO</u> <u>(g/mi)</u>
	<u>Gasoline</u>	<u>Alcohol Fuel</u>	<u>Both Gasoline and Alcohol Fuel</u>
<u>LEV395</u>	<u>0.790</u>	<u>0.790</u>	<u>0.064</u>
<u>ULEV340</u>	<u>0.680</u>	<u>0.680</u>	<u>0.032</u>
<u>ULEV250</u>	<u>0.500</u>	<u>0.500</u>	<u>0.032</u>
<u>ULEV200</u>	<u>0.400</u>	<u>0.500</u>	<u>0.016</u>
<u>SULEV170</u>	<u>0.340</u>	<u>0.425</u>	<u>0.016</u>
<u>SULEV150</u>	<u>0.300</u>	<u>0.375</u>	<u>0.016</u>
<u>LEV630</u>	<u>1.260</u>	<u>1.260</u>	<u>0.080</u>
<u>ULEV570</u>	<u>1.140</u>	<u>1.140</u>	<u>0.042</u>
<u>ULEV400</u>	<u>0.800</u>	<u>0.800</u>	<u>0.042</u>
<u>ULEV270</u>	<u>0.540</u>	<u>0.675</u>	<u>0.020</u>
<u>SULEV230</u>	<u>0.460</u>	<u>0.575</u>	<u>0.020</u>
<u>SULEV200</u>	<u>0.400</u>	<u>0.500</u>	<u>0.020</u>

(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)

<u>Vehicle Type</u>	<u>Carbon Monoxide</u>
All PCs, LDTs 0-3750 lbs. LVW;	<u>10.0</u>
LDTs, 3751 lbs. LVW - 8500 lbs. GVWR; MDPVs 10,000 lbs. GVWR and less	<u>12.5</u>

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 + NO_x Standard. The maximum emissions of non-methane organic gas plus oxides of nitrogen measured on the federal Highway Fuel Economy Test (HWFET; 40 CFR 600 Subpart B), 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+NO_x standard set forth in subsection (a)(1). Both the sum of the NMOG+NO_x 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+NO_x 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+NO_x and CO Stand-Alone Exhaust Emission Standards set forth in subsection (a)(7)(A)1, or in accordance with the SFTP NMOG+NO_x 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. In the case of fuel-flexible vehicles, 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."

<u>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</u>						
<u>Vehicle Type</u>	<u>Durability Vehicle Basis (mi)</u>	<u>Vehicle Emission Category¹</u>	<u>US06 Test (g/mi)</u>		<u>SC03 Test (g/mi)</u>	
			<u>NMOG + NOx</u>	<u>CO</u>	<u>NMOG + NOx</u>	<u>CO</u>
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.

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. In the case of fuel-flexible vehicles, 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.”

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

$$\text{Composite Emission Value} = 0.28 \times \text{US06} + 0.37 \times \text{SC03} + 0.35 \times \text{FTP} \quad [\text{Eq.1}]$$

where

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

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

"FTP" = the test group's NMOG+NO_x 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+NO_x composite emission standard applicable to the model year, manufacturers shall use a sales-weighted fleet average of the NMOG+NO_x 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+NO_x, 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+NO_x sales-weighted fleet-average composite emission value for the fleet and the CO composite emission value for each test group shall not exceed:

(g/mi) ¹

4.2

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 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. 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.

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.

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$$\frac{\left[\sum_{i=1}^n (\text{number of vehicles in the test group})_i \times (\text{composite value of bin})_i \right]}{\sum_{i=1}^n (\text{number of vehicles in the test group})_i} \quad [\text{Eq. 2}]$$

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.

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

$$\frac{[(\text{NMOG+NOx Composite Emission Standard}) - (\text{Manufacturer's Sales-Weighted Fleet-Average Composite Emission Value})] \times (\text{Total Number of Vehicles Produced and Delivered for Sale in California in the 0-8,500 lbs. GVWR plus MDPVs classes, if applicable.})}{[\text{Eq. 3}]}$$

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 not be able to meet 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 are not subject to this CO emission standard.

(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, 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." 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).

<u>SFTP PM Exhaust Emission Standards for 2017 and Subsequent Model LEV III Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles¹</u>				
<u>Vehicle Type</u>	<u>Test Weight</u>	<u>Mileage for Compliance</u>	<u>Test Cycle</u>	<u>PM (mg/mi)</u>
All PCs; LDTs 0-6,000 lbs. GVWR	Loaded vehicle weight	150,000	US06	10
LDTs 6,001-8,500 lbs. GVWR; MDPVs	Loaded vehicle weight	150,000	US06	20

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.

(C) SFTP NMOG+NO_x and CO Exhaust Emission Standards for Medium-Duty Vehicles. The following standards are the maximum NMOG+NO_x 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, 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." 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						
<u>Vehicle Type</u>	<u>Mileage for Compliance</u>	<u>HP/GVWR²</u>	<u>Test Cycle^{3,4,5}</u>	<u>Vehicle Emission Category⁶</u>	<u>Composite Emission Standard¹ (g/mi)</u>	
					<u>NMOG + NOx</u>	<u>Carbon Monoxide</u>
<u>MDVs 8,501 - 10,000 lbs. GVWR</u>	<u>150,000</u>	<u>≤ 0.024</u>	<u>US06 Bag 2, SC03, FTP</u>	<u>ULEV</u>	<u>0.550</u>	<u>22.0</u>
				<u>SULEV</u>	<u>0.350</u>	<u>12.0</u>
		<u>> 0.024</u>	<u>Full US06, SC03, FTP</u>	<u>ULEV</u>	<u>0.800</u>	<u>22.0</u>
				<u>SULEV</u>	<u>0.450</u>	<u>12.0</u>
<u>MDVs 10,001-14,000 lbs. GVWR</u>	<u>150,000</u>	<u>n/a</u>	<u>Hot 1435 UC (Hot 1435 LA92), SC03, FTP</u>	<u>ULEV</u>	<u>0.550</u>	<u>6.0</u>
				<u>SULEV</u>	<u>0.350</u>	<u>4.0</u>

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) 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, for each model year, the percentage of MDVs certified to an SFTP emission category set forth in this section 1961.2.1 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 1961.2.1 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.

(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, 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." 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 Vehicles¹					
<u>Vehicle Type</u>	<u>Test Weight</u>	<u>Mileage for Compliance</u>	<u>Hp/GVWR²</u>	<u>Test Cycle^{3,4}</u>	<u>PM (mg/mi)</u>
<u>MDVs 8,501-10,000 lbs. GVWR</u>	<u>Adjusted loaded vehicle weight</u>	<u>150,000</u>	<u>≤ 0.024</u>	<u>US06 Bag 2</u>	<u>7</u>
			<u>>0.024</u>	<u>US06</u>	<u>10</u>
<u>MDVs 10,001-14,000 lbs. GVWR</u>	<u>Adjusted loaded vehicle weight</u>	<u>150,000</u>	<u>n/a</u>	<u>Hot 1435 UC (Hot 1435 LA92)</u>	<u>7</u>

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) instead of a fixed speed fan for MDV SFTP testing.

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.

(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 the LEV III standards.

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.

<u>Emission Category</u>	<u>Durability Vehicle Basis (miles)</u>	<u>LEV III PCs, LDTs, and MDPVs</u>
		<u>NMOG + NOx (g/mi)</u>
<u>LEV160</u>	<u>150,000</u>	<u>n/a</u>
<u>ULEV125</u>	<u>150,000</u>	<u>n/a</u>
<u>ULEV70</u>	<u>150,000</u>	<u>0.098</u>
<u>ULEV50</u>	<u>150,000</u>	<u>0.070</u>
<u>SULEV30</u>	<u>150,000</u>	<u>0.042¹</u>
<u>SULEV20</u>	<u>150,000</u>	<u>0.028¹</u>

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.

<u>Emission Category</u>	<u>Durability Vehicle Basis (miles)</u>	<u>LEV III MDVs (excluding MDPVs) 8,501 - 10,000 lbs. GVW</u>	<u>LEV III MDVs 10,001 - 14,000 lbs. GVW</u>
		<u>NMOG + NOx (g/mi)</u>	<u>NMOG + NOx (g/mi)</u>
<u>LEV395</u>	<u>150,000</u>	<u>n/a</u>	<u>n/a</u>
<u>ULEV340</u>	<u>150,000</u>	<u>n/a</u>	<u>n/a</u>
<u>ULEV250</u>	<u>150,000</u>	<u>0.370</u>	<u>n/a</u>
<u>ULEV200</u>	<u>150,000</u>	<u>0.300</u>	<u>n/a</u>
<u>SULEV170</u>	<u>150,000</u>	<u>0.250</u>	<u>n/a</u>
<u>SULEV150</u>	<u>150,000</u>	<u>0.220</u>	<u>n/a</u>
<u>LEV630</u>	<u>150,000</u>	<u>n/a</u>	<u>n/a</u>
<u>ULEV570</u>	<u>150,000</u>	<u>n/a</u>	<u>n/a</u>
<u>ULEV400</u>	<u>150,000</u>	<u>n/a</u>	<u>0.600</u>
<u>ULEV270</u>	<u>150,000</u>	<u>n/a</u>	<u>0.400</u>
<u>SULEV230</u>	<u>150,000</u>	<u>n/a</u>	<u>0.340</u>
<u>SULEV200</u>	<u>150,000</u>	<u>n/a</u>	<u>0.300</u>

(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+NO_x for the first two model years that they are certified to new standards.

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+NO_x 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+NO_x 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+NO_x 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.

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 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 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.

(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. 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 40oF, 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 + NO_x 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:

<u>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</u> (150,000 mile Durability Vehicle Basis)		
<u>Model Year</u>	<u>Fleet Average NMOG + NOx (grams per mile)</u>	
	<u>All PCs: LDTs 0-3750 lbs. LVW</u>	<u>LDTs 3751 lbs. LVW - 8500 lbs. GVWR: All MDPVs</u>
<u>2014¹</u>	<u>0.107</u>	<u>0.128</u>
<u>2015</u>	<u>0.100</u>	<u>0.119</u>
<u>2016</u>	<u>0.093</u>	<u>0.110</u>
<u>2017</u>	<u>0.086</u>	<u>0.101</u>
<u>2018</u>	<u>0.079</u>	<u>0.092</u>
<u>2019</u>	<u>0.072</u>	<u>0.083</u>
<u>2020</u>	<u>0.065</u>	<u>0.074</u>
<u>2021</u>	<u>0.058</u>	<u>0.065</u>
<u>2022</u>	<u>0.051</u>	<u>0.056</u>
<u>2023</u>	<u>0.044</u>	<u>0.047</u>
<u>2024</u>	<u>0.037</u>	<u>0.038</u>
<u>2025+</u>	<u>0.030</u>	<u>0.030</u>

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:

$$\frac{(\sum [\text{Number of vehicles in a test group excluding off-vehicle charge capable hybrid electric vehicles} \times \text{applicable emission standard}] + \sum [\text{Number of off-vehicle charge capable hybrid electric vehicles in a test group} \times \text{HEV NMOG+NOx contribution factor}])}{\text{Total Number of PCs plus LDT1s Produced and Delivered for sale in California, Including ZEVs and HEVs}}$$

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:

$$\frac{(\sum [\text{Number of vehicles in a test group excluding off-vehicle charge capable hybrid electric vehicles} \times \text{applicable emission standard}] + \sum [\text{Number of off-vehicle charge capable hybrid electric vehicles in a test group} \times \text{HEV NMOG factor}])}{\text{Total Number of LDT2s plus MDPVs Produced and Delivered for sale in California, Including ZEVs and HEVs}}$$

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:

<u>Model Year</u>	<u>Emission Category</u>	<u>Emission Standard Value¹</u> (g/mi)	
		<u>All PCs;</u> <u>LDTs 0-3,750 lbs. LVW</u>	<u>LDTs</u> <u>3,751-5,750 lbs. LVW;</u> <u>All MDPVs</u>
<u>2015 and subsequent model year federally-certified vehicles</u>	<u>All</u>	<u>Sum of the full useful life NMOG and NOx Federal Emission Standards to which Vehicle is Certified</u>	<u>Sum of the full useful life NMOG and NOx Federal Emission Standards to which Vehicle is Certified</u>
<u>Model Year</u>	<u>Emission Category</u>	<u>All PCs;</u> <u>LDTs 0-3,750 lbs. LVW</u>	<u>LDTs</u> <u>3,751 lbs. LVW – 8,500 lbs. GVWR; All MDPVs</u>
<u>2015 through 2019 model year vehicles certified to the “LEV II” standards in subsection 1961(a)(1);</u> <u>2015 and subsequent model year vehicles certified to the “LEV III” standards in subsection 1961.2.1(a)(1)</u>	<u>LEV II LEVs;</u> <u>LEV160s</u>	<u>0.160</u>	<u>0.160</u>
	<u>LEV II ULEVs;</u> <u>LEV125s</u>	<u>0.125</u>	<u>0.125</u>
	<u>ULEV70s</u>	<u>0.070</u>	<u>0.070</u>
	<u>ULEV50s</u>	<u>0.050</u>	<u>0.050</u>
	<u>LEV II SULEVs;</u> <u>SULEV30s</u>	<u>0.030</u>	<u>0.030</u>
	<u>SULEV20s</u>	<u>0.020</u>	<u>0.020</u>
	<u>LEV II LEVs;</u> <u>LEV395s</u>	<u>n/a</u>	<u>0.395</u>
	<u>LEV II ULEVs</u>	<u>n/a</u>	<u>0.343</u>
	<u>ULEV340s</u>	<u>n/a</u>	<u>0.340</u>
	<u>ULEV250s</u>	<u>n/a</u>	<u>0.250</u>
	<u>ULEV200s</u>	<u>n/a</u>	<u>0.200</u>
	<u>SULEV170s</u>	<u>n/a</u>	<u>0.170</u>
	<u>SULEV150s</u>	<u>n/a</u>	<u>0.150</u>

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+NO_x Contribution Factor for Off-vehicle Charge

Capable HEVs. The HEV NMOG+NO_x contribution factor for light-duty off-vehicle charge capable hybrid electric vehicles is calculated as follows:

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 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 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 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.

1. In the 2015 through 2021 model years, a small volume manufacturer shall not exceed a fleet average NMOG+NO_x 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 2024 model years, a small volume manufacturer shall not exceed a fleet average NMOG+NO_x 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 2025 and subsequent model years, a small volume manufacturer shall not exceed a

fleet average NMOG+NOx value of 0.070 g/mi for PCs and LDTs from 0-3750 lbs. LVW or 0.070 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 1961.2.1.

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

<u>Model Year</u>	<u>Vehicles Certified to §1961.2.1(a)(1) (%)</u>				<u>Vehicles Certified to §1956.8(c) or (h) (%)</u>
	<u>LEV II LEV: LEV III LEV395 or LEV630</u>	<u>LEV II ULEV: LEV III ULEV340 or ULEV570</u>	<u>LEV III ULEV250 or ULEV400</u>	<u>LEV III SULEV170 or SULEV230</u>	<u>ULEV</u>
<u>2015</u>	<u>40</u>	<u>60</u>	<u>0</u>	<u>0</u>	<u>100</u>
<u>2016</u>	<u>20</u>	<u>60</u>	<u>20</u>	<u>0</u>	<u>100</u>
<u>2017</u>	<u>10</u>	<u>50</u>	<u>40</u>	<u>0</u>	<u>100</u>
<u>2018</u>	<u>0</u>	<u>40</u>	<u>50</u>	<u>10</u>	<u>100</u>
<u>2019</u>	<u>0</u>	<u>30</u>	<u>40</u>	<u>30</u>	<u>100</u>
<u>2020</u>	<u>0</u>	<u>20</u>	<u>30</u>	<u>50</u>	<u>100</u>
<u>2021</u>	<u>0</u>	<u>10</u>	<u>20</u>	<u>70</u>	<u>100</u>
<u>2022 +</u>	<u>0</u>	<u>0</u>	<u>10</u>	<u>90</u>	<u>100</u>

(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. 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 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.

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

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

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

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

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

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

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

(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 manufacturers' total production of California-certified medium-duty vehicles delivered for sale in California. A manufacturer that elects to certify to the optional medium-duty engine standards in subsections 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, for each model year, the percentage of MDVs certified to an SFTP emission category set forth in this section 1961.2.1 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 1961.2.1 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.

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 subsections 1956.8(c) or (h) shall not count those engines in the manufacturer's total production of California-certified medium duty vehicles for purposes of this subparagraph.

(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:
$$[(\text{Fleet Average NMOG+NOx Requirement}) - (\text{Manufacturer's Fleet Average NMOG+NOx Value})] \times$$

$$(\text{Total No. of Vehicles Produced and Delivered for Sale in California, Including ZEVs and HEVs}).$$

(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 Vehicle-Equivalent NMOG + NOx Credits for Medium-Duty Vehicles Other than MDPVs.

(A) 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:

$$\begin{aligned} & (1.00) \times [(\text{No. of LEV395s and LEV630s Produced excluding HEVs}) + \\ & (\text{No. of LEV395 HEVs} \times \text{HEV VEC factor for LEV395s}) + \\ & (\text{No. of LEV630 HEVs} \times \text{HEV VEC factor for LEV630s})] - \\ & (\text{No. of LEV395s and LEV630s Required to be Produced}) + \\ & (1.14) \times [(\text{No. of ULEV340s and ULEV570s Produced excluding HEVs}) + \\ & (\text{No. of ULEV340 HEVs} \times \text{HEV VEC factor for ULEV340s}) + \\ & (\text{No. of ULEV570 HEVs} \times \text{HEV VEC factor for ULEV570s})] - \\ & (\text{No. of ULEV340s and ULEV570s Required to be Produced}) + \\ & (1.37) \times [(\text{No. of ULEV250s and ULEV400s Produced excluding HEVs}) + \\ & (\text{No. of ULEV250 HEVs} \times \text{HEV VEC factor for ULEV250s}) + \\ & (\text{No. of ULEV400 HEVs} \times \text{HEV VEC factor for ULEV400s})] - \\ & (\text{No. of ULEV250s and ULEV400s Required to be Produced}) + \\ & (1.49) \times [(\text{No. of ULEV200s and ULEV270s Produced excluding HEVs}) + \\ & (\text{No. of ULEV200 HEVs} \times \text{HEV VEC factor for ULEV200s}) + \\ & (\text{No. of ULEV270 HEVs} \times \text{HEV VEC factor for ULEV270s})] - \\ & (\text{No. of ULEV200s and ULEV270s Required to be Produced}) + \\ & (1.57) \times [(\text{No. of SULEV170s and SULEV230s Produced excluding HEVs}) + \\ & (\text{No. of SULEV170 HEVs} \times \text{HEV VEC factor for SULEV170s}) + \\ & (\text{No. of SULEV230 HEVs} \times \text{HEV VEC factor for SULEV230s})] - \end{aligned}$$

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

$$\text{For LEV395s: } 1 + \left[\frac{(\text{LEV395 standard} - \text{ULEV340 standard}) \times \text{Zero-emission VMT Allowance}}{\text{LEV395 standard}} \right]_{\text{1}}$$

$$\text{For ULEV340s: } 1 + \left[\frac{(\text{ULEV340 standard} - \text{ULEV250 standard}) \times \text{Zero-emission VMT Allowance}}{\text{ULEV340 standard}} \right]_{\text{1}}$$

$$\text{For ULEV250s: } 1 + \left[\frac{(\text{ULEV250 standard} - \text{ULEV200 standard}) \times \text{Zero-emission VMT Allowance}}{\text{ULEV250 standard}} \right]_{\text{1}}$$

$$\text{For ULEV200s: } 1 + \left[\frac{(\text{ULEV200 standard} - \text{SULEV170 standard}) \times \text{Zero-emission VMT Allowance}}{\text{ULEV200 standard}} \right]_{\text{1}}$$

$$\text{For SULEV170s: } 1 + \left[\frac{(\text{SULEV170 standard} - \text{SULEV150 standard}) \times \text{Zero-emission VMT Allowance}}{\text{SULEV170 standard}} \right]_{\text{1}}$$

$$\text{For SULEV150s: } 1 + \left[\frac{(\text{SULEV150 standard} - \text{ZEV standard}) \times \text{Zero-emission VMT Allowance}}{\text{SULEV150 standard}} \right]_{\text{1}}$$

$$\text{For LEV630s: } 1 + \left[\frac{(\text{LEV630 standard} - \text{ULEV570 standard}) \times \text{Zero-emission VMT Allowance}}{\text{LEV630 standard}} \right]_{\text{1}}$$

$$\text{For ULEV570s: } 1 + \left[\frac{(\text{ULEV570 standard} - \text{ULEV400 standard}) \times \text{Zero-emission VMT Allowance}}{\text{ULEV570 standard}} \right]$$

$$\text{For ULEV400s: } 1 + \left[\frac{(\text{ULEV400 standard} - \text{ULEV270 standard}) \times \text{Zero-emission VMT Allowance}}{\text{ULEV400 standard}} \right]$$

$$\text{For ULEV270s: } 1 + \left[\frac{(\text{ULEV270 standard} - \text{SULEV230 standard}) \times \text{Zero-emission VMT Allowance}}{\text{ULEV270 standard}} \right]$$

$$\text{For SULEV230s: } 1 + \left[\frac{(\text{SULEV230 standard} - \text{SULEV200 standard}) \times \text{Zero-emission VMT Allowance}}{\text{SULEV230 standard}} \right]$$

$$\text{For SULEV200s: } 1 + \left[\frac{(\text{SULEV200 standard} - \text{ZEV standard}) \times \text{Zero-emission VMT Allowance}}{\text{SULEV200 standard}} \right]$$

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) 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).

(D) Only ZEVs certified as MDVs and not used to meet the ZEV requirement shall be included in the calculation of VECs.

(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 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.

(B) 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+NO_x 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+NO_x 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).

(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," as amended December 6, 2012, which are 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 1961.2.1:

"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.

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.

§ 1962.1.1 Zero-Emission Vehicle Standards for 2009 and through 2017 Model Year 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.

(a) ZEV Emission Standard. The Executive Officer shall certify new 2009 through 2017 model year passenger cars, light-duty trucks and medium-duty vehicles as ZEVs if the vehicles produce zero exhaust emissions of any criteria pollutant (or precursor pollutant) under any and all possible operational modes and conditions.

(b) Percentage ZEV Requirements.

(1) General Percentage ZEV Requirement.

(A) Basic Requirement. The minimum percentage ZEV requirement for each manufacturer is listed in the table below as the percentage of the PCs and LDT1s, and LDT2s to the extent required by subdivision (b)(1)(C), produced by the manufacturer and delivered for sale in California that must be ZEVs, subject to the conditions in this subdivision 1962.1.1(b). The ZEV requirement will be based on the annual NMOG production report for the appropriate model year.

<u>Model Years</u>	<u>Minimum ZEV Requirement</u>
<u>2009 through 2011</u>	<u>11 %</u>
<u>2012 through 2014</u>	<u>12 %</u>
<u>2015 through 2017</u>	<u>14 %</u>

(B) Calculating the Number of Vehicles to Which the Percentage ZEV Requirement is Applied. For purposes of calculating a manufacturer's requirement in subdivision 1962.1.1(b)(1) for model years 2009 through 2017, a manufacturer may use a three year average method or same model year method, as described below in sections 1. and 2. A manufacturer may switch methods on an annual basis. This production averaging is used to determine ZEV requirements specified in subdivision 1962.1.1 (b)(1)(A) only, and has no effect on a manufacturer's size determination, specified in section 1900. In applying the ZEV requirement, a PC, LDT1, or LDT2, that is produced by one manufacturer (e.g.,

Manufacturer A), but is marketed in California by another manufacturer (e.g., Manufacturer B) under the other manufacturer's (Manufacturer B) nameplate, shall be treated as having been produced by the marketing manufacturer (Manufacturer B).

1. For the 2009 through 2011 model years, a manufacturer's production volume of PCs and LDT1s, and LDT2s as applicable, produced and delivered for sale in California will be based on the three-year average of the manufacturer's volume of PCs and LDT1s, and LDT2s as applicable, produced and delivered for sale in California in the 2003 through 2005 model years. As an alternative to the three-year averaging of prior year production described above, a manufacturer may elect to base its ZEV obligation on the number of PCs and LDT1s, and LDT2s, as applicable, produced by the manufacturer and delivered for sale in California that same model year.
2. For 2012 through 2017 model years, a manufacturer's production volume for the given model year will be based on the three-year average of the manufacturer's volume of PCs and LDTs, produced and delivered for sale in California in the prior fourth, fifth and sixth model year [for example, 2013 model year ZEV requirements will be based on California production volume of PCs and LDTs, for the 2007 to 2009 model years, and 2014 model year ZEV requirements will be based on California production volume of PCs and LDTs, for the 2008 to 2010 model years]. As an alternative to the three-year averaging of prior year production described above, a manufacturer may elect to base its ZEV obligation on the number of PCs and LDTs, produced by the manufacturer and delivered for sale in California that same model year.

(C) Phase-in of ZEV Requirements for LDT2s. Beginning with the ZEV requirements for the 2009 model year, a manufacturer's LDT2 production shall be included in determining the manufacturer's overall ZEV requirement under subdivision (b)(1)(A) in the increasing percentages shown in the table below.

<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012+</u>
<u>51%</u>	<u>68%</u>	<u>85%</u>	<u>100%</u>

(D) Exclusion of ZEVs in Determining a Manufacturer's Sales Volume. In calculating, for purposes of subdivisions 1962.1.1(b)(1)(B) and

1962.1.1(b)(1)(C), the volume of PCs, LDT1s, and LDT2s that a manufacturer has produced and delivered for sale in California, the manufacturer shall exclude the number of ZEVs produced by the manufacturer, or by a subsidiary in which that manufacturer has a greater than 50 percent ownership interest, and delivered for sale in California.

(2) Requirements for Large Volume Manufacturers.

(A) Primary Requirements for Large Volume Manufacturers through Model Year 2011.

In the 2009 through 2011 model years, a manufacturer must meet at least 22.5 percent of its ZEV requirement with ZEVs or ZEV credits generated by such vehicles, and at least another 22.5 percent with ZEVs, AT PZEVs, or credits generated by such vehicles. The remainder of the manufacturer's ZEV requirement may be met using PZEVs or credits generated by such vehicles.

(B) Alternative Requirements for Large Volume Manufacturers through Model Year 2011.

1. Minimum Floor for Production of Type III ZEVs.

a. [Reserved].

b. Requirement for the 2009-2011 Model Years. A manufacturer electing the alternative compliance requirements during model years 2009 through 2011 must produce ZEV credits equal to 0.82 percent of the manufacturer's average annual California sales of PCs and LDT1s, and LDT2s, as applicable, over the three-year period from model years 2003 through 2005, through production, delivery for sale, and placement in service of ZEVs, other than NEVs and Type 0 ZEVs, using the credit substitution ratios for each ZEV Type compared to a Type III prescribed in the table below, or submit an equivalent number of credits generated by such vehicles.

<u>ZEV Types</u>	<u>Credit Substitution Ratio Compared To A Type III ZEV</u>
<u>Type I</u>	<u>2</u>
<u>Type I.5</u>	<u>1.6</u>
<u>Type II</u>	<u>1.33</u>
<u>Type IV</u>	<u>0.8</u>
<u>Type V</u>	<u>0.57</u>

- i. Manufacturers may use credits generated by 1997-2003 model year ZEVs that qualify for an extended service multiplier under subdivision 1962.1.1(f) for a year during calendar years 2009-2011, provided that 33 years of such a multiplier will equal 4 ZEV credits.

c. [Reserved].

d. [Reserved].

e. [Reserved].

- f. Exclusion of Additional Credits for Transportation Systems. Any additional credits for transportation systems generated in accordance with subdivision 1962.1.1(g)(5) shall not be counted towards compliance with this subdivision 1962.1.1(b)(2)(B)1.b.

- g. Carry-over of Excess Credits. ZEV credits generated from excess production in model years 2005 through 2008 may be carried forward and applied to the 2009 through 2011 minimum floor requirement specified in subdivision 1962.1.1(b)(2)(B)1.b. provided that the value of these carryover credits shall be based on the model year in which the credits are used. Beginning with the 2012 model year, these credits may no longer be used to meet the ZEV requirement specified in subdivision 1962.1.1(b)(2)(B)1.b.; they may be used as TZEV, AT PZEV, or PZEV credits. ZEV credits earned in model year 2009 through 2011 would be allowed to be carried forward for two years for application to the ZEV requirement. For example, ZEV credit earned in the 2010 model year would retain full flexibility through the 2012 model year. Starting 2013 model year, that credit could only be used as TZEV, AT PZEV, or PZEV credits, and could not be used to satisfy the ZEV credit obligation, which

may only be satisfied with credit generated from ZEVs.

h. *Failure to Meet Requirement for Production of ZEVs.*

A manufacturer that, after electing the alternative requirements in subdivision 1962.1.1(b)(2)(B) for any model year from 2009 through 2011, fails to meet the requirement in subdivision 1962.1.1(b)(2)(B)1.b. by the end of the 2011 model year, shall be treated as subject to the primary requirements in subdivision 1962.1.1(b)(2)(A) for the 2009 through 2011 model years.

i. *Rounding Convention.* The number of ZEVs needed for a manufacturer under subdivision 1962.1.1(b)(2)(B)1.b. shall be rounded to the nearest whole number.

2. *Compliance with Percentage ZEV Requirements.* In the 2009 through 2011 model years, a manufacturer electing the alternative compliance requirements in a given model year must meet at least 45 percent of its ZEV requirement for that model year with ZEVs, AT PZEVs, TZEVS, or credits generated from such vehicles. ZEV credits generated for compliance with the alternative requirements during any given model year will be applied to the 45 percent which may be met with ZEVs, AT PZEVs, TZEVS, or credits generated from such vehicles, but not PZEVs. The remainder of the manufacturer's ZEV requirement may be met using PZEVs or credits generated from such vehicles.

3. *Sunset of Alternative Requirements after the 2011 Model Year.* The alternative requirements in subdivision 1962.1.1(b)(2)(B) are not available after the 2011 model year.

(C) *Election of the Primary or Alternative Requirements for Large Volume Manufacturers for the 2009 through 2011 Model Years.* A manufacturer shall be subject to the primary ZEV requirements for the 2009 model year unless it notifies the Executive Officer in writing prior to the start of the 2009 model year that it is electing to be subject to the alternative compliance requirements for that model year. Thereafter, a manufacturer shall be subject to the same compliance option as applied in the previous model year unless it notifies the Executive Officer in writing prior to the start of a new model year that it is electing to switch to the other compliance option for that new model year. However, a manufacturer that has previously elected the primary ZEV requirements for one or more of

the 2009 through 2011 model years may prior to the end of the 2011 model year elect the alternative compliance requirements for the 2009 through 2011 model years upon a demonstration that it has complied with all of the applicable requirements for that period in subdivision 1962.1.1(b)(2)(B)1.b.

(D) Requirements for Large Volume Manufacturers in Model Years 2012 through 2017.

1. *2012 through 2014 Requirements.* On an annual basis, a manufacturer must meet the total ZEV obligation with ZEV credits generated by such vehicles, excluding credits generated by NEVs and Type 0 ZEVs, equal to at least 0.79% of its annual sales, using either production volume determination method described in subdivision 1962.1.1(b)(1)(B). No more than 50% of the total obligation may be met with credits generated from PZEVs. No more than 75% of the total obligation may be met with credits generated from AT PZEVs. No more than 93.4% may be met with credits generated from TZEVs, Type 0 ZEVs, and NEVs, as limited in subdivision 1962.1.1(g)(6). The entire obligation may be met solely with credits generated from ZEVs.
2. *2015 through 2017 Requirements.* On an annual basis, a manufacturer must meet its ZEV obligation with ZEV credits generated by such vehicles, excluding credits generated by NEVs and Type 0 ZEVs, equal to at least 3% of its annual sales, using either production volume determination method described in subdivision 1962.1.1(b)(1)(B). No more than 42.8% of the total obligation may be met with credits generated from PZEVs. No more than 57.1% of the total obligation may be met with credits generated from AT PZEVs. No more than 78.5% may be met with credits generated from TZEVs, Type 0 ZEVs, and NEVs, as limited in subdivision 1962.1.1(g)(6). The entire obligation may be met solely with credits generated from ZEVs.
3. The following table enumerates a manufacturer's annual percentage obligation for the 2012 through 2017 model years if the manufacturer produces the minimum number of credits required to meet its ZEV obligation and the maximum percentage for the TZEV, AT PZEV, and PZEV categories.

<u>Model Years</u>	<u>Total ZEV Percent Requirement</u>	<u>Minimum ZEV floor</u>	<u>TZEVs, Type 0s, or NEVs</u>	<u>AT PZEVs</u>	<u>PZEVs</u>
<u>2012 – 2014</u>	<u>12</u>	<u>0.79</u>	<u>2.21</u>	<u>3.0</u>	<u>6.0</u>
<u>2015 – 2017</u>	<u>14</u>	<u>3.0</u>	<u>3.0</u>	<u>2.0</u>	<u>6.0</u>

4. Use of Additional Credits for Transportation Systems. Any additional credits for transportation systems generated from ZEVs in accordance with subdivision 1962.1.1(g)(5) may be used to meet up to one tenth of the portion of the ZEV obligation which must be met with ZEVs, specified in subdivision 1962.1.1(b)(2)(D).

(E) [Reserved]

(3) Requirements for Intermediate Volume Manufacturers. For 2009 through 2017 model years, an intermediate volume manufacturer may meet its ZEV requirement with up to 100 percent PZEVs or credits generated by such vehicles. For 2015 through 2017 model years, the overall credit percentage requirement for an intermediate volume manufacturer will be 12%.

(4) Requirements for Small Volume Manufacturers and Independent Low Volume Manufacturers. A small volume manufacturer or an independent low volume manufacturer is not required to meet the percentage ZEV requirements. However, a small volume manufacturer or an independent low volume manufacturer may earn and market credits for the ZEVs, TZEVs, AT PZEVs or PZEVs it produces and delivers for sale in California.

(5) [Reserved].

(6) [Reserved].

(7) Changes in Small Volume, Independent Low Volume, and Intermediate Volume Manufacturer Status.

(A) Increases in California Production Volume. In 2009 through 2017 model years, if a small volume manufacturer's average California production volume exceeds 4,500 units of new PCs, LDTs, and MDVs based on the average number of vehicles produced and delivered for sale for the three previous consecutive model years, or if an independent low volume manufacturer's average California production volume exceeds 10,000

units of new PCs, LDTs, and MDVs based on the average number of vehicles produced and delivered for sale for the three previous consecutive model years, the manufacturer shall no longer be treated as a small volume, or independent low volume manufacturer, as applicable, and shall comply with the ZEV requirements for intermediate volume manufacturers, as applicable, beginning with the sixth model year after the last of the three consecutive model years. If an intermediate volume manufacturer's average California production volume exceeds 60,000 units of new PCs, LDTs, and MDVs based on the average number of vehicles produced and delivered for sale for the three previous consecutive model years (i.e., total production volume exceeds 180,000 vehicles in a three-year period), the manufacturer shall no longer be treated as an intermediate volume manufacturer and shall, beginning with the sixth model year after the last of the three consecutive model-years, or in model year 2018 (whichever occurs first), comply with all ZEV requirements for LVMs. Requirements will begin in the sixth model year, or in model year 2018 (whichever occurs first) when a manufacturer ceases to be an intermediate volume manufacturer in 2003 through 2017 due to the aggregation requirements in majority ownership situation.

(B) *Decreases in California Production Volume.* If a manufacturer's average California production volume falls below 4,500, 10,000, or 60,000 units of new PCs, LDTs, and MDVs, based on the average number of vehicles produced and delivered for sale for the three previous consecutive model years, the manufacturer shall be treated as a small volume, independent low volume, or intermediate volume manufacturer, as applicable, and shall be subject to the requirements for a small volume, independent low volume, or intermediate volume manufacturer beginning with the next model year.

(C) *Calculating California Production Volume in Change of Ownership Situations.* Where a manufacturer experiences a change in ownership in a particular model year, the change will affect application of the aggregation requirements on the manufacturer starting with the next model year. When a manufacturer is simultaneously producing two model years of vehicles at the time of a change of ownership, the basis of determining next model year must be the earlier model year. The manufacturer's small, independent low, or intermediate volume manufacturer status for the next model year shall be based on the average California production volume in the three previous consecutive model years of those manufacturers whose

production volumes must be aggregated for that next model year. For example, where a change of ownership during the 2010 calendar year occurs and the manufacturer is producing both 2010 and 2011 model year vehicles resulting in a requirement that the production volume of Manufacturer A be aggregated with the production volume of Manufacturer B, Manufacturer A's status for the 2011 model year will be based on the production volumes of Manufacturers A and B in the 2008-2010 model years. Where the production volume of Manufacturer A must be aggregated with the production volumes of Manufacturers B and C for the 2010 model year, and during that model year a change in ownership eliminates the requirement that Manufacturer B's production volume be aggregated with Manufacturer A's, Manufacturer A's status for the 2011 model year will be based on the production volumes of Manufacturers A and C in the 2008-2010 model years. In either case, the lead time provisions in subdivisions 1962.1.1(b)(7)(A) and (B) will apply.

(c) Partial ZEV Allowance Vehicles (PZEVs).

(1) Introduction. This subdivision 1962.1.1(c) sets forth the criteria for identifying vehicles delivered for sale in California as PZEVs. The PZEV is a vehicle that cannot be certified as a ZEV but qualifies for a PZEV allowance of at least 0.2.

(2) Baseline PZEV Allowance. In order for a vehicle to be eligible to receive a PZEV allowance, the manufacturer must demonstrate compliance with all of the following requirements. A qualifying vehicle will receive a baseline PZEV allowance of 0.2.

(A) SULEV Standards. For 2009 through 2013 model years, certify the vehicle to the 150,000-mile SULEV exhaust emission standards for PCs and LDTs in subdivision 1961(a)(1). Bi-fuel, fuel flexible and dual-fuel vehicles must certify to the applicable 150,000-mile SULEV exhaust emission standards when operating on both fuels. For 2014 through 2017 model years, certify the vehicle to the 150,000-mile SULEV 20 or 30 exhaust emission standards for PCs and LDTs in subdivision 1961.2(a)(1), or to the 150,000-mile SULEV exhaust emission standards for PCs and LDTs in subdivision 1961(a)(1). Bi-fuel, fuel flexible and dual-fuel vehicles must certify to the applicable 150,000-mile SULEV exhaust emission standards when operating on both fuels;

(B) *Evaporative Emissions*. For 2009 through 2013 model years, certify the vehicle to the evaporative emission standards in subdivision 1976(b)(1)(E) (zero-fuel evaporative emissions standards). For 2014 through 2017 model years, certify the vehicle to the evaporative emission standards in subdivision 1976(b)(1)(G) or subdivision 1976(b)(1)(E);

(C) *OBD*. Certify that the vehicle will meet the applicable on-board diagnostic requirements in sections 1968.1 or 1968.2, as applicable, for 150,000 miles; and

(D) *Extended Warranty*. Extend the performance and defects warranty period set forth in subdivision 2037(b)(2) and 2038(b)(2) 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 used for traction power (such as a battery, ultracapacitor, or other electric storage device).

(3) *Zero-Emission VMT PZEV Allowance*.

(A) *Calculation of Zero-Emission VMT Allowance*. A vehicle that meets the requirements of subdivision 1962.1.1(c)(2) and has zero-emission vehicle miles traveled (VMT") capability will generate an additional zero-emission VMT PZEV allowance calculated as follows:

<u><i>Range</i></u>	<u><i>Zero-emission VMT Allowance</i></u>
<u>$EAER_u < 10 \text{ miles}$</u>	<u>0.0</u>
<u>$EAER_u \geq 10 \text{ to } 40 \text{ miles}$</u>	<u>$EAER_u \times (1 - UF_{Rcda})/11.028$</u>
<u>$EAER_u > 40 \text{ miles}$</u>	<u>$\frac{3.627 \times (1 - UFn)}{\text{Where: } n = 40 \times (Rcda/EAER_u)}$</u>

A vehicle cannot generate more than 1.39 zero-emission VMT PZEV allowances.

The urban equivalent all-electric range (EAER_u) and urban charge depletion range actual (Rcda) shall be determined in accordance with sections G.11.4 and G.11.9, respectively, 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," adopted December 17, 2008, and last amended December 6, 2012, incorporated

by reference in section 1962.1.1(h). The utility Factor (UF) shall be determined according to SAE International's Surface Vehicle Information Report J2841 SEP2010 (Revised September 2010), incorporated by reference herein, from the Fleet Utility Factors (FUF) Table in Appendix B or using a polynomial curve fit with "FUF Fit" coefficients from Table 2 Utility Factor Equation Coefficients.

(B) *Alternative Procedures.* As an alternative to determining the zero-emission VMT allowance in accordance with the preceding section 1962.1.1(c)(3)(A), a manufacturer may submit for Executive Officer approval an alternative procedure for determining the zero-emission VMT potential of the vehicle as a percent of total VMT, along with an engineering evaluation that adequately substantiates the zero-emission VMT determination. For example, an alternative procedure may provide that a vehicle with zero-emissions of one regulated pollutant (e.g., NO_x) and not another (e.g., NMOG) will qualify for a zero-emission VMT allowance of 1.5.

(4) *PZEV Allowance for Advanced ZEV Componentry.* A vehicle that meets the requirements of subdivision 1962.1.1(c)(2) may qualify for an advanced componentry PZEV allowance as provided in this section 1962.1.1(c)(4).

(A) *Use of High Pressure Gaseous Fuel or Hydrogen Storage System.* A vehicle equipped with a high pressure gaseous fuel storage system capable of refueling at 3600 pounds per square inch or more and operating exclusively on this gaseous fuel shall qualify for an advanced componentry PZEV allowance of 0.2. A vehicle capable of operating exclusively on hydrogen stored in a high pressure system capable of refueling at 5000 pounds per square inch or more, stored in nongaseous form, or at cryogenic temperatures, shall instead qualify for an advanced componentry PZEV allowance of 0.3.

(B) *Use of a Qualifying HEV Electric Drive System.*

1. Classification of HEVs. HEVs qualifying for additional advanced componentry PZEV allowance or allowances that may be used in the AT PZEV category are classified in one of four types of HEVs based on the criteria in the following table.

<u>Characteristics</u>	<u>Type D</u>	<u>Type E</u>	<u>Type F</u>	<u>Type G</u>
<u>Electric Drive System Peak Power Output</u>	<u>≥ 10 kW</u>	<u>≥ 50 kW</u>	<u>Zero-Emission VMT allowance; ≥ 10 mile all-electric UDDS range</u>	<u>Zero-Emission VMT allowance; ≥ 10 mile all-electric US06 range</u>
<u>Traction Drive System Voltage</u>	<u>≥ 60 Volts</u>	<u>≥ 60 volts</u>	<u>≥ 60 volts</u>	<u>≥ 60 volts</u>
<u>Traction Drive Boost</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>
<u>Regenerative Braking</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>
<u>Idle Start/Stop</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>

2. [Reserved]

3. [Reserved]

4. [Reserved]

5. Type D HEVs. A PZEV that the manufacturer demonstrates to the reasonable satisfaction of the Executive Officer meets all of the criteria for a Type D HEV qualifies for an additional advanced componentry allowance of 0.4 in the 2009 through 2011 model years, 0.35 in the 2012 through 2014 model years, and 0.25 in the 2015 through 2017 model years.

6. Type E HEVs. A PZEV that the manufacturer demonstrates to the reasonable satisfaction of the Executive Officer meets all of the criteria for a Type E HEV qualifies for an additional advanced componentry allowance of 0.5 in the 2009 through 2011 model years, 0.45 in the 2012 through 2014 model years, and 0.35 in the 2015 through 2017 model years.

7. Type F HEVs. A PZEV that the manufacturer demonstrates to the reasonable satisfaction of the Executive Officer meets all of the criteria for a Type F HEV, including achieving 10 miles or more of all-electric UDDS range, qualifies for an additional advanced componentry allowance of 0.72 in the 2009 through 2011 model years, 0.67 in the 2012 through 2014 model years, and 0.57 in the 2015 through 2017 model years.

8. Type G HEVs. A PZEV that the manufacturer demonstrates to the reasonable satisfaction of the Executive Officer meets all of the criteria for a Type G HEV, including achieving 10 miles or more of all-electric US06 range, qualifies for an additional advanced componentry allowance of 0.95 in the 2009 through 2011 model years, 0.9 in the 2012 through 2014 model years, and 0.8 in the 2015 through 2017 model years.

9. Severability. In the event that all or part of subdivision 1962.1.1(c)(4)(B)1.-8. is found invalid, the remainder of section 1962.1.1 remains in full force and effect.

(5) PZEV Allowance for Low Fuel-Cycle Emissions. A vehicle that makes exclusive use of fuel(s) with very low fuel-cycle emissions shall receive a PZEV allowance of 0.3. In order to receive the PZEV low fuel-cycle emissions allowance, a manufacturer must demonstrate to the Executive Officer, using peer reviewed studies or other relevant information, that NMOG emissions associated with the fuel(s) used by the vehicle (on a grams/mile basis) are lower than or equal to 0.01 grams/mile. Fuel-cycle emissions must be calculated based on near-term production methods and infrastructure assumptions, and the uncertainty in the results must be quantified.

(6) Calculation of PZEV Allowance.

(A) Calculation of Combined PZEV Allowance for a Vehicle. The combined PZEV allowance for a qualifying vehicle in a particular model year is the sum of the PZEV allowances listed in this subdivision 1962.1.1(c)(6), multiplied by any PZEV introduction phase-in multiplier listed in subdivision 1962.1.1(c)(7), subject to the caps in subdivision 1962.1.1(c)(6)(B).

1. Baseline PZEV Allowance. The baseline PZEV allowance of 0.2 for vehicles meeting the criteria in subdivision 1962.1.1(c)(2);
2. Zero-Emission VMT PZEV Allowance. The zero-emission VMT PZEV allowance, if any, determined in accordance with subdivision 1962.1.1(c)(3);
3. Advanced Componentry PZEV Allowance. The advanced ZEV componentry PZEV allowance, if any, determined in accordance with subdivision 1962.1.1(c)(4); and
4. Fuel-Cycle Emissions PZEV Allowance. The fuel-cycle emissions PZEV allowance, if any, determined in accordance with subdivision 1962.1.1(c)(5).

(B) Caps on the Value of an AT PZEV Allowance.

1. Cap for 2009 through 2017 Model Year Vehicles. The maximum value an AT PZEV may earn before phase-in multipliers, including the baseline PZEV allowance, is 3.0.
2. [Reserved].

(7) PZEV Multipliers.

(A) [Reserved].

(B) Introduction Phase-In Multiplier for PZEVs That Earn a Zero-Emission VMT Allowance. Each 2009 through 2011 model year PZEV that earns a zero-emission VMT allowance under section 1962.1.1(c)(3) and is sold to a California motorist or is leased for three or more years to a California motorist who is given the option to purchase or re-lease the vehicle for two years or more at the end of the first lease term, qualifies for a phase-in multiplier of 1.25. This subdivision 1962.1.1(c)(7)(B) multiplier will no longer be available after model year 2011.

(d) Qualification for ZEV Multipliers and Credits.

(1) [Reserved].

(2) [Reserved].

(3) [Reserved].

(4) [Reserved].

(5) Credits for 2009 through 2017 Model Year ZEVs.

(A) ZEV Tiers for Credit Calculations. Credits from a particular ZEV are based on the assignment of a given ZEV into one of the following eight ZEV tiers:

<u>ZEV Tier</u>	<u>UDDS ZEV Range (miles)</u>	<u>Fast Refueling Capability</u>
<u>NEV</u>	<u>No minimum</u>	<u>N/A</u>
<u>Type 0</u>	<u>< 50</u>	<u>N/A</u>
<u>Type I</u>	<u>≥ 50, <75</u>	<u>N/A</u>
<u>Type I.5</u>	<u>≥ 75, <100</u>	<u>N/A</u>
<u>Type II</u>	<u>≥ 100</u>	<u>N/A</u>
<u>Type III</u>	<u>≥ 100</u>	<u>Must be capable of replacing 95 miles (UDDS ZEV range) in ≤ 10 minutes per section 1962.1.1(d)(5)(B)</u>
	<u>≥ 200</u>	<u>N/A</u>
<u>Type IV</u>	<u>≥ 200</u>	<u>Must be capable of replacing 190 miles (UDDS ZEV range) in ≤ 15 minutes per section 1962.1.1(d)(5)(B)</u>
<u>Type V</u>	<u>≥ 300</u>	<u>Must be capable of replacing 285 miles (UDDS ZEV range) in ≤ 15 minutes per section 1962.1.1(d)(5)(B)</u>

(B) Fast Refueling. The "fast refueling capability" requirement for a 2009 through 2017 model year Type III, IV, or V ZEV in subdivision 1962(d)(5)(A) will be considered met if the Type III ZEV has the capability to accumulate at least 95 miles of UDDS range in 10 minutes or less and the Type IV or V ZEV has the capability to accumulate at least 190 or 285 miles, respectively, in 15 minutes or less. For ZEVs that utilize more than one ZEV fuel, such as plug-in fuel cell vehicles, the Executive Officer may choose to waive these subdivision 1962.1.1(d)(5)(B) fast refueling requirements and base the amount of credit earned on UDDS ZEV range, as specified in subdivision 1962.1.1(d)(5)(A).

(C) ZEV Credits for 2009 through 2017 Model Year ZEVs. A 2009 through 2017 model-year ZEV, including a Type I.5x and Type IIx, other than a NEV or Type 0, earns 1 ZEV credit when it is produced and delivered for sale in California. A 2009 through 2017 model-year ZEV earns additional credits based on the earliest year in which the ZEV is placed in service in California (not earlier than the ZEV's model year). The vehicle must be delivered for sale and placed in service in a Section 177 state or in California in order to earn the total credit amount. The total credit amount will be earned in the state (i.e. California or a Section 177 state) in which the vehicle was delivered for sale. The following table identifies the total credits that a ZEV in each of the eight ZEV tiers will earn, including the credit not contingent on placement in service, if it is placed in service in the specified calendar year or by June 30 after the end of the specified calendar year. A vehicle is not eligible to receive credits if it is placed in service after December 31, five calendar years after the model year. For example, if a vehicle is produced in 2012, but does not get placed until January 1, 2018, the vehicle would no longer be eligible for ZEV credits.

<u>Total Credit Earned by ZEV Type and Model Year for Production and Delivery for Sale and for Placement</u>		
<u>Tier</u>	<u>Calendar Year in Which ZEV is Placed in Service</u>	
	<u>2009-2011</u>	<u>2012-2017</u>
<u>NEV</u>	<u>0.30</u>	<u>0.30</u>
<u>Type 0</u>	<u>1</u>	<u>1</u>
<u>Type I</u>	<u>2</u>	<u>2</u>
<u>Type I.5</u>	<u>2.5</u>	<u>2.5</u>
<u>Type I.5x</u>	<u>n/a</u>	<u>2.5</u>
<u>Type II</u>	<u>3</u>	<u>3</u>
<u>Type IIx</u>	<u>n/a</u>	<u>3</u>
<u>Type III</u>	<u>4</u>	<u>4</u>
<u>Type IV</u>	<u>5</u>	<u>5</u>
<u>Type V</u>	<u>7</u>	<u>2012-2014: 7</u> <u>2015-2017: 9</u>

(D) Multiplier for Certain ZEVs. 2009 through 2011 model-year ZEVs, excluding NEVs or Type 0 ZEVs, shall qualify for a multiplier of 1.25 if either sold to a motorist or leased for three or more years to a motorist who is given the option to purchase or re-lease the vehicle for two years or more at the end of the first lease term. This subdivision 1962.1.1(d)(5)(D) multiplier will no longer be available after model year 2011.

(E) Counting Specified ZEVs Placed in a Section 177 State and in California.

1. Provisions for 2009 Model Year.

a. Large volume manufacturers and intermediate volume manufacturers with credits earned from ZEVs, excluding NEVs and Type 0 ZEVs, that are either certified to the California ZEV standards or approved as part of an advanced technology

demonstration program and are placed in service in a section 177 state, may be counted towards compliance with the California percentage ZEV requirements in subdivision 1962.1.1(b), including the requirements in subdivision 1962.1.1(b)(2)(B), as if they were delivered for sale and placed in service in California.

b. Large volume manufacturers and intermediate volume manufacturers with credits earned from ZEVs, excluding NEVs and Type 0 ZEVs, that are certified to the California ZEV standards or approved as part of an advanced technology demonstration program and are placed in service in California may be counted towards the percentage ZEV requirements of all section 177 states, including requirements based on subdivision 1962.1.1(b)(2)(B).

2. Provisions for 2010 through 2017 Model Years. Large volume manufacturers and intermediate volume manufacturers with credits earned from ZEVs, including Type I.5x and Type IIx vehicles, and excluding NEVs and Type 0 ZEVs, that are either certified to the California ZEV standards applicable for the ZEV's model year or approved as part of an advanced technology demonstration program and are placed in service in California or in a section 177 state may be counted towards compliance in California and in all section 177 states, with the percentage ZEV requirements in subdivision 1962.1.1(b), provided that the credits are multiplied by the ratio of a manufacturer's applicable production volume for a model year, as specified in subdivision 1962.1.1(b)(1)(B), in the state receiving credit to the manufacturer's applicable production volume (hereafter, "proportional value"), as specified in section 1962.1.1(b)(1)(B), for the same model year in California. Credits generated in a section 177 state will be earned at the proportional value in the section 177 state, and earned in California at the full value specified in subdivision 1962.1.1(d)(5)(C). However, credits generated by 2010 and 2011 model-year vehicles produced, delivered for sale, and placed in service or as part of an advanced technology demonstration program in California to meet any section 177 state's requirements that implement subdivision 1962.1.1(b)(2)(B) are exempt from proportional value, with the number of credits exempted from proportional value allowed being limited to the number of credits needed to satisfy a manufacturer's section 177

state's requirements that implement subdivision 1962.1.1(b)(2)(B)1.b. The table below specifies the qualifying model years for each ZEV type that may be counted towards compliance in all section 177 states.

<u>Vehicle Type</u>	<u>Model Years</u>
Type I, I.5, or II ZEV	2009 – 2017
Type III, IV, or V ZEV	2009 – 2017
Type I.5x or Type IIx	2012 – 2017

3. *Optional Section 177 State Compliance Path.* Large volume manufacturers and intermediate volume manufacturers that choose to elect the optional section 177 state compliance path must notify the Executive Officer and each section 177 state in writing no later than September 1, 2014.

a. *Additional 2016 and 2017 Model Year ZEV Requirements.*

Large volume manufacturers and intermediate volume manufacturers that elect the optional section 177 state compliance path must generate additional 2012 through 2017 model year ZEV credits, including no more than 50% Type 1.5x and Type IIx vehicle credits and excluding all NEV and Type 0 ZEV credits, in each section 177 state equal to the following percentages of their sales volume determined under subdivision 1962.1.1(b)(1)(B):

<u>Model Years</u>	<u>Additional Section 177 State ZEV Requirements</u>
<u>2016</u>	<u>0.75%</u>
<u>2017</u>	<u>1.50%</u>

Subdivision 1962.1.1(d)(5)(E)2. shall not apply to any ZEV credits used to meet a manufacturer's additional 2016 and 2017 model year ZEV requirements under this subdivision 1962.1.1(d)(5)(E)3.a. must be placed in service in the section 177 states no later than June 30, 2018.

i. *Trading and Transferring ZEV Credits within the West Region Pool and East Region Pool.* Manufacturers may trade or transfer specified model year ZEV credits, used to meet the same model year requirements in subdivision 1962.1.1(d)(5)(E)3.c, within the West Region pool, and

will incur no premium on their credit values. For example, for a manufacturer to make up a 2016 model year shortfall of 100 credits in State X, the manufacturer may transfer 100 (2016 model year) ZEV credits from State Y, within the West Region pool. Manufacturers may trade or transfer specific model year ZEV credits, used to meet the same model year requirements in subdivision 1962.1.1(d)(5)(E)3.c., within the East Region pool, and will incur no premium on their credit values. For example, for a manufacturer to make up a 2016 model year shortfall of 100 credits in State W, the manufacturer may transfer 100 (2016 model year) ZEV credits from State Z, within the East Region pool.

ii. *Trading and Transferring ZEV Credits between the West Region Pool and East Region Pool.* Manufacturers may trade or transfer specified model year ZEV credits used to meet the same model year requirements in subdivision 1962.1.1(d)(5)(E)3.c. between the West Region pool and the East Region pool; however, any credits traded or transferred will incur a premium of 30% of their value. For example, in order for a manufacturer to make up a 2016 model year shortfall of 100 credits in the West Region Pool, the manufacturer may transfer 130 (2016 model year) ZEV credits from the East Region Pool. No credits may be traded or transferred to the East Region pool or West Region pool from a manufacturer's California ZEV bank, or from the East Region pool or West Region pool to a manufacturer's California ZEV bank.

b. *Reduced TZEV Percentages.* Large volume manufacturers and intermediate volume manufacturers that elect the optional section 177 state compliance path and that fully comply with the additional 2016 and 2017 model year ZEV requirements in this subdivision 1962.1.1(d)(5)(E)3.a. are allowed to meet TZEV percentages reduced from the allowed TZEV percentages in subdivision 1962.1.1(b)(2)(D)2. and 3. in 2015 through 2017 model year in each section 177 state as enumerated below:

<u>Model Year</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
<u>Existing TZEY Percentage</u>	<u>3.00%</u>	<u>3.00%</u>	<u>3.00%</u>
<u>Section 177 State Adjustment for Optional Compliance Path for TZEYs</u>	<u>75.00%</u>	<u>80.00%</u>	<u>85.00%</u>
<u>New Section 177 State Optional Compliance Path TZEY Percentage</u>	<u>2.25%</u>	<u>2.40%</u>	<u>2.55%</u>

Manufacturers may meet the reduced TZEY percentages above with credits from ZEYs or credits from TZEYs. These reduced TZEY percentages also reduce the total ZEY percent requirement, as illustrated in subdivision 1962.1.1(d)(5)(E)3.c.

i. Trading and Transferring TZEY Credits within the West Region Pool and the East Region Pool. Starting in model year 2015, Manufacturers may trade or transfer specified TZEY credits used to meet the same model year subdivision 1962.1.1(d)(5)(E)3.c. requirements within the West Region pool, and will incur no premium on their credit values. For example, for a manufacturer to make up a 2016 shortfall of 100 credits in State X, the manufacturer may transfer 100 (2016 model year) TZEY credits from State Y, within the West Region pool. Manufacturers may trade or transfer TZEY credits to meet the same model year subdivision 1962.1.1(d)(5)(E)3.c. within the East Region pool, and will incur no premium on their credit values. For example, for a manufacturer to make up a 2016 model year shortfall of 100 credits in State W, the manufacturer may transfer 100 (2016 model year) TZEY credits from State Z, within the East Region pool.

ii. Trading and Transferring TZEY Credits between the West Region Pool and the East Region Pool. Manufacturers may trade or transfer specified TZEY credits used to meet the same model year percentages in subdivision 1962.1.1(d)(5)(E)3.c. between the West Region pool and the East Region pool; however, any credits traded or transferred will incur a premium of 30% of their value. For example, in order for a manufacturer to make up a 2016

model year shortfall of 100 credits in the West Region Pool, the manufacturer may transfer 130 (2016 model year) TZEV credits from the East Region Pool. No credits may be traded or transferred to the East Region pool or West Region pool from a manufacturer's California ZEV bank, or from the East Region pool or West Region pool to a manufacturer's California ZEV bank.

c. *Total Requirement Percentages.* Requirements for the minimum ZEV floor, and allowed percentages for AT PZEVs and PZEVs in subdivision 1962.1.1(b) remain in effect for large and intermediate volume manufacturers choosing the optional section 177 state compliance path in each section 177 state. However, the optional section 177 compliance path requires manufacturers to meet additional ZEV requirements and allows manufacturers to meet reduced TZEV percentages as described above in subdivision 1962.1.1(d)(5)(E)3.a. and b. The table below enumerates the total annual percentage obligation in each section 177 state for the 2015 through 2017 model years if the manufacturer elects the optional section 177 state compliance path and produces the minimum number of credits required to meet its minimum ZEV floor and the maximum percentage allowed to be met with credits from TZEVs, AT PZEVs and PZEVs.

<u>Years</u>	<u>Total ZEV Percent Requirement for Optional Compliance Path</u>	<u>Minimum ZEV Floor for Optional Compliance Path</u>	<u>TZEVs for Optional Compliance Path</u>	<u>AT PZEVs (no change)</u>	<u>PZEVs (no change)</u>
<u>2015</u>	<u>13.25%</u>	<u>3.00%</u>	<u>2.25%</u>	<u>2.00%</u>	<u>6.00%</u>
<u>2016</u>	<u>14.15%</u>	<u>3.75%</u>	<u>2.40%</u>	<u>2.00%</u>	<u>6.00%</u>
<u>2017</u>	<u>15.05%</u>	<u>4.50%</u>	<u>2.55%</u>	<u>2.00%</u>	<u>6.00%</u>

d. *Reporting Requirements.* On an annual basis, by May 1st of the calendar year following the close of a model year, each manufacturer that elects the optional section 177 state compliance path shall submit, in writing, to the Executive Officer and each section 177 state a report, including an itemized list, that demonstrates the manufacturer has met the requirements

of this subdivision 1962.1.1(d)(5)(E)3. in each section 177 state as well as in the East Region pool and in the West Region pool. The itemized list shall include the following:

- i. The manufacturer's total applicable volume of PCs and LDTs delivered for sale in each section 177 state within the pool, as determined under subdivision 1962.1.1(b)(1)(B).
- ii. Make, model, vehicle identification number, credit earned, and section 177 state where delivery for sale and placement in service for ZEV occurred to meet the manufacturer's additional ZEV obligation under subdivision 1962.1.1(d)(5)(E)3.a.
- iii. Make, model, vehicle identification number, credit earned, and section 177 state where delivery for sale of each TZEZV occurred and section 177 state where delivery for sale and placement in service of each ZEV occurred to meet manufacturer's requirements under subdivision 1962.1.1(d)(5)(E)3.c.

e. *Failure to Meet Optional Section 177 State Compliance Path Requirements.* A manufacturer that elects the optional section 177 state compliance path and does not meet the requirements in subdivision 1962.1.1(d)(5)(E)3.a. by June 30, 2018 in all section 177 states within an applicable pool shall be treated as subject to the total ZEV percentage requirements in section 1962.1.1(b) for the 2015 through 2017 model years in each section 177 state and the pooling provisions in subdivision 1962.1.1(d)(5)(E)3.a. shall not apply. Any transfers of ZEV credits between section 177 states will be null and void, and ZEV credits will return to the section 177 state in which the credits were earned. A manufacturer that elects the optional section 177 state compliance path and does not meet the percentages in subdivision 1962.1.1(d)(5)(E)3.b. in a model year or make up their deficit within the specified time and with the specified credits allowed by subdivision 1962.1.1(g)(7)(A) in all section 177 states within an applicable pool shall be treated as subject to the total ZEV percentage requirements in section

1962.1.1(b) for the 2015 through 2017 model years and the pooling provisions in subdivision 1962.1.1(d)(5)(E)3.b. shall not apply. Any transfers of TZEV credits between section 177 states will be null and void if a manufacturer fails to comply, and TZEV credits will return to the section 177 state in which the credits were earned. Penalties shall be calculated separately by each section 177 state where a manufacturer fails to make up the ZEV deficits by the end of the 2018 model year.

f. The provisions in section 1962.1.1 shall apply to a manufacturer electing the optional section 177 state compliance path, except as specifically modified by this subdivision 1962.1.1(d)(5)(E)3.

(F) NEVs. Beginning in 2010 model year, to be eligible for the credit amount in subdivision 1962.1.1(d)(5)(C), NEVs must meet the following specifications and requirements in this subdivision 1962.1.1(d)(5)(F):

1. *Specifications.* A 2010 through 2017 model year NEV earns credit when it meets all the following specifications:

a. *Acceleration.* The vehicle has a 0-20 mph acceleration of 6.0 seconds or less when operating with a payload of 332 pounds and starting with the battery at a 50% state of charge.

b. *Top Speed.* The vehicle has a minimum top speed of 20 mph when operating with a payload of 332 pounds and starting with the battery at a 50% state of charge. The vehicle's top speed shall not exceed 25 mph when tested in accordance with 49 CFR 571.500 (68 FR 43972, July 25, 2003).

c. *Constant Speed Range.* The vehicle has a minimum 25-mile range when operating at constant top speed with a payload of 332 pounds and starting with the battery at 100% state of charge.

2. *Battery Requirement.* A 2010 through 2017 model year NEV must be equipped with one or more sealed, maintenance-free

batteries.

3. *Warranty Requirement.* A 2010 through 2017 model year NEV drive train, including battery packs, must be covered for a period of at least 24 months. The first 6 months of the NEV warranty period must be covered by a full warranty; the remaining warranty period may be optional extended warranties (available for purchase) and may be prorated. If the extended warranty is prorated, the percentage of the battery pack's original value to be covered or refunded must be at least as high as the percentage of the prorated coverage period still remaining. For the purpose of this computation, the age of the battery pack must be expressed in intervals no larger than three months. Alternatively, a manufacturer may cover 50 percent of the original value of the battery pack for the full period of the extended warranty.

4. Prior to allowance approval, the Executive Officer may request that the manufacturer provide copies of representative vehicle and battery warranties.

5. *NEV Charging Requirements.* Model year 2014 through 2017 NEVs must meet charging connection standard portion of the requirements specified in subdivision 1962.3(c)(2).

(G) *Type I.5x and Type IIx Vehicles.* Beginning in 2012 model year, to be eligible for the credit amount in subdivision 1962.1.1(d)(5)(C), Type I.5x and Type IIx vehicles must meet the following specifications and requirements:

1. *PZEV Requirements.* Type I.5x and Type IIx vehicles must meet all PZEV requirements, specified in subdivision 1962.1.1(c)(2)(A) through (D).

2. *Type G Requirements.* Type I.5x and Type IIx vehicles must meet the requirements for Type G advanced componentry allowance, specified in subdivision 1962.1.1(c)(4)(B).

3. *APU Operation.* The vehicle's UDDS range after the APU first starts and enters "charge sustaining hybrid operation" must be less than or equal to the vehicle's UDDS all-electric test range prior to APU start.

The vehicle's APU cannot start under any user-selectable driving mode unless the energy storage system used for traction power is fully depleted.

4. Minimum Zero Emission Range Requirements.

<u>Vehicle Category</u>	<u>Zero Emission UDDS Range</u>
<u>Type I.5x</u>	<u>≥ 75 miles, < 100 miles</u>
<u>Type IIx</u>	<u>≥ 100 miles</u>

(e) [Reserved].

(f) Extended Service Multiplier for 1997-2003 Model Year ZEVs and PZEVs With > 10 Mile Zero-Emission Range. Except in the case of a NEV, an additional ZEV or PZEV multiplier will be earned by the manufacturer of a 1997 through 2003 model year ZEV, or PZEV with > 10 mile zero-emission range for each full year it is registered for operation on public roads in California beyond its first three years of service, in the 2009 through 2011 calendar years. For additional years of service starting earlier than April 24, 2003, the manufacturer will receive 0.1 times the ZEV credit that would be earned by the vehicle if it were leased or sold new in that year, including multipliers, on a year-by-year basis beginning in the fourth year after the vehicle is initially placed in service. For additional years of service starting April 24, 2003 or later, the manufacturer will receive 0.2 times the ZEV credit that would be earned by the vehicle if it were leased or sold new in that year, including multipliers, on a year-by-year basis beginning in the fourth year after the vehicle is initially placed in service. The extended service multiplier is reported and earned in the year following each continuous year of service. Additional credit cannot be earned after model year 2011.

(g) Generation and Use of Credits; Calculation of Penalties.

(1) Introduction. A manufacturer that produces and delivers for sale in California ZEVs or PZEVs in a given model year exceeding the manufacturer's ZEV requirement set forth in subdivision 1962.1.1(b) shall earn credits in accordance with this subdivision 1962.1.1(g).

(2) Credit Calculations.

(A) Credits from ZEVs. For model years 2009 through 2014, the amount of g/mi credits earned by a manufacturer in a given model year from ZEVs

shall be expressed in units of g/mi NMOG, and shall be equal to the number of credits from ZEVs produced and delivered for sale in California that the manufacturer applies towards meeting the ZEV requirements for the model year subtracted from the number of ZEVs produced and delivered for sale in California by the manufacturer in the model year and then multiplied by the NMOG fleet average requirement for PCs and LDT1s, or LDT2s as applicable, for 2009 through 2011 model years, and for PCs and LDT1s for 2012 through 2014 model years. For model years 2015 through 2017, the amount of credits earned by a manufacturer in a given model year from ZEVs shall be expressed in units of credits and shall be equal to the number of credits from ZEVs produced and delivered for sale in California that the manufacturer applies towards meeting the ZEV requirements, or, if applicable, requirements specified under subdivision 1962.1.1(d)(5)(E)3., for the model year subtracted from the number of ZEV credits produced and delivered for sale in California by the manufacturer in the model year or model years.

(B) *Credits from PZEVs.* For model years 2009 through 2014, the amount of g/mi credits from PZEVs earned by a manufacturer in a given model year shall be expressed in units of g/mi NMOG, and shall be equal to the total number of PZEVs produced and delivered for sale in California that the manufacturer applies towards meeting its ZEV requirement for the model year subtracted from the total number of PZEV allowances from PZEVs produced and delivered for sale in California by the manufacturer in the model year and then multiplied by the NMOG fleet average requirement for PCs and LDT1s, or LDT2s as applicable, for 2009 through 2011 model years, and for PCs and LDT1s for 2012 through 2014 model years. For model years 2015 through 2017, the amount of credits earned by a manufacturer in a given model year from PZEVs shall be expressed in units of credits, and shall be equal to the number of credits from PZEVs produced and delivered for sale in California that the manufacturer applies towards meeting the ZEV requirements, or, if applicable, requirements specified under subdivision 1962.1.1(d)(5)(E)3., for the model year subtracted from the number of PZEV credits produced and delivered for sale in California by the manufacturer in the model year or model years.

(C) *Separate Credit Accounts.* The number of credits from a manufacturer's [i] ZEVs, [ii] Type I.5x and Type IIx vehicles, [iii] TZEVs, [iv] AT PZEVs, [v] all other PZEVs, and [vi] NEVs shall each be maintained separately.

(D) Rounding Credits. For model year 2012 through 2014, ZEV credits and debits shall be rounded to the nearest 1/1000th only on the final credit and debit totals using the conventional rounding method. For model year 2015 through 2017, ZEV credits and debits shall be rounded to the nearest 1/100th only on the final credit and debit totals using the conventional rounding method.

(E) Converting g/mi NMOG ZEV Credits to ZEV Credits. After model year 2014 compliance, all manufacturer ZEV, Type I.5x and Type IIx, TZEV, AT PZEV, PZEV, and NEV accounts will be converted from g/mi NMOG to credits. Each g/mi NMOG account balance will be divided by 0.035. Starting in model year 2015, credits will no longer be expressed in terms of g/mi credits, but only as credits.

(F) Converting PZEV and AT PZEV Credits after Model Year 2017. After model year 2017 compliance, a manufacturer's PZEV and AT PZEV credit accounts will be converted to be used for compliance with requirements specified in subdivision 1962.2(b). For LVMs, PZEV accounts will be discounted 93.25%, and AT PZEV accounts will be discounted 75%. For IVMs, PZEV accounts and AT PZEV accounts will be discounted 75%. This will be a one time calculation after model year 2017 compliance is complete.

(3) ZEV Credits for MDVs and LDTs Other Than LDT1s. ZEVs and PZEVs classified as MDVs or as LDTs other than LDT1s may be counted toward the ZEV requirement for PCs, LDT1s and LDT2s as applicable, and included in the calculation of ZEV credits as specified in this subdivision 1962.1.1(g) if the manufacturer so designates.

(4) ZEV Credits for Advanced Technology Demonstration Programs.

(A) TZEVs. For 2009 through 2014 model years, TZEVs placed in a California advanced technology demonstration program for a period of two or more years, may earn ZEV credits even if it is not "delivered for sale" or registered with the California Department of Motor Vehicles (DMV). To earn such credits, the manufacturer must demonstrate to the reasonable satisfaction of the Executive Officer that the vehicles will be regularly used in applications appropriate to evaluate issues related to safety, infrastructure, fuel specifications or public education, and that for 50 percent or more of the first two years of placement the vehicle will be

operated in California. Such a vehicle is eligible to receive the same allowances and credits that it would have earned if placed in service. To determine vehicle credit, the model year designation for a demonstration vehicle shall be consistent with the model year designation for conventional vehicles placed in the same timeframe. Manufacturers may earn credit for as many as 25 vehicles per model, per ZEV state, per year under this subdivision 1962.1.1(g)(4). A manufacturer's vehicles in excess of the 25-vehicle cap will not be eligible for advanced technology demonstration program credits.

(B) ZEVs. In model years 2009 through 2017, ZEVs, including Type I.5x and IIx vehicles, excluding NEVs and Type 0 ZEVs, placed in a California advanced technology demonstration program for a period of two or more years, may earn ZEV credits even if it is not "delivered for sale" or registered with the California DMV. To earn such credits, the manufacturer must demonstrate to the reasonable satisfaction of the Executive Officer that the vehicles will be regularly used in applications appropriate to evaluate issues related to safety, infrastructure, fuel specifications or public education, and that for 50 percent or more of the first two years of placement the vehicle will be operated in California. Such a vehicle is eligible to receive the same allowances and credits that it would have earned if placed in service. To determine vehicle credit, the model year designation for a demonstration vehicle shall be consistent with the model year designation for conventional vehicles placed in the same timeframe. Manufacturers may earn credit for as many as 25 vehicles per model, per ZEV state, per year under this subdivision 1962.1.1(g)(4). A manufacturer's vehicles in excess of the 25-vehicle cap will not be eligible for advanced technology demonstration program credits.

(5) ZEV Credits for Transportation Systems.

(A) General. In model years 2009 through 2011, a ZEV placed, for two or more years, as part of a transportation system may earn additional ZEV credits, which may be used in the same manner as other credits earned by vehicles of that category, except as provided in subdivision (g)(5)(C) below. In model years 2012 through 2017, a ZEV, Type I.5x and Type IIx vehicles, or TZEVE placed, for two or more years, as part of a transportation system may earn additional ZEV credits, which may be used in the same manner as other credits earned by vehicles of that category, except as provided in subdivision (d)(5)(E)2. and as provided in

subdivision (g)(5)(C) below. In model years 2009 through 2011, an AT PZEV or PZEV placed as part of a transportation system may earn additional ZEV credits, which may be used in the same manner as other credits earned by vehicles of that category, except as provided in subdivision (g)(5)(C) below. A NEV is not eligible to earn credit for transportation systems. To earn such credits, the manufacturer must demonstrate to the reasonable satisfaction of the Executive Officer that the vehicle will be used as a part of a project that uses an innovative transportation system as described in subdivision (g)(5)(B) below.

(B) Credits Earned. In order to earn additional credit under this section (g)(5), a project must at a minimum demonstrate [i] shared use of ZEVs, Type I.5x and Type IIx vehicles, TZEVs, AT PZEVs or PZEVs, and [ii] the application of "intelligent" new technologies such as reservation management, card systems, depot management, location management, charge billing and real time wireless information systems. If, in addition to factors [i] and [ii] above, a project also features linkage to transit, the project may receive further additional credit. For ZEVs only, not including NEVs, a project that features linkage to transit, such as dedicated parking and charging facilities at transit stations, but does not demonstrate shared use or the application of intelligent new technologies, may also receive additional credit for linkage to transit. The maximum credit awarded per vehicle shall be determined by the Executive Officer, based upon an application submitted by the manufacturer and, if appropriate, the project manager. The maximum credit awarded shall not exceed the following:

<u>Type of Vehicle</u>	<u>Model Year</u>	<u>Shared Use, Intelligence</u>	<u>Linkage to Transit</u>
<u>PZEV</u>	<u>through 2011</u>	<u>2</u>	<u>1</u>
<u>AT PZEV</u>	<u>through 2011</u>	<u>4</u>	<u>2</u>
<u>TZEV</u>	<u>2009 through 2011</u>	<u>4</u>	<u>2</u>
<u>ZEV</u>	<u>2009 through 2011</u>	<u>6</u>	<u>3</u>
<u>TZEV</u>	<u>2012 through 2017</u>	<u>0.5</u>	<u>0.5</u>
<u>ZEV and Type I.5x and Type IIx vehicles</u>	<u>2012 through 2017</u>	<u>0.75</u>	<u>0.75</u>

(C) Cap on Use of Transportation System Credits.

1. ZEVs. Credits earned or allocated by ZEVs or Type I.5x and Type IIx vehicles pursuant to this subdivision (g)(5), not including all credits

earned by the vehicle itself, may be used to satisfy up to one-tenth of a manufacturer's ZEV obligation in any given model year, and may be used to satisfy up to one-tenth of a manufacturer's ZEV obligation which must be met with ZEVs, as specified in subdivision 1962.1.1(b)(2)(D)3.

2. TLEVs. Credits earned or allocated by TZEVs pursuant to this subdivision (g)(5), not including all credits earned by the vehicle itself, may be used to satisfy up to one-tenth of a manufacturer's ZEV obligation in any given model year, or, if applicable, up to one-tenth of the total ZEV percentages specified under subdivision 1962.1.1(d)(5)(E)3., but may only be used in the same manner as other credits earned by vehicles of that category.

3. AT PZEVs. Credits earned or allocated by AT PZEVs pursuant to this subdivision (g)(5), not including all credits earned by the vehicle itself, may be used to satisfy up to one-twentieth of a manufacturer's ZEV obligation in any given model year, but may only be used in the same manner as other credits earned by vehicles of that category.

4. PZEVs. Credits earned or allocated by PZEVs pursuant to this subdivision (g)(5), not including all credits earned by the vehicle itself, may be used to satisfy up to one-fiftieth of the manufacturer's ZEV obligation in any given model year, but may only be used in the same manner as other credits earned by vehicles of that category.

(D) Allocation of Transportation System Credits. Credits shall be assigned by the Executive Officer to the project manager or, in the absence of a separate project manager, to the vehicle manufacturers upon demonstration that a vehicle has been placed in a project for the time specified in subdivision 1962.1.1(g)(5)(A). Credits shall be allocated to vehicle manufacturers by the Executive Officer in accordance with a recommendation submitted in writing by the project manager and signed by all manufacturers participating in the project, and need not be allocated in direct proportion to the number of vehicles placed. Credits will no longer be allocated for vehicles placed in transportation systems after 2017 model year.

(6) Use of ZEV Credits. For model years 2009 through 2014, a manufacturer may meet the ZEV requirements in any given model year by submitting to the

Executive Officer a commensurate amount of g/mi ZEV credits, consistent with subdivision 1962.1.1(b). For model years 2015 through 2017, a manufacturer may meet the ZEV requirements in any given model year by submitting to the Executive Officer a commensurate amount of ZEV credits, consistent with subdivision 1962.1.1(b). Credits in each of the categories may be used to meet the requirement for that category as well as the requirements for lesser credit earning ZEV categories, but shall not be used to meet the requirement for a greater credit earning ZEV category. For example, credits produced from TZEVs may be used to comply with AT PZEV requirements, but not with the portion that must be satisfied with ZEVs. These credits may be earned previously by the manufacturer or acquired from another party.

(A) NEVs. Credits earned from NEVs offered for sale or placed in service in model years 2001 through 2005 cannot be used to satisfy more than the percentage limits described in the following table:

<u>Model Years</u>	<u>ZEV Obligation that:</u>	<u>Percentage limit for NEVs allowed to meet each Obligation:</u>
<u>2009 – 2011</u>	<u>Must be met with ZEVs</u>	<u>50%</u>
<u>2009</u>	<u>May be met with AT PZEVs but not PZEVs</u>	<u>75%</u>
<u>2010 – 2011</u>		<u>50%</u>
<u>2009 – 2011</u>	<u>May be met with PZEVs</u>	<u>No Limit</u>
<u>2012 – 2017</u>	<u>Must be met with ZEVs</u>	<u>0%</u>
	<u>May be met with TZEVs and AT PZEVs</u>	<u>50%</u>
	<u>May be met with PZEVs</u>	<u>No Limit</u>

¹ If applicable, obligation in this table means requirements specified under subdivision 1962.1.1(d)(5)(E)3.

Additionally, credits earned from NEVs placed in service in model years 2006 through 2017 can be used to meet the percentage limits described in the following table:

<u>Model Years</u>	<u>ZEV Obligation that:</u>	<u>Percentage Limit for NEVs allowed to meet each Obligation:</u>
<u>2009 - 2011</u>	<u>May be met through compliance with Primary Requirements</u>	<u>No Limit</u>
	<u>May be met through compliance with Alternative Requirements, and must be met with ZEVs</u>	<u>0%</u>

	<u>May be met through compliance Alternative Requirements, and may be met with AT PZEVs or PZEVs</u>	<u>No Limit</u>
<u>2012 – 2017</u>	<u>Must be met with ZEVs</u>	<u>0%</u>
	<u>May be met with TZEVs, AT PZEVs, or PZEVs</u>	<u>No Limit</u>

¹ If applicable, obligation in this table means requirements specified under subdivision 1962.1.1(d)(5)(E)3.

This limitation applies to NEV credits earned by the same manufacturer or earned by another manufacturer and acquired.

(B) Carry forward provisions for LVMs for 2009-2011 Model Years. Credits from ZEVs, excluding credits generated from NEVs, generated from excess production in 2009 through 2011 model years, including those acquired from another party, may be carried forward and applied to the ZEV minimum floor requirement specified in subdivisions 1962.1.1(b)(2)(B)1.b. and (b)(2)(D) for two subsequent model years. Beginning with the third subsequent model year, those earned credits may no longer be used to satisfy the manufacturer's percentage ZEV obligation that may only be satisfied by credits from ZEVs, but may be used to satisfy the manufacturer's percentage ZEV obligation that may be satisfied by credits from TZEVs, AT PZEVs, or PZEVs. For example, ZEV credit earned in 2010 would retain full flexibility through 2012, after which time that credit could only be used as TZEV, AT PZEV, or PZEV credits.

(C) Carry forward provisions for manufacturers other than LVMs for 2009-2011 Model Years. Credits generated from ZEVs, excluding credits generated from NEVs, from 2009 through 2011 model year production by manufacturers that are not LVMs may be carried forward by the manufacturer producing the credit until the manufacturer becomes subject to the LVM requirements, after the transition period permitted in subdivision 1962.1.1(b)(7)(A). When subject to the LVM requirements, a manufacturer must comply with the provisions of subdivision 1962.1.1(g)(6)(B). Credits traded by a manufacturer other than a LVM to any other manufacturer, including a LVM, are subject to subdivision 1962.1.1(g)(6)(B), beginning in the model year in which they were produced (e.g., a 2009 model year credit traded in calendar year 2010 can only be applied towards the portion of the manufacturer's requirement that must be met with ZEVs through model year 2011; beginning in model year 2012, the credit can only be applied to the portion of the manufacturer's requirement that may be met with TZEVs, AT PZEVs, or PZEVs).

(D) Type I.5x and Type IIx Vehicles. Credits earned from Type I.5x and Type IIx vehicles offered for sale or placed in service may meet up to 50% of the portion of a manufacturer's requirement that must be met with credits from ZEVs.

(7) Requirement to Make Up a ZEV Deficit.

(A) General. A manufacturer that produces and delivers for sale in California fewer ZEVs than required in a given model year shall make up the deficit by the end of the third model year by submitting to the Executive Officer a commensurate amount of g/mi credits generated by ZEVs, for model year 2009 through 2014, and the commensurate amount of credits generated by ZEVs for model year 2015 through 2017. The amount of credits required to be submitted shall be calculated by [i] adding the number of ZEVs produced and delivered for sale in California by the manufacturer for the model year to the number of ZEV allowances from partial ZEV allowance vehicles produced and delivered for sale in California by the manufacturer for the model year (for a LVM, not to exceed that permitted under subdivision 1962.1.1(b)(2)), [ii] subtracting that total from the number of ZEV credits required to be produced and delivered for sale in California by the manufacturer for the model year, and, for model year 2009 through 2014 compliance, and [iii] multiplying the resulting value by the fleet average requirements for PCs and LDT1s for the model year in which the deficit is incurred. Credits earned by delivery for sale of Type I.5x and Type IIx vehicles, TZEV, NEV, AT PZEV, and PZEV are not allowed to be used to fulfill a manufacturer's ZEV deficit; only credits from ZEVs may be used to fulfill a manufacturer's ZEV deficit.

(8) Penalty for Failure to Meet ZEV Requirements. Any manufacturer that fails to produce and deliver for sale in California the required number of ZEVs and submit an appropriate amount of g/mi credits, for model years 2009 through 2014, and credits for model years 2015 through 2017, and does not make up ZEV deficits within the specified time allowed by subdivision 1962.1.1(g)(7)(A) shall be subject to the Health and Safety Code section 43211 civil penalty applicable to a manufacturer that 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 ZEV deficits are not balanced by the end of the specified time allowed by subdivision 1962.1.1(g)(7)(A). For the purposes of Health and Safety Code section 43211, the number of vehicles not meeting the state board's standards shall

be equal to the manufacturer's credit deficit, rounded to the nearest 1/1000th for model years 2009 through 2014 and rounded to the nearest 1/100th for model years 2015 through 2017, calculated according to the following equations, provided that the percentage of a manufacturer's ZEV requirement for a given model year that may be satisfied with PZEV allowance vehicles or credits from such vehicles may not exceed the percentages permitted under subdivision 1962.1.1(b)(2):

For 2009 through 2014 model years:

(No. of credits required to be generated for the model year) - (Amount of credits submitted for compliance for the model year) / (the fleet average requirement for PCs and LDT1s for the model year)

For 2015 through 2017 model years: (No. of credits required to be generated for the model year) - (Amount of credits submitted for compliance for the model year)

(h) Test Procedures.

(1) Determining Compliance. The certification requirements and test procedures for determining compliance with this section 1962.1.1 are set forth in "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," adopted December 17, 2008, and last amended December 6, 2012, which is incorporated herein by reference.

(2) NEV Compliance. The test procedures for determining compliance with subdivision 1962.1.1(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) ZEV-Specific Definitions. The following definitions apply to this section 1962.1.1.

(1) "Advanced technology PZEV" or "AT PZEV" means any PZEV with an allowance greater than 0.2 before application of the PZEV early introduction phase-in multiplier.

- (2) "Auxiliary power unit" or "APU" means any device that provides electrical or mechanical energy, meeting the requirements of subdivision 1962.1.1(c)(2), to a Type I.5x or Type IIx vehicle, after the zero emission range has been fully depleted. A fuel fired heater does not qualify under this definition for an APU.
- (3) "Battery electric vehicle" means any vehicle that operates solely by use of a battery or battery pack, or that is powered primarily through the use of an electric battery or battery pack but uses a flywheel or capacitor that stores energy produced by the electric motor or through regenerative braking to assist in vehicle operation.
- (4) "Charge depletion range actual" or "Rcda" means the distance achieved by a hybrid electric vehicle on the urban driving cycle at the point when the zero-emission energy storage device is depleted of off vehicle charge and regenerative braking derived energy.
- (5) "Conventional rounding method" means to increase the last digit to be retained when the following digit is five or greater. Retain the last digit as is when the following digit is four or less.
- (6) "East Region pool" means the combination Section 177 states east of the Mississippi River.
- (7) "Electric drive system" means an electric motor and associated power electronics which provide acceleration torque to the drive wheels sometime during normal vehicle operation. This does not include components that could act as a motor, but are configured to act only as a generator or engine starter in a particular vehicle application.
- (8) "Enhanced AT PZEV" means any model year 2009 through 2011 PZEV that has an allowance of 1.0 or greater per vehicle without multipliers and makes use of a ZEV fuel. Enhanced AT PZEV means Transitional Zero Emission Vehicle.
- (9) "Neighborhood electric vehicle" or "NEV" means a motor vehicle that meets the definition of Low Speed Vehicle either in section 385.5 of the Vehicle Code or in 49 CFR 571.500 (as it existed on July 1, 2000), and is certified to zero-emission vehicle standards.

- (10) "Placed in service" means having been sold or leased to an end-user and not to a dealer or other distribution chain entity, and having been individually registered for on-road use by the California DMV.
- (11) "Proportional value" means the ratio of a manufacturer's California applicable sales volume to the manufacturer's Section 177 state applicable sales volume. In any given model year, the same applicable sale volume calculation method must be used to calculate proportional value.
- (12) "Range Extended Battery Electric Vehicle" means a vehicle powered predominantly by a zero emission energy storage device, able to drive the vehicle for more than 75 all-electric miles, and also equipped with a backup APU, which does not operate until the energy storage device is fully depleted, and meeting requirements in subdivision 1962.1.1(d)(5)(G).
- (13) "Regenerative braking" means the partial recovery of the energy normally dissipated into friction braking that is returned as electrical current to an energy storage device.
- (14) "Section 177 state" means a state that is administering the California ZEV requirements pursuant to section 177 of the federal Clean Air Act (42 U.S.C. § 7507).
- (15) "Transitional Zero Emission Vehicle" means a PZEV that has an allowance of 1.0 or greater, and makes use of a ZEV fuel.
- (16) "Type 0, I, I.5, II, III, IV, and V ZEV" all have the meanings set forth in section 1962.1.1(d)(5)(A).
- (17) "West Region pool" means the combination of Section 177 states west of the Mississippi River.
- (18) "ZEV fuel" means a fuel that provides traction energy in on-road ZEVs. Examples of current technology ZEV fuels include electricity, hydrogen, and compressed air.
- (j) Abbreviations. The following abbreviations are used in this section 1962.1.1:
"AER" means all-electric range.
"APU" means auxiliary power unit.
"AT PZEV" means advanced technology partial zero-emission vehicle.

"CFR" means Code of Federal Regulations.

"DMV" means the California Department of Motor Vehicles.

"EAER" means equivalent allelectric range.

"EAERu40" means the urban equivalent all-electric range that a 40 mile Rcda plug-in hybrid electric vehicle achieves.

"FR" means Federal Register.

"HEV" means hybrid-electric vehicle.

"LDT" means light-duty truck.

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

"LDT2" means a "LEV II" light-duty truck with a loaded vehicle weight of 3751 pounds to a gross vehicle weight of 8500 pounds, or a "LEV I" light-duty truck with a loaded vehicle weight of 3751-5750 pounds.

"LVM" means large volume manufacturer.

"MDV" means medium-duty vehicle.

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

"NEV" means neighborhood electric vehicle.

"NOx" means oxides of nitrogen.

"PC" means passenger car.

"PZEV" means partial allowance zero-emission vehicle, any vehicle that is delivered for sale in California and that qualifies for a partial ZEV allowance of at least 0.2.

"Rcda" means urban charge depletion range actual.

"SAE" means Society of Automotive Engineers.

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

"TZEV" means transitional zero emission vehicle.

"Type I.5x" means range extended 75 mile to 100 mile all electric range battery electric vehicle.

"Type IIx" means range extended 100 mile or greater all electric range battery electric vehicle.

"UDDS" means urban dynamometer driving cycle.

"UF" means utility factor.

"US06" means the US06 Supplemental Federal Test Procedure

"VMT" means vehicle miles traveled.

"ZEV" means zero-emission vehicle.

(k) 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 this article remains in full force and effect.

(l) *Public Disclosure.* Records in the Board's possession for the vehicles subject to the requirements of section 1962.1.1 shall be subject to disclosure as public records as follows:

(1) Each manufacturer's annual production data and the corresponding credits per vehicle earned for ZEVs (including ZEV type), TZEVs, AT PZEVs, and PZEVs for the 2009 through 2017 model years; and

(2) Each manufacturer's annual credit balances for 2010 through 2017 years for:

(A) Each type of vehicle: ZEVs (minus NEVs), Type I.5x, and Type IIx vehicles, NEVs, TZEVs, AT PZEVs, and PZEVs; and

(B) Advanced technology demonstration programs; and

(C) Transportation systems; and

(D) Credits earned under subdivision 1962.1.1(d)(5)(C), including credits acquired from, or transferred to another party.

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, 43204, 43205, 43205.5 and 43206, 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. (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. ~~**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.**~~

~~§ [Reserved.]~~

~~§ [Reserved.]~~

~~§ [Reserved.]~~

~~§ [Reserved.]~~

~~§ [Reserved.]~~

~~§ [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 September 3, 2015, which is incorporated herein by reference, with the exception of sections C.2, C.3, C.4, C.7, C.9, and D.3.~~

~~§ (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.]~~

~~§ (j) [Reserved.]~~

~~§ (k) [Reserved.]~~

~~§ (l) [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.~~

~~§~~

(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) Percentage ZEV Requirements.

(1) General ZEV Credit Percentage Requirement.

(A) Basic Requirement. The minimum ZEV credit percentage requirement for each manufacturer is listed in the table below as the percentage of the PCs and LDTs, produced by the manufacturer and delivered for sale in California that must be ZEVs, subject to the conditions in this subdivision 1962.2.1(b). The ZEV requirement will be based on the annual NMOG production report for the appropriate model year.

<u>Model Year</u>	<u>Credit Percentage Requirement</u>
<u>2018</u>	<u>4.5%</u>
<u>2019</u>	<u>7.0%</u>
<u>2020</u>	<u>9.5%</u>
<u>2021</u>	<u>12.0%</u>
<u>2022</u>	<u>14.5%</u>
<u>2023</u>	<u>17.0%</u>
<u>2024</u>	<u>19.5%</u>
<u>2025 and subsequent</u>	<u>22.0%</u>

(B) Calculating the Number of Vehicles to Which the Percentage ZEV Requirement is Applied. For 2018 and subsequent model years, a manufacturer's production volume for the given model year will be based on the three-year average of the manufacturer's volume of PCs and LDTs, produced and delivered for sale in California in the prior second, third, and fourth model year [for example, 2019 model year ZEV requirements will be

based on California production volume average of PCs and LDTs for the 2015 to 2017 model years]. This production averaging is used to determine ZEV requirements only, and has no effect on a manufacturer's size determination (eg. three-year average calculation method). In applying the ZEV requirement, a PC or LDT, that is produced by one manufacturer (e.g., Manufacturer A), but is marketed in California by another manufacturer (e.g., Manufacturer B) under the other manufacturer's (Manufacturer B) nameplate, shall be treated as having been produced by the marketing manufacturer (i.e., Manufacturer B).

1. [Reserved].

2. [Reserved].

3. A manufacturer may apply to the Executive Officer to be permitted to base its ZEV obligation on the number of PCs and LDTs, produced by the manufacturer and delivered for sale in California that same model year (ie, same model-year calculation method) as an alternative to the three-year averaging of prior year production described above, for up to two model years, total, between model year 2018 and model year 2025. For the same model-year calculation method to be allowed, a manufacturer's application to the Executive Officer must show that their volume of PCs and LDTs produced and delivered for sale in California has decreased by at least 30 percent from the previous year due to circumstances that were unforeseeable and beyond their control.

(C) [Reserved].

(D) Exclusion of ZEVs in Determining a Manufacturer's Sales Volume. In calculating a manufacturer's applicable sales, using either method described in subdivision 1962.2.1(b)(1)(B), a manufacturer shall exclude the number of NEVs produced and delivered for sale in California by the manufacturer itself, or by a subsidiary in which the manufacturer has more than 33.4% percent ownership interest.

(2) Requirements for Large Volume Manufacturers.

(A) [Reserved].

(B) [Reserved].

(C) [Reserved].

(D) [Reserved].

(E) Requirements for Large Volume Manufacturers in 2018 and through 2025 Model Years. LVMs must produce credits from ZEVs equal to minimum ZEV floor percentage requirement, as enumerated below.

<u>Model Years</u>	<u>Total ZEV Percent Requirement</u>	<u>Minimum ZEV floor</u>	<u>TZEVs</u>
<u>2018</u>	<u>4.5%</u>	<u>2.0%</u>	<u>2.5%</u>
<u>2019</u>	<u>7.0%</u>	<u>4.0%</u>	<u>3.0%</u>
<u>2020</u>	<u>9.5%</u>	<u>6.0%</u>	<u>3.5%</u>
<u>2021</u>	<u>12.0%</u>	<u>8.0%</u>	<u>4.0%</u>
<u>2022</u>	<u>14.5%</u>	<u>10.0%</u>	<u>4.5%</u>
<u>2023</u>	<u>17.0%</u>	<u>12.0%</u>	<u>5.0%</u>
<u>2024</u>	<u>19.5%</u>	<u>14.0%</u>	<u>5.5%</u>
<u>2025</u>	<u>22.0%</u>	<u>16.0%</u>	<u>6.0%</u>

(F) Requirements for Large Volume Manufacturers in Model Year 2026 and Subsequent. In 2026 and subsequent model years, a manufacturer must meet a total ZEV credit percentage of 22%. The maximum portion of a manufacturer's credit percentage requirement that may be satisfied by TZEV credits is limited to 6% of the manufacturer's applicable California PC and LDT production volume. ZEV credits must satisfy the remainder of the manufacturer's requirement.

(3) Requirements for Intermediate Volume Manufacturers. For 2018 and subsequent model years, an intermediate volume manufacturer may meet all of its ZEV credit percentage requirement, under subdivision 1962.2.1(b), with credits from TZEV.

(4) Requirements for Small Volume Manufacturers. A small volume manufacturer is not required to meet the ZEV credit percentage requirements. However, a small volume manufacturer may earn, bank, market, and trade credits for the ZEVs and TZEVs it produces and delivers for sale in California.

(5) [Reserved].

(6) [Reserved].

(7) Changes in Small Volume and Intermediate Volume Manufacturer Status.

(A) Increases in California Production Volume. In 2018 and subsequent model years, if a small volume manufacturer's average California production volume exceeds 4,500 units of new PCs, LDTs, and MDVs based on the average number of vehicles produced and delivered for sale for the three previous consecutive model years (i.e., total production volume exceeds 13,500 vehicles in a three-year period), for three consecutive averages, the manufacturer shall no longer be treated as a small volume manufacturer, and must comply with the ZEV requirements for intermediate volume manufacturers beginning with the next model year after the last model year of the third consecutive average. For example, if (a small volume) Manufacturer A exceeds 4,500 PCs, LDTs, and MDVs for their 2018 - 2020, 2019 - 2021, and 2020 - 2022 model year averages, Manufacturer A would be subject to intermediate volume requirements starting in 2023 model year.

If an intermediate volume manufacturer's average California production volume exceeds 20,000 units of new PCs, LDTs, and MDVs based on the average number of vehicles produced and delivered for sale for the three previous consecutive model years (i.e., total production volume exceeds 60,000 vehicles in a three-year period), for three consecutive averages, the manufacturer shall no longer be treated as an intermediate volume manufacturer and shall comply with the ZEV requirements for large volume manufacturers beginning with the next model year after the last model year of the third consecutive average. For example, if (an intermediate volume) Manufacturer B exceeds 20,000 PCs, LDTs, and MDVs for its 2018 - 2020, 2019 - 2021, and 2020 - 2022 average, Manufacturer B would be subject to large volume manufacturer requirements starting in 2023 model year. Any new requirement described in the this subdivision will begin with the next model year after the last model year of the third consecutive average when a manufacturer ceases to be a small or intermediate volume manufacturer in 2018 or subsequent years due to the aggregation requirements in majority ownership situations.

(B) Decreases in California Production Volume. If a manufacturer's average California production volume falls below 4,500 or 20,000 units of new PCs,

LDT1 and 2s, and MDVs, based on the average number of vehicles produced and delivered for sale for the three previous consecutive model years, for three consecutive averages, the manufacturer shall be treated as a small volume or intermediate volume manufacturer, as applicable, and shall be subject to the requirements for a small volume or intermediate volume manufacturer beginning with the next model year. For example, if Manufacturer C falls below 20,000 PCs, LDTs, and MDVs for its 2019 - 2021, 2020 - 2022, and 2021 - 2023 averages, Manufacturer C would be subject to IVM requirements starting in 2024 model year.

(C) Calculating California Production Volume in Change of Ownership

Situations. Where a manufacturer experiences a change in ownership in a particular model year, the change will affect application of the aggregation requirements on the manufacturer starting with the next model year. When a manufacturer is simultaneously producing two model years of vehicles at the time of a change of ownership, the basis of determining next model year must be the earlier model year. The manufacturer's small or intermediate volume manufacturer status for the next model year shall be based on the average California production volume in the three previous consecutive model years of those manufacturers whose production volumes must be aggregated for that next model year. For example, where a change of ownership during the 2019 calendar year occurs and the manufacturer is producing both 2019 and 2020 model year vehicles resulting in a requirement that the production volume of Manufacturer A be aggregated with the production volume of Manufacturer B, Manufacturer A's status for the 2020 model year will be based on the production volumes of Manufacturers A and B in the 2017 - 2019 model years. Where the production volume of Manufacturer A must be aggregated with the production volumes of Manufacturers B and C for the 2019 model year, and during that model year a change in ownership eliminates the requirement that Manufacturer B's production volume be aggregated with Manufacturer A's, Manufacturer A's status for the 2020 model year will be based on the production volumes of Manufacturers A and C in the 2017 - 2019 model years. In either case, the lead time provisions in subdivisions 1962.2.1(b)(7)(A) and (B) will apply.

(c) Transitional Zero-Emission Vehicles (TZEV).

(1) *Introduction.* This subdivision 1962.2.1(c) sets forth the criteria for identifying vehicles delivered for sale in California as TZEVs.

(2) *TZEV Requirements.* In order for a vehicle to be eligible to receive a ZEV allowance, the manufacturer must demonstrate compliance with all of the following requirements:

(A) *SULEV Standards.* Certify the vehicle to the 150,000-mile SULEV 20 or 30 exhaust emission standards for PCs and LDTs in subdivision 1961.2(a)(1). Bi-fuel, fuel flexible and dual-fuel vehicles must certify to the applicable 150,000-mile SULEV 20 or 30 exhaust emission standards when operating on both fuels. Manufacturers may certify 2018 and 2019 TZEVs to the 150,000-mile SULEV exhaust emission standards for PCs and LDTs in subdivision 1961(a)(1);

(B) *Evaporative Emissions.* Certify the vehicle to the evaporative emission standards in subdivision 1976(b)(1)(G) or 1976(b)(1)(E);

(C) *OBD.* Certify that the vehicle will meet the applicable on-board diagnostic requirements in sections 1968.1 or 1968.2, as applicable, for 150,000 miles; and

(D) *Extended Warranty.* Extend the performance and defects warranty period set forth in subdivisions 2037(b)(2) and 2038(b)(2) 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 used for traction power (such as a battery, ultracapacitor, or other electric storage device).

(3) *Allowances for TZEVs.*

(A) *Zero-Emission Vehicle Miles Traveled TZEV Allowance Calculation.* A vehicle that meets the requirements of subdivision 1962.2.1(c)(2) and has zero-emission vehicle miles traveled (VMT), as defined by and calculated by 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," adopted March 22, 2012, last amended December 6, 2012, which is incorporated herein by reference, and measured as equivalent all electric range (EAER) capability will generate an allowance

according to the following equation:

<u>UDDS Test Cycle Range (AER)</u>	<u>Allowance</u>
<u><10 all electric miles</u>	<u>0.00</u>
<u>≥10 all electric miles</u>	<u>TZEV Credit = [(0.01) * EAER + 0.30]</u>
<u>>80 miles (credit cap)</u>	<u>1.10</u>

1. Allowance for US06 Capability. TZEVs with US06 all electric range capability (AER) of at least 10 miles shall earn an additional 0.2 allowance. US06 test cycle range capability shall be determined in accordance with section G.7.5 of the "California Exhaust Emission Standards and Test Procedures for the 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, last amended December 6, 2012, which is incorporated herein by reference.

(B) [Reserved].

(C) [Reserved].

(D) [Reserved].

(E) Credit for Hydrogen Internal Combustion Engine Vehicles. A hydrogen internal combustion engine vehicle that meets the requirements of subdivision 1962.2.1(c)(2) and has a total range of at least 250 UDDS miles will earn an allowance of 0.75, which may be in addition to allowances earned in subdivision 1962.2.1(c)(3)(A), and subject to an overall credit cap of 1.25.

(d) Qualification for Credits From ZEVs.

(1) [Reserved].

(2) [Reserved].

(3) [Reserved].

(4) [Reserved].

(5) Credits for 2018 and Subsequent Model Year ZEVs.

(A) ZEV Credit Calculations. Credits from a ZEV delivered for sale are based on the ZEV's UDDS all electric range, determined in accordance with the "California Exhaust Emission Standards and Test Procedures for the 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, which is incorporated herein by reference, using the following equation:

$$\text{ZEV Credit} = (0.01) * (\text{UDDS range}) + 0.50.$$

1. A ZEV with less than 50 miles UDDS range will receive zero credits.
2. Credits earned under this provision 1962.2.1(d)(5)(A) are be capped at 4 credits per ZEV.

(B) [Reserved].

(C) [Reserved].

(D) [Reserved].

(E) Counting Specified ZEVs Placed in Service in a Section 177 State and in California. Large volume manufacturers and intermediate volume manufacturers with credits earned from hydrogen fuel cell vehicles that are certified to the California ZEV standards applicable for the ZEV's model year, delivered for sale and placed in service in California or in a section 177 state, may be counted towards compliance in California and in all section 177 states with the percentage ZEV requirements in subdivision 1962.2.1(b). The credits earned are multiplied by the ratio of a manufacturer's applicable production volume for a model year, as specified in subdivision 1962.2.1(b)(1)(B), in the state receiving credit to the manufacturer's applicable production volume as specified in subdivision 1962.2.1(b)(1)(B), for the same model year in California (hereafter, "proportional value"). Credits generated from ZEV placement in a section 177 state will be earned at the proportional value in the section 177 state, and earned in California at the full value specified in subdivision

1962.2.1(d)(5)(A).

1. Optional Section 177 State Compliance Path.

a. Reduced ZEV and TZEZ Percentages. Large volume manufacturers and intermediate volume manufacturers that have fully complied with the optional section 177 state compliance path requirements in subdivision 1962.1(d)(5)(E)3. are allowed to meet ZEV percentage requirements and optional TZEZ percentages reduced from the minimum ZEV floor percentages and TZEZ percentages in subdivision 1962.2.1(b)(2)(E) in each section 177 state equal to the following percentages of their sales volume determined under subdivision 1962.2.1(b)(1)(B):

ZEVs

<u>Model Year</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
<u>Existing Minimum ZEV Floor</u>	<u>2.00%</u>	<u>4.00%</u>	<u>6.00%</u>	<u>8.00%</u>
<u>Section 177 State Adjustment for Optional Compliance Path</u>	<u>62.5%</u>	<u>75%</u>	<u>87.5%</u>	<u>100%</u>
<u>Minimum Section 177 State ZEV Requirement</u>	<u>1.25%</u>	<u>3.00%</u>	<u>5.25%</u>	<u>8.00%</u>

TZEZs

<u>Model Year</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
<u>Existing TZEZ Percentage</u>	<u>2.50%</u>	<u>3.00%</u>	<u>3.50%</u>	<u>4.00%</u>
<u>Section 177 State Adjustment for Optional Compliance Path</u>	<u>90.00%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>
<u>New Section 177 State TZEZ Percentage</u>	<u>2.25%</u>	<u>3.00%</u>	<u>3.50%</u>	<u>4.00%</u>

Total Percent Requirement

<u>Model Year</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
<u>New Total Section 177 State Optional Requirements</u>	<u>3.50%</u>	<u>6.00%</u>	<u>8.75%</u>	<u>12.00%</u>

i. Trading and Transferring ZEV and TZEZ Credits within West Region Pool and East Region Pool. Manufacturers that have fully complied with the optional section 177 state compliance path requirements in subdivision

1962.1(d)(5)(E)3. may trade or transfer specified model year ZEV and TZEV credits within the West Region pool to meet the same model year requirements in subdivision 1962.2.1(d)(5)(E)2.a, and will incur no premium on their credit values. For example, for a manufacturer to make up a 2019 model year shortfall of 100 credits in State X, the manufacturer may transfer 100 (2019 model year) ZEV credits from State Y, within the West Region pool. Manufacturers that have fully complied with the optional section 177 state compliance path requirements in subdivision 1962.1(d)(5)(E)3. may trade or transfer specified model year ZEV and TZEV credits within the East Region pool to meet the same model year requirements in subdivision 1962.2.1(d)(5)(E)2.a, and will incur no premium on their credit values. For example, for a manufacturer to make up a 2019 model year shortfall of 100 credits in State W, the manufacturer may transfer 100 (2019 model year) ZEV credits from State Z, within the East Region pool.

ii. *Trading and Transferring ZEV and TZEV Credits between the West Region Pool and East Region Pool.*

Manufacturers that have fully complied with the optional section 177 state compliance path requirements in subdivision 1962.1(d)(5)(E)3. may trade or transfer specified model year ZEV and TZEV credits to meet the same model year requirements in subdivision 1962.2.1(d)(5)(E)2.a. between the West Region pool and the East Region pool; however, any credits traded will incur a premium of 30% of their value. For example, in order for a manufacturer to make up a 2019 model year shortfall of 100 credits in the West Region Pool, the manufacturer may transfer 130 (2019 model year) credits from the East Region Pool. No credits may be traded or transferred to the East Region pool or West Region pool from a manufacturer's California ZEV bank, or from the East Region pool or West Region pool to a manufacturer's California ZEV bank.

b. *Reporting Requirements.* On an annual basis, by May 1st of the calendar year following the close of a model year, each manufacturer that elects the optional section 177 state compliance path under subdivision 1962.1(d)(5)(E)3, shall submit, in writing, to the Executive Officer and each section 177 state a report, including an itemized list, that indicates where vehicles have been placed within the East Region pool and within the West Region pool. The itemized list shall include the following:

- i. The manufacturer's total applicable volume of PCs and LDTs delivered for sale in each section 177 state within the regional pool, as determined under subdivision 1962.2.1(b)(1)(B).
- ii. Make, model, vehicle identification number, credit earned, and section 177 state where delivery for sale of each TZEV and ZEV occurred and to meet manufacturer's requirements under subdivision 1962.2.1(d)(5)(E)2.a.

c. *Failure to Meet Optional Section 177 State Compliance Path Requirements.* A manufacturer that elects the optional section 177 state compliance path under subdivision 1962.1(d)(5)(E)3, and does not meet the modified percentages in subdivision 1962.2.1(d)(5)(E)2.a. in a model year or make up their deficit within the specified time and with the specified credits allowed by subdivision 1962.2.1(g)(7)(A) in all section 177 states of the applicable pool, shall be treated as subject to the total ZEV percentage requirements in section 1962.2.1(b) for the 2018 through 2021 model years in each section 177 state, and the pooling provisions in subdivision 1962.2.1(d)(5)(E)2.a. shall not apply. Any transfers of ZEV or TZEV credits between section 177 states will be null and void if a manufacturer fails to comply, and ZEV or TZEV credits will return to the section 177 state in which the credits were earned. Penalties shall be calculated separately by each section 177 state where a manufacturer fails to make up the ZEV deficits by the end of the 2018 model year.

- d. The provisions of section 1962.2.1 shall apply to a manufacturer electing the optional section 177 state compliance path, except as specifically modified by this subdivision 1962.2.1(d)(5)(E)2.

(F) NEVs. NEVs must meet the following to be eligible for 0.15 credits:

1. Specifications. A NEV earns credit when it meets all the following specifications:

- a. Acceleration. The vehicle has a 0-20 mph acceleration of 6.0 seconds or less when operating with a payload of at least 332 pounds and starting with the battery at a 50% state of charge.
- b. Top Speed. The vehicle has a minimum top speed of 20 mph when operating with a payload of at least 332 pounds and starting with the battery at a 50% state of charge. The vehicle's top speed shall not exceed 25 mph when tested in accordance with 49 CFR 571.500 (68 FR 43972, July 25, 2003).
- c. Constant Speed Range. The vehicle has a minimum 25-mile range when operating at constant top speed with a payload of at least 332 pounds and starting with the battery at 100% state of charge.

2. Battery Requirement. A NEV must be equipped with one or more sealed, maintenance-free batteries.

3. Warranty Requirement. A NEV drive train, including battery packs, must be covered for a period of at least 24 months. The first 6 months of the NEV warranty period must be covered by a full warranty; the remaining warranty period may be optional extended warranties (available for purchase) and may be prorated. If the extended warranty is prorated, the percentage of the battery pack's original value to be covered or refunded must be at least as high as the percentage of the prorated coverage period still remaining. For the purpose of this computation, the age of the battery pack must be expressed in intervals no larger than three months. Alternatively, a manufacturer may cover 50 percent of the original value of the battery pack for the full period of the extended warranty. Prior to credit approval, the Executive Officer may request that the manufacturer provide copies of

representative vehicle and battery warranties.

4. *NEV Charging Requirements.* A NEV must meet charging requirements specific in subdivision 1962.3(c)(2).

(G) *BEVx.* A BEVx must meet the following in order to receive credit, based on its all electric UDDS Range, through subdivision 1962.2.1(d)(5)(A):

1. *Emissions Requirements.* BEVxs must meet all TZEV requirements, specified in subdivision 1962.2.1(c)(2)(A) through (D).

2. *APU Operation.* The vehicle's UDDS range after the APU first starts and enters "charge sustaining hybrid operation" must be less than or equal to the vehicle's UDDS all electric test range prior to APU start. The vehicle's APU cannot start under any user-selectable driving mode unless the energy storage system used for traction power is fully depleted.

3. *Minimum Zero Emission Range Requirements.* BEVxs must have a minimum of 75 miles UDDS all electric range.

(e) *[Reserved]*.

(f) *[Reserved]*.

(g) *Generation and Use of Credits; Calculation of Penalties.*

(1) *Introduction.* A manufacturer that produces and delivers for sale in California ZEVs or TZEVs in a given model year exceeding the manufacturer's ZEV requirement set forth in subdivision 1962.2.1(b) shall earn ZEV credits in accordance with this subdivision 1962.2.1(g).

(2) *ZEV Credit Calculations.*

(A) *Credits from ZEVs.* The amount of credits earned by a manufacturer in a given model year from ZEVs shall be expressed in units of credits, and shall be equal to the number of credits from ZEVs produced and delivered for sale in California that the manufacturer applies towards meeting the ZEV requirements, or, if applicable, requirements specified under subdivision 1962.2.1(d)(5)(E)2.a. for the model year subtracted from the

number of ZEVs produced and delivered for sale in California by the manufacturer in the model year.

(B) Credits from TZEVs. The amount of credits earned by a manufacturer in a given model year from TZEVs shall be expressed in units of credits, and shall be equal to the total number of TZEVs produced and delivered for sale in California that the manufacturer applies towards meeting its ZEV requirement, or, if applicable, requirements specified under subdivision 1962.2.1(d)(5)(E)2.a. for the model year subtracted from the total number of ZEV allowances from TZEVs produced and delivered for sale in California by the manufacturer in the model year.

(C) Separate Credit Accounts. Credits from a manufacturer's ZEVs, BEVxs, TZEVs, and NEVs shall each be maintained in separate accounts.

(D) Rounding Credits. ZEV credits and debits shall be rounded to the nearest 1/100th only on the final credit and debit totals using the conventional rounding method.

(3) ZEV Credits for MDVs. Credits from ZEVs and TZEVs classified as MDVs, may be counted toward the ZEV requirement for PCs and LDTs, and included in the calculation of ZEV credits as specified in this subdivision 1962.2.1(g) if the manufacturer so specifies.

(4) ZEV Credits for Advanced Technology Demonstration Programs.

(A) [Reserved].

(B) ZEVs. ZEVs, including BEVxs, excluding NEVs, placed in a small or intermediate volume manufacturer's California advanced technology demonstration program for a period of two or more years, may earn ZEV credits even if the vehicle is not "delivered for sale" or registered with the California DMV. To earn such credits, the manufacturer must demonstrate to the reasonable satisfaction of the Executive Officer that the vehicles will be regularly used in applications appropriate to evaluate issues related to safety, infrastructure, fuel specifications or public education, and that for 50 percent or more of the first two years of placement the vehicle will be operated in California. Such a vehicle is eligible to receive the same credit that it would have earned if delivered for sale, and for fuel cell vehicles, placed in service. To determine vehicle credit, the model year designation

for a demonstration vehicle shall be consistent with the model year designation for conventional vehicles placed in the same timeframe. Manufacturers may earn credit for up to 25 vehicles per model, per section 177 state, per year under this subdivision 1962.2.1(g)(4). A manufacturer's vehicles in excess of the 25-vehicle cap will not be eligible for advanced technology demonstration program credits.

(5) ZEV Credits for Transportation Systems.

(A) [Reserved]

(B) [Reserved]

(C) Cap on Use of Transportation System Credits.

1. ZEVs. Transportation system credits earned or allocated by ZEVs or BEVxs pursuant to subdivision 1962.1 (g)(5), not including any credits earned by the vehicle itself, may be used to satisfy up to one-tenth of a manufacturer's ZEV obligation in any given model year, and may be used to satisfy up to one-tenth of a manufacturer's ZEV obligation which must be met with ZEVs, as specified in subdivision 1962.2.1(b)(2)(E) or, if applicable, requirements specified under subdivision 1962.2.1(d)(5)(E)2.a.
2. TZEVS. Transportation system credits earned or allocated by TZEVS pursuant to subdivision 1962.1(g)(5), not including all credits earned by the vehicle itself, may be used to satisfy up to one-tenth of the portion of a manufacturer's ZEV obligation that may be met with TZEVS, or, if applicable, the portion of a manufacturer's obligation that may be met with TZEVS specified under subdivision 1962.2.1(d)(5)(E)2.a. in any given model year, but may only be used in the same manner as other credits earned by vehicles of that category.

(6) Use of ZEV Credits. A manufacturer may meet the ZEV requirements in a given model year by submitting to the Executive Officer a commensurate amount of ZEV credits, consistent with subdivision 1962.2.1(b). Credits in each of the categories may be used to meet the requirement for that category as well as the requirements for lesser credit earning ZEV categories, but shall not be used to meet the requirement for a greater credit earning ZEV category, except for discounted PZEV and AT PZEV credits. For example,

credits produced from TZEVs may be used to comply with the portion of the requirement that may be met with credits from TZEV, but not with the portion that must be satisfied with credits from ZEVs. These credits may be earned previously by the manufacturer or acquired from another party.

(A) Use of Discounted PZEV and AT PZEV Credits and NEV Credits. For model years 2018 through 2025, discounted PZEV and AT PZEV credits, and NEV credits may be used to satisfy up to one-quarter of the portion of a manufacturer's requirement that can be met with credits from TZEVs, or, if applicable, the portion of a manufacturer's obligation that may be met with TZEVs specified under subdivision 1962.2.1(d)(5)(E)2.a.. Intermediate volume manufacturers may fulfill their entire requirement with discounted PZEV and AT PZEV credits, and NEV credits in model years 2018 and 2019. These credits may be earned previously by the manufacturer or acquired from another party. Discounted PZEV and AT PZEV credits may no longer be used after model year 2025 compliance.

(B) Use of BEVx Credits. BEVx credits may be used to satisfy up to 50% of the portion of a manufacturer's requirement that must be met with ZEV credits.

(C) GHG-ZEV Over Compliance Credits.

1. Application. Manufacturers may apply to the Executive Officer, no later than December 31, 2016, to be eligible for this subdivision 1962.2.1(g)(6)(C), based on the following qualifications:

- a. A manufacturer must have no model year 2017 compliance debits and no outstanding debits from all previous model year compliance with sections 1961.1 and 1961.3, or must have demonstrated compliance with the National greenhouse gas program as allowed by subdivisions 1961.1(a)(1)(A)(ii) and 1961.3(c); and
- b. A manufacturer must have no model year 2017 compliance debits and no outstanding debits from all previous model year compliance with section 1962.1; and
- c. A manufacturer must submit documentation of its projected product plans to show over compliance with the manufacturer's

section 1961.3 requirements, or over compliance with National greenhouse gas program requirements as allowed by subdivision 1961.3(c), by at least 2.0 gCO₂/mile in each model year through the entire 2018 through 2021 model year period, and its commitment to do so in each year.

2. Credit Generation and Calculation. Manufacturers must calculate their over compliance with section 1961.3 requirements, or over compliance with the National greenhouse gas program requirements as allowed by subdivision 1961.3(c), for model years 2018 through 2021 based on compliance with the previous model year standard. For example, to generate credits for this subdivision 1962.2.1(g)(6)(C) for model year 2018, manufacturers would calculate credits based on model year 2017 compliance with section 1961.3, or over compliance with the National greenhouse gas program as allowed by subdivision 1961.3(c).

a. At least 2.0 gCO₂/mile over compliance with section 1961.3, or over compliance with the National greenhouse gas program as allowed by subdivision 1961.3(c), is required in each year and the following equation must be used to calculate the amount of ZEV credits earned for purposes of this subdivision 1962.2.1(g)(6)(C), and:

$$\frac{[(\text{Manufacturer US PC and LDT Sales}) \times (\text{gCO}_{196}/\text{mile below manufacturer GHG standard for a given model year})]}{(\text{Manufacturer GHG standard for a given model year})}$$

b. Credits earned under subdivision 1961.3(a)(9), or credits earned under 40 CFR, part 86, Subpart S, §86.1866-12(a), §86.1866-12(b), or §86.1870-12, may not be included in the calculation of gCO₂/mile credits for use in the above equation in subdivision a. All ZEVs included in the calculation above must include upstream emission values found in section 1961.3.

c. Banked gCO₂/mile credits earned under sections 1961.1 and 1961.3, or under the National greenhouse gas program requirements as allowed by subdivision 1961.3(c), from previous model years or from other manufacturers may not be included in the calculation of gCO₂/mile credits for use in the

above equation in subdivision a.

3. Use of GHG-ZEV Over Compliance Credits. A manufacturer may use no more than the percentage enumerated in the table below to meet either the total ZEV requirement nor the portion of their ZEV requirement that must be met with ZEV credits, with credits earned under this subdivision 1962.2.1(g)(6)(C).

<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
<u>50%</u>	<u>50%</u>	<u>40%</u>	<u>30%</u>

Credits earned in any given model year under this subdivision 1962.2.1(g)(6)(C) may only be used in the applicable model year and may not be used in any other model year.

gCO₂/mile credits used to calculate GHG-ZEV over compliance credits under this provision must also be removed from the manufacturer's GHG compliance bank, and cannot be banked for future compliance toward section 1961.3, or towards compliance with the National greenhouse gas program requirements as allowed by subdivision 1961.3(c).

4. Reporting Requirements. Annually, manufacturers are required to submit calculations of credits for this subdivision 1962.2.1(g)(6)(C) for the model year, any remaining credits/debits from previous model years under section 1961.3 or under the National greenhouse gas program requirements as allowed by subdivision 1961.3(c), and projected credits/debits for future years through 2021 under section 1961.3 or under the National greenhouse gas program requirements as allowed by subdivision 1961.3(c) and this subdivision 1962.2.1(g)(6)(C). If a manufacturer, who has been granted the ability to generate credits under this subdivision 1962.2.1(g)(6)(C), fails to over comply by at least 2.0 gCO₂/mile in any one year, the manufacturer will be subject to the full ZEV requirements for the model year and future model years, and will not be able to earn credits for any other model year under this subdivision 1962.2.1(g)(6)(C).

(7) Requirement to Make Up a ZEV Deficit.

- (A) General. A manufacturer that produces and delivers for sale in California fewer ZEVs than required in a given model year shall make up the deficit by the next model year by submitting to the Executive Officer a commensurate amount of ZEV credits. The amount of ZEV credits

required to be submitted shall be calculated by [i] adding the number of credits from ZEVs produced and delivered for sale in California by the manufacturer for the model year to the number of credits from TZEVS produced and delivered for sale in California by the manufacturer for the model year (for a LVM, not to exceed that permitted under subdivision 1962.2.1(b)(2)), and [ii] subtracting that total from the number of credits required to be produced and delivered for sale in California by the manufacturer for the model year. BEVx, TZEVS, NEV, or converted AT PZEVS and PZEVS credits are not allowed to be used to fulfill a manufacturer's ZEV deficit; only credits from ZEVs may be used to fulfill a manufacturer's ZEV deficit.

(8) *Penalty for Failure to Meet ZEV Requirements.* Any manufacturer that fails to produce and deliver for sale in California the required number of ZEVs and submit an appropriate amount of credits and does not make up ZEV deficits within the specified time allowed by subdivision 1962.2.1(g)(7)(A) shall be subject to the Health and Safety Code section 43211 civil penalty applicable to a manufacturer that 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 ZEV deficit is not balanced by the end of the specified time allowed by subdivision 1962.2.1(g)(7)(A). For the purposes of Health and Safety Code section 43211, the number of vehicles not meeting the state board's standards shall be equal to the manufacturer's credit deficit, rounded to the nearest 1/100th, calculated according to the following equation, provided that the percentage of a manufacturer's ZEV requirement for a given model year that may be satisfied with TZEVS or credit from such vehicles may not exceed the percentages permitted under subdivision 1962.2.1(b)(2):
(No. of ZEV credits required to be generated for the model year) - (Amount of credits submitted for compliance for the model year)

(h) *Test Procedures.*

(1) *Determining Compliance.* The certification requirements and test procedures for determining compliance with this section 1962.2.1 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, last amended December 6, 2012, 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) *ZEV-Specific Definitions.* The following definitions apply to this section 1962.2.1.

(1) "Auxiliary power unit" or "APU" means any device that provides electrical or mechanical energy, meeting the requirements of subdivision 1962.2.1(c)(2), to a BEVx, after the zero emission range has been fully depleted. A fuel fired heater does not qualify under this definition for an APU.

(2) "Charge depletion range actual" or "Rcda" means the distance achieved by a hybrid electric vehicle on the urban driving cycle at the point when the zero-emission energy storage device is depleted of off vehicle charge and regenerative braking derived energy.

(3) "Conventional rounding method" means to increase the last digit to be retained when the following digit is five or greater. Retain the last digit as is when the following digit is four or less.

(4) "Discounted PZEV and AT PZEV credits" means credits earned under section 1962 and 1962.1 by delivery for sale of PZEVs and AT PZEVs, discounted according to subdivision 1962.1(g)(2)(F).

(5) "East Region pool" means the combination of Section 177 states east of the Mississippi River.

(6) "Energy storage device" means a storage device able to provide the minimum power and energy storage capability to enable engine stop/start capability, traction boost, regenerative braking, and (nominal) charge sustaining mode driving capability. In the case of TZEVs, a minimum range threshold relative to certified, new-vehicle range capability is not specified or required.

(7) "Hydrogen fuel cell vehicle" means a ZEV that is fueled primarily by hydrogen, but may also have off-vehicle charge capability.

- (8) "Hydrogen internal combustion engine vehicle" means a TZEV that is fueled exclusively by hydrogen.
- (9) "Majority ownership situations" means when one manufacturer owns another manufacturer more than 33.4%, for determination of size under CCR Section 1900.
- (10) "Manufacturer US PC and LDT Sales" means a manufacturer's total passenger car and light duty truck (up to 8,500 pounds loaded vehicle weight) sales sold in the United States of America in a given model year.
- (11) "Neighborhood electric vehicle" or "NEV" means a motor vehicle that meets the definition of Low Speed Vehicle either in section 385.5 of the Vehicle Code or in 49 CFR 571.500 (as it existed on July 1, 2000), and is certified to zero-emission vehicle standards.
- (12) "Placed in service" means having been sold or leased to an end-user and not to a dealer or other distribution chain entity, and having been individually registered for on-road use by the California DMV.
- (13) "Proportional value" means the ratio of a manufacturer's California applicable sales volume to the manufacturer's Section 177 state applicable sales volume. In any given model year, the same applicable sales volume calculation method must be used to calculate proportional value.
- (14) "Range Extended Battery Electric Vehicle" or "BEVx" means a vehicle powered predominantly by a zero emission energy storage device, able to drive the vehicle for more than 75 all-electric miles, and also equipped with a backup APU, which does not operate until the energy storage device is fully depleted, and meeting requirements in subdivision 1962.2.1(d)(5)(G).
- (15) "Section 177 state" means a state that is administering the California ZEV requirements pursuant to section 177 of the federal Clean Air Act (42 U.S.C. § 7507).
- (16) "Transitional zero emission vehicle" or "TZEV" means a vehicle that meet the all criteria of subdivision 1962.2.1(c)(2) and qualifies for an allowance in subdivision 1962.2.1(c)(3)(D) or (E).

(17) "West Region pool" means the combination of Section 177 states west of the Mississippi River.

(18) "Zero emission vehicle" or "ZEV" means a vehicle that produces zero exhaust emissions of any criteria pollutant (or precursor pollutant) or greenhouse gas under any possible operational modes or conditions.

(19) "Zero emission vehicle fuel" means a fuel that provides traction energy in on-road ZEVs. Examples of current technology ZEV fuels include electricity, hydrogen, and compressed air.

(j) Abbreviations. The following abbreviations are used in this section 1962.2.1:

"AER" means all-electric range.

"APU" means auxiliary power unit.

"AT PZEV" means advanced technology partial zero-emission vehicle.

"BEVx" means range extended battery electric vehicle.

"CFR" means Code of Federal Regulations.

"CO₂" means carbon dioxide.

"DMV" means the California Department of Motor Vehicles.

"EAER" means equivalent all-electric range.

"FR" means Federal Register.

"g" means grams.

"HEV" means hybrid-electric vehicle.

"LDT" means light-duty truck.

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

"LDT2" means a "LEV II" light-duty truck with a loaded vehicle weight of 3751 pounds to a gross vehicle weight of 8500 pounds, or a "LEV I" light-duty truck with a loaded vehicle weight of 3751-5750 pounds.

"LVM" means large volume manufacturer.

"MDV" means medium-duty vehicle.

"NMOG" means non-methane organic gases, or the total mass of oxygenated and non-oxygenated hydrocarbon emissions.

"NEV" means neighborhood electric vehicle.

"NOx" means oxides of nitrogen.

"PC" means passenger car.

"PZEV" means partial allowance zero-emission vehicle

"SAE" means Society of Automotive Engineers.

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

"TZEV" means transitional zero emission vehicle.

"UDDS" means urban dynamometer driving cycle.

"US" means United States of America.

"US06" means the US06 Supplemental Federal Test Procedure

"VMT" means vehicle miles traveled.

"ZEV" means zero-emission vehicle.

(k) *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 this article remains in full force and effect.

(l) *Public Disclosure*. Records in the Board's possession for the vehicles subject to the requirements of section 1962.2.1 shall be subject to disclosure as public records as follows:

(1) Each manufacturer's annual production data and the corresponding credits per vehicle earned for ZEVs and TZEVs for the 2018 and subsequent model years; and

(2) Each manufacturer's annual credit balances for 2018 and subsequent years for:

(A) Each type of vehicle: ZEV (minus NEV), BEVx, NEV, TZEV, and discounted PZEV and AT PZEV credits; and

(B) Advanced technology demonstration programs; and

(C) Transportation systems; and

(D) Credits earned under section 1962.2.1(d)(5)(A), including credits acquired from, or transferred to another party, and the parties themselves.

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 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.~~

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, 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.

§ 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.

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.

(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:

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:

<i>Vehicle Type</i>	<i>Model Year</i>	<i>Hydrocarbons⁽¹⁾</i> <i>Diurnal + Hot Soak (grams/test)</i> <i>50K miles</i>
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.

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)	1993 through 2005 ⁽⁵⁾	2.0	0.05
Hybrid electric passenger cars		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	<i>Minimum Percentage of Vehicles Certified to Running Loss and Useful Life Standards*</i>
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.

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	<i>Hydrocarbons¹ Two-Day Diurnal + Hot Soak (grams/test) Useful Life²</i>
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.

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

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.

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	Hydrocarbon¹ 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

¹Organic Material Hydrocarbon Equivalent for alcohol-fueled vehicles.

²For 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: $(40\% \times 3 \text{ years}) + (80\% \times 2 \text{ years}) + (100\% \times 1 \text{ year}) = 380$). 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: $(10\% \times 4 \text{ years}) = 40$) and added to the cumulative total.~~

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

~~⁴In-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.~~

~~For 2015 and subsequent model motor vehicles, the following evaporative emission requirements apply:~~

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

~~*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⁽⁴⁾ 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

⁴-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.

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⁽⁴⁾ Emission Standards⁽²⁾		
	Running Loss (grams per mile)	Highest Whole Vehicle Diurnal + Hot Soak⁽³⁾⁽⁴⁾⁽⁵⁾ (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

¹Organic Material Hydrocarbon Equivalent for alcohol-fueled vehicles.

²Except as provided below, for all vehicles certified to 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.

³The 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:~~

~~$$\frac{[(\text{Applicable Hydrocarbon Emission Standard for the Emission Standard Category}) - (\text{Manufacturer's Fleet-Average Hydrocarbon Emission Value for the Emission Standard Category})] \times (\text{Total Number of Affected Vehicles})}{1}$$~~

~~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.

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).

<i>Model Years 2015, 2016, and 2017</i>	<i>Minimum Percentage of Vehicle Fleet⁽¹⁾⁽²⁾ Average of vehicles certified to section 1976(b)(1)(E) in model years 2012, 2013, and 2014⁽³⁾⁽⁴⁾</i>
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 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.

⁴The 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.

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 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

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.

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).

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).~~

~~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.~~

~~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).~~

~~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.~~

~~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.~~

~~*Effective leak diameter standard and procedure.* Manufacturers shall demonstrate that for 2018 and subsequent model vehicles $\leq$ 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.~~

~~*Auxiliary engines and fuel systems.* *Auxiliary engines and fuel systems.* For 2017 and subsequent model vehicles $\leq$ 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.~~

~~(2) Evaporative emissions for gasoline-fueled motorcycles subject to exhaust emission standards under this article shall not exceed:~~

<i>Motorcycle Class</i>	<i>Model Year</i>	<i>Hydrocarbons (grams per test)</i>
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

~~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.~~

~~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.~~

~~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.~~

~~Definitions Specific to this Section.~~

~~For purposes of this section, “small volume motorcycle manufacturer” means a manufacturer which sells less than 5,000 new motorcycles per year in California.~~

~~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).~~

~~"Non integrated refueling emission control system" is defined in 40 Code of Federal Regulations § 86.1803-01.~~

~~"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).~~

(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 liquified 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:

<u>Vehicle Type</u>	<u>Model Year</u>	<u>Hydrocarbons¹</u> <u>Diurnal + Hot Soak (grams/test)</u> <u>50K miles</u>
<u>Passenger cars</u>	<u>1978 and 1979</u>	<u>6.0</u>
<u>Light-duty trucks</u>		<u>6.0</u>
<u>Medium-duty vehicles</u>		<u>6.0</u>
<u>Heavy-duty vehicles</u>		<u>6.0</u>
<u>Passenger cars</u>	<u>1980-1994²</u>	<u>2.0</u>
<u>Light-duty trucks</u>		<u>2.0</u>
<u>Medium-duty vehicles</u>		<u>2.0</u>
<u>Heavy-duty vehicles</u>		<u>2.0</u>

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:

<u>Vehicle Type</u>	<u>Model Year</u>	<u>Hydrocarbons¹</u>	
		<u>Three-Day Diurnal + Hot Soak (grams/test) Useful Life⁽²⁾</u>	<u>Running Loss (grams/mile) Useful Life²</u>
<u>Passenger cars</u>	<u>1995 through 2005³</u>	<u>2.0</u>	<u>0.05</u>
<u>Light-duty trucks</u>		<u>2.0</u>	<u>0.05</u>
<u>Medium-duty vehicles (6,001-8,500 lbs. GVWR)</u>		<u>2.0</u>	<u>0.05</u>
<u>with fuel tanks < 30 gallons</u>		<u>2.5</u>	<u>0.05</u>
<u>with fuel tanks 30 gallons</u>		<u>3.0</u>	<u>0.05</u>
<u>(8,501-14,000 lbs. GVWR)⁴</u>		<u>2.0</u>	<u>0.05</u>
<u>Heavy-duty vehicles (over 14,001 lbs. GVWR)</u>	<u>1993 through 2005⁵</u>	<u>2.0</u>	<u>0.05</u>
<u>Hybrid electric passenger cars</u>		<u>2.0</u>	<u>0.05</u>
<u>Hybrid electric light-duty trucks</u>		<u>2.0</u>	<u>0.05</u>

Hybrid electric medium-duty vehicles	2.0	0.05
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¹Organic 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:

<i>Minimum Percentage of Vehicles</i>	
<i>Model Year</i>	<i>Certified to Running Loss and Useful Life Standards*</i>
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 the 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:

<u>Vehicle Type</u>	<u>Model Year</u>	<u>Hydrocarbons¹</u> <u>Two-Day Diurnal + Hot Soak</u> <u>(grams/test)</u> <u>Useful Life²</u>
<u>Passenger cars</u>	<u>1996 through</u> <u>2005³</u>	<u>2.5</u>
<u>Light-duty trucks</u>		<u>2.5</u>
<u>Medium-duty vehicles</u> <u>(6,001-8,500 lbs. GVWR)</u> <u>with fuel tanks < 30 gallons</u> <u>with fuel tanks 30 gallons</u> <u>(8,501-14,000 lbs. GVWR)</u>		<u>2.5</u> <u>3.0</u> <u>3.5</u>
<u>Heavy-duty vehicles</u> <u>(over 14,000 lbs. GVWR)</u>		<u>4.5</u>
<u>Hybrid electric passenger cars</u>		<u>2.5</u>
<u>Hybrid electric light-duty trucks</u>	<u>1996 through</u> <u>2005³</u>	<u>2.5</u>
<u>Hybrid electric medium-duty vehicles</u>		<u>2.5</u>

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:

<u>Vehicle Type</u>	<u>Hydrocarbons¹ Standards^{2 3 4}</u>		
	<u>Running Loss</u> <u>(grams per mile)</u>	<u>Three Day Diurnal</u> <u>+ Hot Soak</u> <u>(grams per test)</u>	<u>Two-Day Diurnal +</u> <u>Hot Soak</u> <u>(grams per test)</u>
<u>Passenger cars</u>	<u>0.05</u>	<u>0.50</u>	<u>0.65</u>
<u>Light-duty trucks (under 8,501 lbs. GVWR)</u>			
<u>6,000 lbs. GVWR and under</u>	<u>0.05</u>	<u>0.65</u>	<u>0.85</u>
<u>6,001 - 8,500 lbs. GVWR</u>	<u>0.05</u>	<u>0.90</u>	<u>1.15</u>
<u>Medium-duty vehicles</u> <u>(8,501 - 14,000 lbs. GVWR)</u>	<u>0.05</u>	<u>1.00</u>	<u>1.25</u>
<u>Heavy-duty vehicles</u> <u>(over 14,001 lbs. GVWR)</u>	<u>0.05</u>	<u>1.00</u>	<u>1.25</u>

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.

<u>Model Year</u>	<u>Minimum Percentage of Vehicles Certified to the Standards in §§1976(b)(1)(F) and (b)(1)(E)</u>
<u>2004</u>	<u>40</u>
<u>2005</u>	<u>80</u>
<u>2006 and subsequent</u>	<u>100</u>

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: $(40\% \times 3 \text{ years}) + (80\% \times 2 \text{ years}) + (100\% \times 1 \text{ year}) = 380$). 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: $(10\% \times 4 \text{ years}) = 40$) 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:

<u>Vehicle Type</u>	<u>Hydrocarbons¹ Emission Standards²</u>		
	<u>Running Loss (grams per mile)</u>	<u>Three-Day Diurnal + Hot Soak and Two-Day Diurnal + Hot Soak</u>	
		<u>Whole Vehicle (grams per test)</u>	<u>Fuel Only³ (grams per test)</u>
<u>Passenger cars</u>	<u>0.05</u>	<u>0.350</u>	<u>0.0</u>
<u>Light-duty trucks 6,000 lbs. GVWR and under</u>	<u>0.05</u>	<u>0.500</u>	<u>0.0</u>
<u>Light-duty trucks 6,001 - 8,500 lbs. GVWR</u>	<u>0.05</u>	<u>0.750</u>	<u>0.0</u>
<u>Medium-duty passenger vehicles</u>	<u>0.05</u>	<u>0.750</u>	<u>0.0</u>
<u>Medium-duty vehicles (8,501 - 14,000 lbs. GVWR)</u>	<u>0.05</u>	<u>0.750</u>	<u>0.0</u>
<u>Heavy-duty vehicles (over 14,000 lbs. GVWR)</u>	<u>0.05</u>	<u>0.750</u>	<u>0.0</u>

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:

<u>Vehicle Type</u>	<u>Hydrocarbons¹ Emission Standards²</u>		
	<u>Running Loss</u> <u>(grams per mile)</u>	<u>Highest Whole Vehicle Diurnal + Hot Soak^{3 4 5}</u> <u>(grams per test)</u>	<u>Canister Bleed⁶</u> <u>(grams per test)</u>
<u>Passenger cars; and</u> <u>Light-duty trucks</u> <u>6,000 lbs. GVWR and under, and 0</u> <u>- 3,750 lbs. LVW</u>	<u>0.05</u>	<u>0.300</u>	<u>0.020</u>
<u>Light-duty trucks</u> <u>6,000 lbs. GVWR and under, and</u> <u>3,751 – 5,750 lbs. LVW</u>	<u>0.05</u>	<u>0.400</u>	<u>0.020</u>
<u>Light-duty trucks</u> <u>6,001 - 8,500 lbs. GVWR; and</u> <u>Medium-duty passenger vehicles</u>	<u>0.05</u>	<u>0.500</u>	<u>0.020</u>
<u>Medium-duty vehicles</u> <u>(8,501 - 14,000 lbs. GVWR); and</u> <u>Heavy-duty vehicles</u> <u>(over 14,000 lbs. GVWR)</u>	<u>0.05</u>	<u>0.600</u>	<u>0.030</u>

¹ Organic Material Hydrocarbon Equivalent for alcohol-fueled vehicles.

² For vehicles certified to the running loss and the highest whole vehicle diurnal plus hot soak emission 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. 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 (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:

$$[(\text{Applicable Hydrocarbon Emission Standard for the Emission Standard Category}) - (\text{Manufacturer's Fleet-Average Hydrocarbon Emission Value for the Emission Standard Category})] \times (\text{Total Number of Affected Vehicles})$$

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).

<u>Model Years</u>	<u>Minimum Percentage of Vehicle Fleet</u> ^{1 2}
<u>2015, 2016, and 2017</u>	<u>Average of vehicles certified to section 1976(b)(1)(E) in model years 2012, 2013, and 2014</u> ^{3 4}
<u>2018 and 2019</u>	<u>60</u>
<u>2020 and 2021</u>	<u>80</u>
<u>2022 and subsequent</u>	<u>100</u>

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) 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 2018 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.

<u>Vehicle Type</u>	<u>Highest Whole Vehicle Diurnal + Hot Soak (grams per test)</u>
<u>Passenger cars</u>	<u>0.300</u>
<u>Light-duty trucks 6,000 lbs. GVWR and under, and 0 - 3,750 lbs. LVW</u>	<u>0.300</u>
<u>Light-duty trucks 6,000 lbs. GVWR and under, and 3,751 – 5,750 lbs. LVW</u>	<u>0.400</u>
<u>Light-duty trucks 6,001 - 8,500 lbs. GVWR</u>	<u>0.500</u>

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.

(b)

(2) Evaporative emissions for gasoline-fueled motorcycles subject to exhaust emission standards under this article shall not exceed:

<u>Motorcycle Class</u>	<u>Model Year</u>	<u>Hydrocarbons (grams per test)</u>
<u>Class I and II (50-279cc)</u>	<u>1983 and 1984</u>	<u>6.0</u>
	<u>1985 and subsequent</u>	<u>2.0</u>
<u>Class III (280cc and larger)</u>	<u>1984 and 1985</u>	<u>6.0</u>
	<u>1986 and subsequent</u>	<u>2.0</u>
<u>Class III (280cc and larger) (Optional Standard for Small Volume Motorcycle Manufacturers)</u>	<u>1986-1988</u>	<u>6.0</u>

(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.

"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, 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 Standard for Compressed Natural Gas Vehicle Fueling Connection Devices, ANSI NGV1-2006, 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:~~

~~(A) — The manufacturer can attest that the vehicle meets the 0.20 grams/gallon refueling emission standard; 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) All vehicles subject to the refueling emission standards in section 1978(a)(1) shall demonstrate compliance except incomplete vehicles 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.~~

(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, 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 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 the vehicle meets the 0.20 grams/gallon refueling emission standard without a control system."

(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.

<i>ORVR Model Year Phase-In Schedule</i>			
<u>Class of Vehicle</u>	<u>40% Fleet</u>	<u>80% Fleet</u>	<u>100% Fleet</u>
<u>Passenger Cars</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>
<u>Light-Duty Trucks 0-6,000 lbs. GVWR</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>
<u>Light-Duty Trucks/ Medium-Duty Vehicles (6,001 – 8,500 lbs. GVWR)</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>

(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, all vehicles subject to the refueling emission standards in section 1978.0.1(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 1978.0.1(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.