

# The California Low-Emission Vehicle Regulations

(With Amendments Effective January 4, 2008)

The California low-emission vehicle (LEV) regulations are administered by the California Air Resources Board (ARB) and apply to passenger cars, light-duty trucks and medium-duty vehicles. They are contained in various sections of chapter 1 (Motor Vehicle Pollution Control Devices), division 3 (Air Resources Board), title 13, California Code of Regulations (CCR), which commences with section 1900. The LEV exhaust emission standards were originally adopted in a 1990-1991 rulemaking, and generally became applicable in the 1994 model year. The LEV program also includes requirements for the introduction of zero-emission vehicles (ZEVs).

Following a November 5, 1998 hearing, the ARB adopted the California "LEV II" regulations, which generally become applicable with the 2004 model year (although earlier certification to the LEV II standards is permitted). The LEV II rulemaking also included the adoption of Compliance Assurance Program "CAP 2000" amendments which establish new motor vehicle certification and in-use test requirements – developed jointly with the U.S. Environmental Protection Agency – applicable to 2001 and subsequent model motor vehicles. The LEV II regulations were formally adopted August 5, 1999 and became operative November 27, 1999. The original LEV standards are now referred to as the "LEV I" standards. Amendments adopted December 27, 2000 require manufacturers to market federally-certified vehicle models in California in those instances where the federal model is certified to a set of federal "Tier 2" exhaust emissions standards that are more stringent than the set of California LEV exhaust emission standards to which the manufacturer would otherwise certify the equivalent California model.

## The LEV I Regulations

The LEV I standards are contained primarily in section 1960.1, which includes all of the California exhaust emission standards for 1981 through 2003 model-year passenger cars, light-duty trucks and medium-duty vehicles. The key portions of section 1960.1 pertaining to the LEV I program are:

- § 1960.1(e)(2) Formaldehyde exhaust emission standards for 1993-2003 model methanol-fueled passenger cars, light-duty trucks and medium-duty vehicles.
- § 1960.1(e)(3) Formaldehyde exhaust emission standards for 1992-2006 model LEV I TLEVs, LEVs, ULEVs and SULEVs in the passenger car, light-duty truck, and medium-duty vehicle classes.
- § 1960.1(f)(2) The non-LEV so-called "Tier 1" standards for 1995 through 2003 model passenger cars and light-duty trucks.
- § 1960.1(g)(1) The "LEV I" TLEV, LEV and ULEV standards for passenger cars and light-duty trucks.
- § 1960.1(g)(2) The fleet average non-methane organic gas (NMOG) requirements for passenger cars and light-duty trucks for the 1994 through 2000 model years (the fleet average NMOG requirements for the 2001-2003 model years are now in section 1961(b)(1)(A)). The fleet average NMOG mechanism requires manufacturers to introduce an incrementally cleaner mix of Tier 1, TLEV, LEV, ULEV and ZEV vehicles each year, with the fleet average NMOG value for passenger cars and lighter light-duty trucks decreasing from 0.25 gram/mile in the 1994 model year to 0.062 gram/mile in the 2003 model year.
- § 1960.1(h)(1) The non-LEV so-called "Tier 1" standards for 1995-2003 medium-duty vehicles.
- § 1960.1(h)(2) The "LEV I" LEV, ULEV and SULEV standards for medium-duty vehicles (the phase-in requirements are in note (10) to the table in section 1960.1(h)(2)).
- § 1960.1(p) The cold temperature carbon monoxide standards for 1996-2000 model vehicles.

In addition, section 1960.1(q) and (r) contain the following Supplemental Federal Test Procedure (SFTP) standards which apply to both LEV I and LEV II vehicles:

- §1960.1(q) The SFTP standards for 2001 and subsequent model passenger cars and light-duty trucks other than LEVs, ULEVs, and ZEVs (the phase-in requirements are in note (9) to the table in §1960.1(q)).
- §1960.1(r) The SFTP exhaust emission standards for 2001 and subsequent model LEVs and ULEVs in the passenger cars and light-duty truck classes, and 2003 and subsequent LEVs, ULEVs, and SULEVs in the medium-duty classes (the phase-in requirements are in note (10) to the table in §1960.1(r)).

Section 1956.8, which establishes exhaust emission standards for heavy-duty vehicles, contains two subsections containing optional standards for engines used in incomplete medium-duty vehicles or diesel engines used in medium-duty vehicles. Engines subject to this option are tested in accordance with the heavy-duty test procedures incorporated by reference in section 1956.8(b) and (d).

- §1956.8(g) Tier 1 exhaust emission standards for 1995 and subsequent model engines used in incomplete medium-duty vehicles.
- §1956.8(h) LEV, ULEV, SULEV standards for engines used in incomplete medium-duty vehicles, and for diesel engines used in medium-duty LEVs, ULEVs and SULEVs.

The LEV I standards in the subsections of section 1960.1 listed above are also contained in a comprehensive document incorporated by reference in section 1960.1(k) – the “California Exhaust Emission Standards and Test Procedures for 1988 Through 2000 Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles.” This complete 135-page document is available on the ARB’s Internet site. To reduce testing burdens, ARB has to the extent feasible based the California test procedures on the corresponding federal test procedures administered by U.S. EPA. The Standards and Test Procedures document accordingly incorporates the federal test procedures contained in subparts A, B, and C, Part 86, Title 40, Code of Federal Regulations with modifications for the California program.

All 2001 and subsequent model passenger cars, light-duty trucks and medium-duty vehicles certified to the LEV I or LEV II standards will be subject to the CAP 2000 certification procedures – the “California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles,” incorporated by reference in section 1961(d). This document is also available on the ARB’s Internet site, and incorporates the federal test procedures contained in subparts B, C and S, Part 86, Title 40, Code of Federal Regulations with modifications for the California program.

### **The ZEV Regulation**

The LEV I regulations also included standards for ZEVs, and requirements that specified percentages of 1998 and subsequent model passenger cars and light-duty trucks with a loaded vehicle weight of 0-3750 lbs. be certified as ZEVs. As originally adopted in the 1990-1991 LEV I rulemaking, the percentages were 2% for 1998-2000 model vehicles, 5% for 2001-2002 model vehicles, and 10% for 2003 and subsequent model vehicles. In a 1996 rulemaking, the ARB eliminated the requirements for the 1998-2002 model years, but maintained the 10% requirements for the 2003 and subsequent model years. The ZEV requirements were originally contained in note (9) of the table in section 1960.1(g)(2). In the LEV II rulemaking, the ARB moved all of the ZEV provisions to new section 1962, and added provisions pertaining to partial ZEV credits. At a January 25, 2001 hearing, the ARB approved major amendments to the ZEV requirements that significantly reduced the number of full function ZEVs required in the initial years of the program starting with the 2003 model year. These 2001 ZEV amendments were finally adopted on April 12, 2002, were approved by OAL on May 24, 2002, and became operative July 24, 2002. On June 11, 2002, a federal district court judge issued a preliminary injunction that enjoins the ARB’s Executive Officer from enforcing the 2001 ZEV Amendments with respect to the sale of new motor vehicles in the 2003 or 2004 model years, pending final resolution of the case. The ARB appealed issuance of the preliminary injunction to

the U.S. Court of Appeals for the Ninth Circuit, where oral argument was conducted February 13, 2003. Following March 27-28 2003 and April 24, 2003 hearings, on December 19, 2003 the ARB adopted amendments to the ZEV regulation which included a restart of the program in the 2005 model year with substantial additional revisions. These amendments were approved by California's Office of Administrative Law on February 25, 2004, and became effective March 26, 2004.

Section 1962(h) incorporates by reference the "California Exhaust Emission Standards and Test Procedures for 2005 and Subsequent Model Zero-Emission Vehicles, and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck, and Medium-Duty Vehicle Classes," available on the ARB's Internet site.

### **The LEV II Regulations**

The LEV II exhaust emission standards and requirements are contained in section 1961, and will be phased in over the 2004 through 2007 model years. One of the major changes made by the LEV II standards is that all light-duty trucks will be subject to the same emission standards as passenger cars, and vehicles under 8500 lbs. gross vehicle weight (including sport utility vehicles) that had previously been treated as medium-duty vehicles will start to be treated as light-duty trucks. Section 1961 includes the following subsections:

- § 1961(a) The LEV II exhaust emission standards.
- § 1961(b) The LEV II emissions standards phase-in requirements (including fleet average NMOG requirements for passenger cars and light-duty trucks in section 1961(b)(1), a schedule containing the minimum percentages of 2004-2007 passenger cars and light-duty trucks that must be certified to the LEV II rather than LEV I standards in section 1961(b)(2), and medium-duty vehicle phase-in requirements in section 1961(b)(3)). The amendments adopted in December 2001 on the instances in which federally-certified Tier 2 vehicles are required in California are contained largely in section 1961(a)(14).
- § 1961(c) Calculation of NMOG credits and debits.
- § 1961(d) Test Procedures, incorporating the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles" and, with respect to hybrid-electric vehicles, reference the "California Exhaust Emission Standards and Test Procedures for 2005 and Subsequent Model Zero-Emission Vehicles, and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck, and Medium-Duty Vehicle Classes," both of which are available on the ARB's Internet site.
- § 1961(e) Abbreviations.

Another element of the LEV II regulations is the LEV II evaporative emission standards, which are contained in section 1976(b)(1)(F) and are phased in during the 2004 - 2006 model years. The preexisting evaporative emission standards are in section 1976(b)(1)(B) and (C).

### **The Greenhouse Gas Regulations**

In September 2004, the ARB approved regulations to control greenhouse gas emissions from new LEV II vehicles beginning with the 2009 model year. These Greenhouse Gas Regulations add four greenhouse gas air contaminants to the vehicular criteria and toxic air contaminant emissions that California was already regulating – carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and hydrofluorocarbons (air conditioner refrigerants). The Rulemaking established a declining fleet average standard for these gases, with separate standards for the lighter and heavier portions of the passenger vehicle fleet. The greenhouse gas regulations delay compliance for small, independent low volume, and intermediate size manufacturers. The regulations also provide alternative compliance methods including credit generation from alternatively-fueled vehicles, and averaging, banking, and trading of credits within and among manufacturers. To ensure compliance with the adopted standards, the Rulemaking also requires additional certification emissions testing for the covered greenhouse gases.

The Greenhouse Gas Regulations, approved by OAL on September 15, 2005, consist primarily of a new section 1961.1 that becomes effective January 1, 2006. Section 1961.1 includes the following subsections:

- § 1961.1(a) The Greenhouse Gas Emission Requirements (including fleet average greenhouse gas requirements for passenger cars, light-duty trucks, and medium-duty passenger vehicles in section 1961.1(a)(1)(A), procedures for calculating fleet average greenhouse gas values in section 1961.1(a)(1)(B), requirements specific to intermediate volume manufacturers in section 1961.1(a)(1)(C), and requirements specific to small volume manufacturers and independent low volume manufacturers in section 1961.1(a)(1)(D)).
- § 1961.1(b) Calculation of Greenhouse Gas credits and debits.
- § 1961.1(c) Test Procedures, referencing the incorporated “California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles” and, with respect to hybrid-electric vehicles and on-board fuel-fired heaters, referencing the incorporated “California Exhaust Emission Standards and Test Procedures for 2005 and Subsequent Model Zero-Emission Vehicles, and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck, and Medium-Duty Vehicle Classes,” both of which are available on the ARB’s Internet site.
- § 1961.1(d) Abbreviations.
- § 1961.1(e) Definitions specific to section 1961.1
- § 1961.1(f) Severability.
- § 1961.1(g) Effective date of section 1961.1

### **Related Requirements**

In addition to the LEV exhaust emission standards in sections 1960.1 and 1961, and the fleet average greenhouse gas emission standards in section 1961.1, a number of other ARB requirements apply to LEVs. Included in this document are title 13, California Code of Regulations, sections 1965 (Emission Control and Smog Index Labels - 1979 and Subsequent Model-Year Motor Vehicles), 1978 (Standards and Test Procedures for Vehicle Refueling Emissions), 2062 (Assembly-Line Test Procedures - 1998 and Subsequent Model Years), and 2101 (Compliance Testing and Inspection - New Vehicle Selection, Evaluation, and Enforcement). Other requirements not set forth in this document include requirements for on-board diagnostic (OBDII) systems (§§1968.1, 1968.2 and 1968.5), fill pipes (§2235), emission warranties (§§2037 and 2038), recalls (§§2111 and following) and related provisions.



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13 CA ADC § 1900

13 CCR § 1900

Cal. Admin. Code tit. 13, § 1900

BARCLAYS OFFICIAL CALIFORNIA CODE OF REGULATIONS  
TITLE 13. MOTOR VEHICLES  
DIVISION 3. AIR RESOURCES BOARD  
CHAPTER 1. MOTOR VEHICLE POLLUTION CONTROL DEVICES  
ARTICLE 1. GENERAL PROVISIONS  
This database is current through 1/18/08, Register 2008, No. 3

§ 1900. Definitions.

(a) The definitions of this section supplement and are governed by the definitions set forth in chapter 2 (commencing with section 39010), part 1, division 26 of the Health and Safety Code. The definitions set forth in the applicable model-year new vehicle certification and assembly-line test procedures adopted in this chapter are hereby incorporated by reference.

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

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

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

(3) "Emissions-related part" means any automotive part, which affects any regulated emissions from a motor vehicles which is subject to California or federal emissions standards. This includes, at a minimum, those parts specified in the "Emissions-Related Parts List," adopted by the State Board on November 4, 1977, as last amended May 19, 1981.

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

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

(6) "Heavy-duty vehicle" means any motor vehicle having a manufacturer's gross vehicle weight rating greater than 6,000 pounds, except passenger cars.

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

(8) "Independent low volume manufacturer" means a manufacturer with California annual sales of less than 10,000 new passenger cars, light-duty trucks and medium-duty vehicles following aggregation of sales pursuant to this section 1900(b)(8). Annual sales shall be determined as the average number or sales sold for the three previous consecutive model years for which a manufacturer seeks certification; however, for a manufacturer

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

(9) "Intermediate volume manufacturer" means any pre-2001 model year manufacturer with California sales between 3,001 and 60,000 new light- and medium-duty vehicles per model year based on the average number of vehicles sold by the manufacturer each model year from 1989 to 1993; any 2001 through 2002 model year manufacturer with California sales between 4,501 and 60,000 new light- and medium-duty vehicles per model year based on the average number of vehicles sold by the manufacturer each model year from 1989 to 1993; and any 2003 and subsequent model year manufacturer with California sales between 4,501 and 60,000 new light- and medium-duty vehicles based on the average number of vehicles sold for the three previous consecutive model years for which a manufacturer seeks certification. For a manufacturer certifying for the first time in California, model year sales shall be based on projected California sales. A manufacturer's California sales shall consist of all vehicles or engines produced by the manufacturer and delivered for sale in California, except that vehicles or engines produced by the manufacturer and marketed in California by another manufacturer under the other manufacturer's nameplate shall be treated as California sales of the marketing manufacturer. For purposes of applying the 2005 and subsequent model year zero-emission vehicle requirements for intermediate-volume manufacturers under section 1962(b), the annual sales from different firms shall be aggregated in the case of (1) vehicles produced by two or more firms, each one of which either has a greater than 50% equity ownership in another or is more than 50% owned by another; or (2) vehicles produced by any two or more firms if a third party has equity ownership of greater than 50% in each firm.

For purposes of applying the 2009 and subsequent model year Greenhouse Gas requirements for intermediate volume manufacturers under section 1961.1, the annual sales from different firms shall be aggregated in the following situations: (1) vehicles produced by two or more firms, each one of which either has a greater than 10% equity ownership in another or is more than 10% owned by another; or (2) vehicles produced by any two or more firms if a third party has equity ownership of greater than 10% in each firm.

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

(11) "Light-duty truck" means any 2000 and subsequent model motor vehicle certified to the standards in section 1961(a)(1) rated at 8,500 pounds gross vehicle weight or less, and any other motor vehicle, rated at 6,000 pounds gross vehicle weight or less, which is designed primarily for purposes of transportation of property or is a derivative of such a vehicle, or is available with special features enabling off-street or off-highway operation and use.

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

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

ultra-low-emission, super-ultra-low-emission or zero-emission vehicle certified to the standards in Section 1961 (a)(1) or 1962 having a manufacturer's gross vehicle weight rating between 8,501 and 14,000 pounds.

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

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

(16) [Reserved]

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

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

(19) "Recall" means:

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

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

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

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

(22) "Small volume manufacturer" means, with respect to the 2001 and subsequent model-years, a manufacturer with California sales less than 4,500 new passenger cars, light-duty trucks, medium-duty vehicles, heavy-duty vehicles and heavy-duty engines based on the average number of vehicles sold for the three previous consecutive model years for which a manufacturer seeks certification as a small volume manufacturer; however, for manufacturers certifying for the first time in California model-year sales shall be based on projected California sales. A manufacturer's California sales shall consist of all vehicles or engines produced by the manufacturer and delivered for sale in California, except that vehicles or engines produced by the manufacturer and marketed in California by another manufacturer under the other manufacturer's nameplate shall be treated as California sales of the marketing manufacturer. Except as provided in the next paragraph, beginning with the 2009 model year, the annual sales from different firms shall be aggregated in the following situations: (1) vehicles produced by two or more firms, one of which is 10% or greater part owned by another; or (2) vehicles produced by any two or more firms if a third party has equity ownership of 10% or more in each of the firms; or (3) vehicles produced by two or more firms having a common corporate officer(s) who is (are) responsible for the overall direction of the companies; or (4) vehicles imported or distributed by all firms where the vehicles are manufactured by the same entity and the importer or distributor is an authorized agent of the entity.

For purposes of compliance with the zero-emission vehicle requirements, heavy-duty vehicles and engines shall not be counted as part of a manufacturer's sales. For purposes of applying the 2005 and subsequent model year zero-emission vehicle requirements for small-volume manufacturers under section 1962(b), the annual sales from different firms shall be aggregated in the case of (1) vehicles produced by two or more firms, each one of which

either has a greater than 50% equity ownership in another or is more than 50% owned by another; or (2) vehicles produced by any two or more firms if a third party has equity ownership of greater than 50% in each firm.

<General Materials (GM) - References, Annotations, or Tables>

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

HISTORY

1. Amendment of NOTEsection filed 3-16-77; effective thirtieth day thereafter (Register 77, No. 12).
2. Amendment filed 11-28-77; effective thirtieth day thereafter (Register 77, No. 49).
3. Amendment of subsection (b) filed 7-6-81; effective thirtieth day thereafter (Register 81, No. 28).
4. Repealer of article 1 (sections 1900-1905, not consecutive) and new article 1 (sections 1900-1904) filed 1-14-83; effective thirtieth day thereafter (Register 81, No. 3). for prior history, see Registers 81, No. 28; 77, Nos. 49 and 12; and 73, No. 45).
5. Amendment of subsection (b) filed 4-20-83; effective upon filing pursuant to Government Code section 11346.2(d) (Register 90, No. 55).
6. Amendment of subsection (b) filed 7-17-90; operative 8-16-90 (Register 90, No. 35).
7. Amendment of subsection (b) filed 8-2-91; effective 9-2-91 (Register 91, No. 49).
8. Amendment of subsection (b)(9) and new subsections (b)(15) and (b)(16) filed 8-30-91; operative 9-30-91 (Register 92, No. 14).
9. Amendment of subsections (b)(9) and (b)(15) filed 11-8-93; operative 12-8-93 (Register 93, No. 46).
10. Repealer of subsection (b)(15) filed 1-3-97; operative 1-3-97 pursuant to Government Code section 11343.4(d) (Register 97, No. 1).
11. Amendment of subsections (b)(8) and (b)(9), new subsections (b)(17)-(b)(19) and amendment of Note filed 10-28-99; operative 11-27-99 (Register 99, No. 44).
12. New subsection (b)(11) and subsection renumbering filed 11-22-99; operative 12-22-99 (Register 99, No. 48).
13. Amendment of subsections (a)(19)-(a)(20) and new subsections (a)(21)-(a)(21)(D) filed 5-24-2002; operative 6-23-2002 (Register 2002, No. 21).
14. Amendment of subsections (b)(18) and (b)(19) filed 6-24-2002; operative 7-24-2002 (Register 2002, No. 26).
15. Amendment of subsections (b)(18)-(19) and (b)(21) filed 2-25-2004; operative 3-26-2004 (Register 2004, No. 9).
16. Amendment of section and Note filed 9-15-2005; operative 1-1-2006 (Register 2005, No. 37).

13 CCR § 1900, 13 CA ADC § 1900  
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**§ 1961. Exhaust Emission Standards and Test Procedures - 2004 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.**

*Introduction.* This section 1961 contains the California “LEV II” exhaust emission standards for 2004 and subsequent model passenger cars, light-duty trucks and medium-duty vehicles. A manufacturer must demonstrate compliance with the exhaust standards in section 1961(a) applicable to specific test groups, and with the composite phase-in requirements in section 1961(b) applicable to the manufacturer’s entire fleet. Section 1961(b) also includes the manufacturer’s fleet-wide composite phase-in requirements for the 2001 - 2003 model years.

Prior to the 2004 model year, a manufacturer that produces vehicles that meet the standards in section 1961(a) has the option of certifying the vehicles to those standards, in which case the vehicles will be treated as LEV II vehicles for purposes of the fleet-wide phase-in requirements. Similarly, 2004 - 2006 model-year vehicles may be certified to the “LEV I” exhaust emission standards in section 1960.1(g)(1) and (h)(2), in which case the vehicles will be treated as LEV I 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 8,500 lbs. to the heavy-duty engine standards and test procedures set forth in title 13, CCR, sections 1956.8(c), (g) and (h).

(a) *Exhaust Emission Standards.*

(1) *“LEV II” Exhaust Standards.* The following standards represent the maximum exhaust emissions for the intermediate and full useful life from new 2004 and subsequent model-year “LEV II” LEVs, ULEVs, and SULEVs, including fuel-flexible, bi-fuel and dual fuel vehicles when operating on the gaseous or alcohol fuel they are designed to use:

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

<i>Vehicle Type</i>	<i>Durability Vehicle Basis (mi)</i>	<i>Vehicle Emission Category</i>	<i>NMOG (g/mi)</i>	<i>Carbon Monoxide (g/mi)</i>	<i>Oxides of Nitrogen (g/mi)</i>	<i>Formaldehyde (mg/mi)</i>	<i>Particulates (g/mi)</i>
All PCs; LDTs 8500 lbs. GVW or less  Vehicles in this category are tested at their loaded vehicle weight	50,000	LEV	0.075	3.4	0.05	15	n/a
		LEV, Option 1	0.075	3.4	0.07	15	n/a
		ULEV	0.040	1.7	0.05	8	n/a
	120,000	LEV	0.090	4.2	0.07	18	0.01
		LEV, Option 1	0.090	4.2	0.10	18	0.01
		ULEV	0.055	2.1	0.07	11	0.01
		SULEV	0.010	1.0	0.02	4	0.01
	150,000 (Optional)	LEV	0.090	4.2	0.07	18	0.01
		LEV, Option 1	0.090	4.2	0.10	18	0.01
		ULEV	0.055	2.1	0.07	11	0.01
		SULEV	0.010	1.0	0.02	4	0.01
	MDVs 8501 - 10,000 lbs. GVW  Vehicles in this category are tested at their adjusted loaded vehicle weight	120,000	LEV	0.195	6.4	0.2	32
ULEV			0.143	6.4	0.2	16	0.06
SULEV			0.100	3.2	0.1	8	0.06
150,000 (Optional)		LEV	0.195	6.4	0.2	32	0.12
		ULEV	0.143	6.4	0.2	16	0.06
		SULEV	0.100	3.2	0.1	8	0.06
MDVs 10,001-14,000 lbs. GVW  Vehicles in this category are tested at their adjusted loaded vehicle weight	120,000	LEV	0.230	7.3	0.4	40	0.12
		ULEV	0.167	7.3	0.4	21	0.06
		SULEV	0.117	3.7	0.2	10	0.06
	150,000 (Optional)	LEV	0.230	7.3	0.4	40	0.12
		ULEV	0.167	7.3	0.4	21	0.06
		SULEV	0.117	3.7	0.2	10	0.06

(2) *Reactivity Adjustment in Determining Compliance with the NMOG Standard*

(A) The NMOG emission results from all TLEVs, LEVs, ULEVs and SULEVs certifying on a fuel other than conventional gasoline shall be numerically adjusted to establish an NMOG exhaust mass emission value equivalent. The manufacturer shall multiply measured NMOG exhaust emission results by the appropriate reactivity adjustment factor set forth in section 1961(a)(2)(B) or established in accordance with the test procedures incorporated by reference in section 1961(d). The reactivity adjustment factor represents the ratio of the NMOG specific reactivity of a low-emission vehicle designed to operate on a fuel other than conventional gasoline compared to the NMOG baseline specific reactivity of vehicles in the same vehicle emission category operated on conventional gasoline.

(B) The following reactivity adjustment factors apply:

	<i>Light-Duty Vehicles 0-6000 lbs. GVW</i>			<i>Medium-Duty Vehicles 6001 lbs. - 14,000 lbs. GVW</i>	
	<i>TLEV</i>	<i>LEV</i>	<i>ULEV</i>	<i>LEV</i>	<i>ULEV</i>
<i>Fuel</i>	<i>Baseline Specific Reactivity (grams ozone / gram NMOG)</i>				
Conventional Gasoline	3.42	3.13	3.13	3.13	3.13
	<b>Reactivity Adjustment Factors</b>				
RFG (through the 2003 model year)	0.98	0.94	0.94	0.94	0.94
M85	0.41	0.41	0.41	0.41	0.41
Natural Gas	1.0	0.43	0.43	0.43	0.43
LPG	1.0	0.50	0.50	0.50	0.50
	<b>Methane Reactivity Adjustment Factors</b>				
Natural Gas	0.0043	0.0047	0.0047	0.0047	0.0047

(3) *NMOG Standards for Bi-Fuel, Fuel-Flexible and Dual-Fuel Vehicles Operating on Gasoline.* For fuel-flexible, bi-fuel, and dual-fuel PCs, LDTs and MDVs, compliance with the NMOG exhaust mass emission standards shall 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, CO, NOx and formaldehyde set forth in the table in section 1961(a)(1) when certifying the vehicle for operation on the gaseous or alcohol fuel.

The following standards represent the maximum NMOG emissions when the vehicle is operating on gasoline. A manufacturer shall not apply a reactivity adjustment factor to the exhaust NMOG mass emission result when operating on gasoline. 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 test procedures incorporated by reference in section 1961(d).

Testing at 50 F is not required for fuel-flexible, bi-fuel and dual-fuel vehicles when operating on gasoline. The applicable CO, NOx and formaldehyde standards are set forth in section 1961(a)(1).

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

(4) *50°F Exhaust Emission Standards.* All light- and medium-duty LEVs, ULEVs and SULEVs must demonstrate compliance with the following exhaust emission standards for NMOG 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 Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles” incorporated by reference in section 1961(d). The NMOG mass emission result shall be multiplied by the applicable reactivity adjustment factor, if any, prior to comparing to the applicable adjusted 50,000 mile certification standards set forth below. A manufacturer may demonstrate compliance with the NMOG 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 Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles” incorporated by reference in section 1961(d). Emissions of CO and NOx measured at 50° F shall not exceed the standards set forth in §1961(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. Natural gas and diesel-fueled vehicles are exempt from the 50° F test requirements.

Vehicle Weight Class	Vehicle Emission Category (g/mi)					
	LEV		ULEV		SULEV	
	NMOG	HCHO	NMOG	HCHO	NMOG	HCHO
PCs; LDTs 0-8500 lbs. GVW	0.150	0.030	0.080	0.016	0.020	0.008
MDVs 8501-10,000 lbs. GVW	0.390	0.064	0.286	0.032	0.200	0.016
MDVs 10,001-14,000 lbs. GVW	0.460	0.080	0.334	0.042	0.234	0.020

(5) *Cold CO Standard.* The following standards represent the 50,000 mile cold temperature exhaust carbon monoxide emission levels from new 2001 and subsequent model-year passenger cars, light-duty trucks, and medium-duty vehicles:

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

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

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These standards are applicable 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 Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles” incorporated by reference in section 1961(d). Natural gas, diesel-fueled and zero-emission vehicles are exempt from these standards.

(6) *Highway NOx Standard.* The maximum emissions of oxides of nitrogen measured on the federal Highway Fuel Economy Test (HWFET; 40 CFR 600 Subpart B, which is incorporated herein by reference) shall not be greater than 1.33 times the applicable PC and LDT standards or 2.0 times the applicable MDV standards set forth in section 1961(a)(1). Both the projected emissions and the HWFET standard shall be rounded in accordance with ASTM E29-67 to the nearest 0.1 g/mi (or 0.01 g/mi for vehicles certified to the 0.05 or 0.02 g/mi NOx standards) before being compared.

(7) *Supplemental Federal Test Procedure (SFTP) Off-Cycle Emission Standards.* The SFTP exhaust emission levels from new 2004 and subsequent model LEVs, ULEVs, and SULEVs shall not exceed the standards set forth in section 1960.1(r).

(8) *Requirements for Vehicles Certified to the Optional 150,000 Mile Standards.*

(A) *Requirement to Generate Additional Fleet Average NMOG Credit.* A vehicle that is certified to the 150,000 mile standards in section 1961(a) shall generate additional NMOG fleet average credit as set forth in 1961(b)(1) or additional vehicle equivalent credits as set forth in 1961(b)(2) provided that the manufacturer extends the warranty on high cost parts to 8 years or 100,000 miles, whichever occurs first, and agrees to extend the limit on high mileage in-use testing to 112,500 miles.

(B) *Requirement to Generate a Partial ZEV Allowance.* A vehicle that is certified to the 150,000 mile SULEV standards shall also generate a partial ZEV allocation according to the criteria set forth in section C.3 of the “California Exhaust Emission Standards and Test Procedures for 2005 and Subsequent Model Zero-Emission Vehicles, and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes,” incorporated by reference in section 1962.

(9) *Optional LEV II NOx Standard.* A manufacturer may certify up to 4% of its light-duty truck fleet from 3751 lbs. LVW - 8500 lbs. GVW with a maximum base payload of 2500 lbs. or more to the LEV, option 1, standard set forth in 1961(a)(1) based on projected sales of trucks in the LDT2 category. Passenger cars and light-duty trucks 0-3750 lbs. LVW are not eligible for this option.

(10) *Intermediate In-Use Compliance Standards.* For test groups certified prior to the 2007 model year, the following intermediate in-use compliance standards shall apply for the first two model years the test group is certified to the new standard. For SULEVs certified prior to the 2004 model year, the following intermediate in-use compliance SULEV standards shall apply through the 2006 model year.

Emission Category	Durability Vehicle Basis	LEV II PCs and LDTs		LEV II MDVs 8500 - 10,000 lbs. GVW
		NMOG	NOx	NOx
LEV/ULEV	50,000	n/a	0.07	n/a
	120,000	n/a	0.10	0.3
	150,000	n/a	0.10	0.3
LEV, Option 1	50,000	n/a	0.10	n/a
	120,000	n/a	0.14	n/a
	150,000	n/a	0.14	n/a
SULEV	120,000	0.020	0.03	0.15
	150,000	0.020	0.03	0.15

(11) *NMOG Credit for Vehicles with Zero-Evaporative Emissions.* In determining compliance of a vehicle with the applicable exhaust NMOG standard, a gram per mile NMOG factor, to be determined by the Executive Officer based on available data, shall be subtracted from the reactivity-adjusted NMOG exhaust emission results for any vehicle that has been certified to the “zero” evaporative emission standard set forth in title 13, CCR, section 1976(b)(1)(E). This credit shall not apply to a SULEV that generates a partial ZEV allowance.

(12) *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, 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;

(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.

(13) *NOx Credits for Pre-2004 MDVs Certified to the LEV I LEV or ULEV Standards.* Prior to the 2004 model year, a manufacturer may earn a 0.02 g/mi per vehicle NOx credit for MDVs between 6,000-8500 lbs. GVW certified to the LEV I LEV or ULEV standards for PCs and LDTs set forth in section 1960.1(g)(1). The manufacturer may apply the credit on a per vehicle basis to the NOx emissions of LDTs between 6,000-8500 lbs. GVW certified to the PC/LDT LEV or ULEV standards in section 1961(a)(1) for the 2004 through 2008 model years.

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

(A) *General Requirement.* Whenever a manufacturer federally-certifies a 2004 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 Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles,” as incorporated by reference in section 1961(d).

(B) *Exception for clean fuel fleet vehicles.* Section 1961(a)(14)(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.

(C) *Opt-in for 2003 or prior model year vehicles.* A manufacturer may certify a passenger car, light-duty truck or medium-duty vehicle to federal exhaust emission standards pursuant to section 1961(a)(14)(A) prior to the 2004 model year.

(15) *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 LEV II ULEV standards for passenger cars and light-duty trucks less than 8,500 pounds GVW as set forth in section 1961(a)(1). On-board fuel-fired heaters may not be operable at ambient temperatures above 40°F.

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

(1) *Fleet Average NMOG Requirements for Passenger Cars and Light-Duty Trucks.*

(A) The fleet average non-methane organic gas exhaust mass emission values from the passenger cars and light-duty trucks certified to the Tier 1, LEV I and LEV II standards that are produced and delivered for sale in California each model year by a manufacturer other than a small volume manufacturer or an independent low volume manufacturer shall not exceed:

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

(B) *Calculation of Fleet Average NMOG Value.*

1. *Basic Calculation.*

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

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

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

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

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

<i>Model Year</i>	<i>Emission Category</i>	<i>Emission Standard Value</i>	
		<i>All PCs; LDTs 0-3750 lbs. LVW</i>	<i>LDTs 3751-5750 lbs. LVW</i>
2001 and subsequent (§1960.5 “AB 965” vehicles only)	All	Federal Emission Standard to which Vehicle is Certified	Federal Emission Standard to which Vehicle is Certified
2001 - 2003 (§1960.1(f)(2))	Tier 1	0.25	0.32
2001 - 2006 model year vehicles certified to the “LEV I” standards in §1960.1(g)(1) (For TLEVs, 2001 - 2003 model years only)	TLEVs	0.125	0.160
	LEVs	0.075	0.100
	ULEVs	0.040	0.050
Model Year	Emission Category	All PCs; LDTs 0-3750 lbs. LVW	LDTs 3751 lbs. LVW - 8500 lbs. GVW
2004 and subsequent model year vehicles certified to the “LEV II” standards in §1961(a)(1)	LEVs	0.075	0.075
	ULEVs	0.040	0.040
	SULEVs	0.01	0.01
2004 and subsequent model year vehicles certified to the optional 150,000 mile “LEV II” standards for PCs and LDTs in 1961(a)(1)	LEVs	0.06	0.06
	ULEVs	0.03	0.03
	SULEVs	0.0085	0.0085

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

$$\begin{aligned} \text{LEV HEV Contribution Factor} &= 0.075 - [(\text{Zero-emission VMT Factor}) \times 0.035] \\ \text{ULEV HEV Contribution Factor} &= 0.040 - [(\text{Zero-emission VMT Factor}) \times 0.030] \end{aligned}$$

where Zero-emission VMT Factor for HEVs is determined in accordance with section 1962.

3. *Federally-Certified Vehicles.* A vehicle certified to the federal standards for a federal exhaust emissions bin in accordance with Section H.1 of the “California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles,” as incorporated by reference in section 1961(d), shall use the corresponding intermediate useful life NMOG standard to which the vehicle is deemed certified in the fleet average calculation.

(C) *Requirements for Small Volume Manufacturers.*

1. In 2001 through 2006 model years, a small volume manufacturer shall not exceed a fleet average NMOG value of 0.075 g/mi for PCs and LDTs from 0-3750 lbs. LVW or 0.100 g/mi for LDTs from 3751-5750 lbs. LVW calculated in accordance with section 1961(b)(1)(B). In 2007 and subsequent model years, a small volume manufacturer shall not exceed a fleet average NMOG value of 0.075 for PCs and LDTs from 0-3750 lbs. LVW or 0.075 for LDTs from 3751 lbs. LVW - 8500 lbs. GVW calculated in accordance with section 1961(b)(1)(B).

2. If a manufacturer's average California sales exceed 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 no longer be treated as a small volume manufacturer and shall comply with the fleet average requirements applicable to larger manufacturers as specified in section 1961(b)(1) beginning with the fourth 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) *Phase-in Requirements for Independent Low Volume Manufacturers.* In 2001 through 2006 model years, an independent low volume manufacturer shall not exceed a fleet average NMOG value of 0.075 g/mi for PCs and LDTs from 0-3750 lbs. LVW or 0.100 g/mi for LDTs from 3751-5750 lbs. LVW calculated in accordance with section 1961(b)(1)(B). In 2007 and subsequent model years, an independent low volume manufacturer shall not exceed a fleet average NMOG value of 0.060 for PCs and LDTs from 0-3750 lbs. LVW or 0.065 g/mi for LDTs from 3751 lbs. LVW - 8500 lbs. GVW calculated in accordance with section 1961(b)(1)(B).

(E) *Treatment of ZEVs.* ZEVs classified as LDTs (>3750 lbs. LVW) that have been counted toward the ZEV requirement for PCs and LDTs (0-3750 lbs. LVW) as specified in section 1962 shall be included as LDT1s in the calculation of a fleet average NMOG value.

(2) *LEV II Phase-In Requirement for PCs and LDTs.* Beginning in the 2004 model year, a manufacturer, except a small volume manufacturer or an independent low volume manufacturer, shall certify a percentage of its PC and LDT fleet to the LEV II standards in section 1961(a) according to the following phase in schedule:

<i>Model Year</i>	<i>PC/LDT1 (%)</i>	<i>LDT2 (%)</i>
2004	25	25
2005	50	50
2006	75	75
2007	100	100

In determining compliance with the phase-in schedule, the fleet shall consist of LEV I and LEV II PCs and LDT1s for the PC/LDT1 calculation, and LEV I and LEV II LDT2s for the LDT2 calculation. LEV I MDVs are not counted in the calculation until they are certified as LEV II LDT2s.

A manufacturer may use an alternative phase-in schedule to comply with these phase-in requirements as long as equivalent NOx emission reductions are achieved by the 2007 model year from each of the two categories -- PC/LDT1 and LDT2. Model year emission reductions shall be calculated by multiplying the percent of either PC/LDT1 or LDT2 vehicles meeting the LEV II standards in a given model year (based on a manufacturer's projected sales volume of vehicles in each category) by 4 for the 2004 model year, 3 for the 2005 model year, 2 for the 2006 model year and 1 for the 2007 model year. The yearly results for PCs/LDT1s shall be summed together to determine a separate cumulative total for PCs/LDT1s and the yearly results for LDT2s shall be summed together to determine a cumulative total for LDT2s. The cumulative total for each category must be equal to or exceed 500 to be considered equivalent. A manufacturer may add vehicles introduced before the 2004 model year (e.g., the percent of vehicles introduced in 2003 would be multiplied by 5) to the cumulative total.

(3) *Medium-Duty Vehicle Phase-In Requirements.*

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

<i>Model Year</i>	<i>Vehicles Certified to §1960.1(h)(1), (h)(2), and §1961(a)(1) (%)</i>		<i>Vehicles Certified to §1956.8(g) or (h) (%)</i>		
	<i>LEV</i>	<i>ULEV</i>	<i>Tier 1</i>	<i>LEV</i>	<i>ULEV</i>
2001	80	20	100	0	0
2002	70	30	0	100	0
2003	60	40	0	100	0
2004 +	40	60	0	0	100

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

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

(D) *Requirements for Small Volume Manufacturers.* In 2001 through 2003 model years, a small volume manufacturer shall certify, produce, and deliver for sale in California vehicles or engines certified to the MDV Tier 1 standards in a quantity equivalent to 100% of its MDV fleet. In 2004 through 2006 model years, a small volume manufacturer shall certify, produce, and deliver for sale in California vehicles or engines certified to the MDV LEV I standards in a quantity equivalent to 100% of its MDV fleet. Engines certified to these MDV LEV I standards are not be eligible for emissions averaging.

(E) For a manufacturer that elects to certify to the optional medium-duty engine standards in title 13, CCR §1956.8(c) or (h), all such 2005 and subsequent model year 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 §1956.8(b) or (d), as applicable.

(c) *Calculation of NMOG Credits/Debits*

(1) *Calculation of NMOG Credits for Passenger Cars and Light-Duty Trucks.* In 2001 and subsequent model years, a manufacturer that achieves fleet average NMOG values lower than the fleet average NMOG requirement for the corresponding model year shall receive credits in units of g/mi NMOG determined as:

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

(Total No. of Vehicles Produced and Delivered for Sale in California, Including ZEVs and HEVs).

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

(2) *Calculation of Vehicle Equivalent NMOG Credits for Medium-Duty Vehicles.*

(A) In 2001 and subsequent model years, a manufacturer that produces and delivers for sale in California MDVs in excess of the equivalent requirements for LEVs, ULEVs and/or SULEVs certified to the exhaust emission standards set forth in section 1961(a)(1) or to the exhaust emission standards set forth in Title 13, CCR, Section 1956.8(h) 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:

$$\begin{aligned} & \{[(\text{No. of LEVs Produced excluding HEVs}) + \\ & (\text{No. of LEV HEVs} \times \text{HEV VEC factor for LEVs})] + \\ & (1.20 \times \text{No. of LEVs certified to the 150,000 mile standards})\} - \\ & (\text{Equivalent No. of LEVs Required to be Produced})\} + \\ & \{[(1.4) \times (\text{No. of ULEVs Produced excluding HEVs}) + \\ & (\text{No. of ULEV HEVs} \times \text{HEV VEC factor for ULEVs})] + \\ & (1.50 \times \text{No. of ULEVs certified to the 150,000 mile standards})\} - \\ & [(1.4) \times (\text{Equivalent No. of ULEVs Required to be Produced})]\} + \\ & \{[(1.7) \times (\text{No. of SULEVs Produced excluding HEVs}) + \\ & (\text{No. of SULEV HEVs} \times \text{HEV VEC factor for SULEVs})] + \\ & (1.75 \times \text{No. of SULEVs certified to the 150,000 mile standards})\} - \\ & [(1.7) \times (\text{Equivalent No. of SULEVs Required to be Produced})]\} + \\ & [(2.0) \times (\text{No. of ZEVs Certified and Produced as MDVs})]. \end{aligned}$$

MDVs certified prior to the 2004 model year to the LEV I LEV or ULEV standards for PCs and LDTs 0-3750 lbs. LVW set forth in section E.1 of these test procedures shall receive VECs calculated in accordance with the following equation, where the term "produced" means produced and delivered for sale in California:

$$\begin{aligned} & [(1.6) \times (\text{No. of MDVs meeting the LEV I LEV standards for PCs and LDTs 0-3750 lbs. LVW excluding HEVs}) + \\ & (\text{No. of HEVs meeting the LEV I LEV standards for PCs and LDTs 0-3750 lbs. LVW} \times \text{HEV VEC factor for} \\ & \text{MDVs meeting the LEV I LEV standards for PCs and LDTs 0-3750 lbs. LVW})] + \\ & [(1.65 \times \text{No. of MDVs certified to the 150,000 mile LEV I LEV standards for PCs and LDTs 0-3750 lbs.})] + \end{aligned}$$

$$[(1.8) \times (\text{No. of MDVs meeting the LEV I ULEV standards for PCs and LDTs 0-3750 lbs. LVW excluding HEVs})$$

$$+$$

$$(\text{No. of HEVs meeting the LEV I ULEV standards for PCs and LDTs 0-3750 lbs. LVW} \times \text{HEV VEC factor for MDVs meeting the LEV I ULEV standards for PCs and LDTs 0-3750 lbs. LVW}) +$$

$$[(1.85 \times \text{No. of MDVs certified to the 150,000 mile LEV I ULEV standards for PCs and LDTs 0-3750 lbs.})].$$

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

$$1 + [(\text{LEV standard} - \text{ULEV standard}) \times (\text{Zero-emission VMT Factor}) \div \text{LEV standard}] \text{ for LEVs};$$

$$1 + [(\text{ULEV standard} - \text{SULEV standard}) \times (\text{Zero-emission VMT Factor}) \div \text{ULEV standard}] \text{ for ULEVs};$$

$$1 + [(\text{SULEV standard} - \text{ZEV standard}) \times (\text{Zero-emission VMT Factor}) \div \text{SULEV standard}] \text{ for SULEVs};$$

where “Zero-emission VMT Factor” for an HEV is determined in accordance with section 1962.

The HEV VEC factor for MDVs prior to model year 2004 meeting the LEV I LEV and ULEV standards for PCs and LDTs 0-3750 lbs. LVW is calculated as follows:

$$1 + [(\text{MDV SULEV standard} - \text{PC LEV I LEV standard}) \times (\text{Zero-emission VMT Factor}) \div \text{PC LEV I LEV standard}] \text{ for MDVs meeting the LEV I LEV standards for PCs and LDTs 0-3750 lbs. LVW};$$

$$1 + [(\text{MDV SULEV standard} - \text{PC ULEV standard}) \times (\text{Zero-emission VMT Factor}) \div \text{PC LEV I ULEV standard}] \text{ for MDVs meeting the ULEV I LEV standards for PCs and LDTs 0-3750 lbs. LVW}.$$

(C) A manufacturer that fails to produce and deliver for sale in California the equivalent quantity of MDVs certified to LEV, ULEV and/or SULEV exhaust emission standards, shall receive “Vehicle-Equivalent Debits” (or “VEDs”) equal to the amount of negative VECs determined by the equation in section 1961(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 emission credits or VECs in an amount equal to the g/mi NMOG debits or VEDs, or by submitting a commensurate amount of g/mi NMOG credits or VECs to the Executive Officer that were earned previously or acquired from another manufacturer. For 2001 through 2003 and for 2007 and subsequent model years, manufacturers shall equalize emission debits by the end of the following model year. For 2004 through 2006 model years, a manufacturer shall equalize NMOG debits for PCs and LDTs and LEV II MDVs within three model years and prior to the end of the 2007 model year. If emission debits are not equalized within the specified time period, the manufacturer shall be subject to the Health and Safety Code section 43211 civil penalty applicable to a manufacturer which sells a new motor vehicle that does not meet the

applicable emission standards adopted by the state board. The cause of action shall be deemed to accrue when the emission debits are not equalized by the end of the specified time period. For the purposes of Health and Safety Code section 43211, the number of passenger cars and light-duty trucks not meeting the state board's emission standards shall be determined by dividing the total amount of g/mi NMOG emission debits for the model year by the g/mi NMOG fleet average requirement for PCs and LDTs 0-3750 lbs. LVW 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 the subsequent model year. The value of any credits not used to equalize the previous model-year's debit shall be discounted by 50% at the beginning of second model year after being earned, shall be discounted to 25% of its original value if not used by the beginning of the third model year after being earned, and will have no value if not used by the beginning of the fourth model year after being earned.

(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 Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," as amended October 17, 2007, and the "California Non-Methane Organic Gas Test Procedures," as amended July 30, 2002, 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 2005 and Subsequent Model Zero-Emission Vehicles, and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes," incorporated by reference in section 1962.

(e) *Abbreviations.* The following abbreviations are used in this section 1961:

"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 "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.

"LEV" means low-emission vehicle.

“LPG” means liquefied petroleum gas.  
“LVW” means loaded vehicle weight.  
“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.  
“NO<sub>x</sub>” means oxides of nitrogen.  
“PC” means passenger car.  
“SULEV” means super-ultra-low-emission vehicle.  
“TLEV” means transitional 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.

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

**§ 1961.1. Greenhouse Gas Exhaust Emission Standards and Test Procedures - 2009 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.**

(a) *Greenhouse Gas Emission Requirements.* The greenhouse gas emission levels from new 2009 and subsequent model year passenger cars, light-duty trucks, and medium-duty passenger vehicles shall not exceed the following requirements. Light-duty trucks from 3751 lbs. LVW – 8500 lbs. GVW that are certified to the Option 1 LEV II NOx Standard in section 1961(a)(1) are exempt from these greenhouse gas emission requirements, however, passenger cars, light-duty trucks 0-3750 lbs. LVW, and medium-duty passenger vehicles are not eligible for this exemption.

(1) *Fleet Average Greenhouse Gas Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles.*

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

<b>FLEET AVERAGE GREENHOUSE GAS EXHAUST MASS EMISSION REQUIREMENTS FOR PASSENGER CAR, LIGHT-DUTY TRUCK, AND MEDIUM-DUTY PASSENGER VEHICLE WEIGHT CLASSES<sup>1</sup></b> (4,000 mile Durability Vehicle Basis)		
<i>Model Year</i>	<i>Fleet Average Greenhouse Gas Emissions (grams per mile CO<sub>2</sub>-equivalent)</i>	
	<i>All PCs; LDTs 0-3750 lbs. LVW</i>	<i>LDTs 3751 lbs. LVW - 8500 lbs. GVW; MDPVs</i>
2009	323	439
2010	301	420
2011	267	390
2012	233	361
2013	227	355
2014	222	350
2015	213	341
2016+	205	332

<sup>1</sup> Each manufacturer shall demonstrate compliance with these values in accordance with section 1961.1(a)(1)(B).

(B) *Calculation of Fleet Average Greenhouse Gas Value.*

1. *Basic Calculation.*

a. Each manufacturer shall calculate both a “city” grams per mile average CO<sub>2</sub>-equivalent value for each GHG vehicle test group and a “highway” grams per mile average CO<sub>2</sub>-equivalent value for each GHG vehicle test group, including vehicles certified in accordance with section 1960.5 and vehicles certified in accordance with section 1961(a)(14), using the following formula. Greenhouse Gas emissions used for the “city” CO<sub>2</sub>-equivalent value calculation shall be measured using the “FTP” test cycle (40 CFR, Part 86, Subpart B). Greenhouse Gas emissions used for the “highway” CO<sub>2</sub>-equivalent value calculation shall be based on emissions measured using the Highway Test Procedures.

$$\text{CO}_2\text{-Equivalent Value} = \text{CO}_2 + 296 \times \text{N}_2\text{O} + 23 \times \text{CH}_4 - \text{A/C Direct Emissions Allowance} - \text{A/C Indirect Emissions Allowance}$$

A manufacturer may use N<sub>2</sub>O = 0.006 grams per mile in lieu of measuring N<sub>2</sub>O exhaust emissions.

b. *A/C Direct Emissions Allowance.* A manufacturer may use the following A/C Direct Emission Allowances, upon approval of the Executive Officer, if that manufacturer demonstrates that the following requirements are met. Such demonstration shall include specifications of the components used and an engineering evaluation that verifies the estimated lifetime emissions from the components and the system. A manufacturer shall also provide confirmation that the number of fittings and joints has been minimized and components have been optimized to minimize leakage. No A/C Direct Emissions Allowance is permitted if the following requirements are not met.

i. A “low-leak air conditioning system” shall be defined as one that meets all of the following criteria:

- A. All pipe and hose connections are equipped with multiple o-rings, seal washers, or metal gaskets only (e.g., no single o-rings);
- B. All hoses in contact with the refrigerant must be ultra-low permeability barrier or veneer hose on both the high-pressure and the low-pressure sides of the system (e.g., no rubber hoses); and
- C. Only multiple-lip compressor shaft seals shall be used (with either compressor body o-rings or gaskets).

ii. For an air conditioning system that uses HFC-134a as the refrigerant:

- A. An A/C Direct Emissions Allowance of 3.0 CO<sub>2</sub>-equivalent grams per mile shall apply if the system meets the criteria for a “low-leak air conditioning system.”

- B. An A/C Direct Emissions Allowance of 3.0 CO<sub>2</sub>-equivalent grams per mile shall apply if the manufacturer demonstrates alternative technology that achieves equal or lower direct emissions than a “low-leak air conditioning system.”
- C. An A/C Direct Emissions Allowance greater than 3.0 CO<sub>2</sub>-equivalent grams per mile may apply for an air conditioning system that reduces refrigerant leakage further than would be obtained from a “low-leak air conditioning system.” A maximum A/C Direct Emissions Allowance of 6.0 CO<sub>2</sub>-equivalent grams per mile may be earned for an air conditioning system that has 100 percent containment of refrigerant during “normal operation.” To obtain an A/C Direct Emissions Allowance greater than 3.0 CO<sub>2</sub>-equivalent grams per mile, the manufacturer must provide an engineering evaluation that supports the allowance requested.

iii. For an air conditioning system that uses HFC-152a, CO<sub>2</sub> refrigerant, or any refrigerant with a GWP of 150 or less:  
An A/C Direct Emissions Allowance shall be calculated using the following formula:

$$\text{A/C Direct Emissions Allowance} = A - (B \times C)$$

where: A = 9 CO<sub>2</sub>-equivalent grams per mile (the lifetime vehicle emissions expected from an air conditioning system that uses refrigerant HFC-134a);

$$B = 9 \text{ CO}_2\text{-equivalent g/mi} \times \frac{\text{GWP}}{1300}$$

where: B is the lifetime vehicle emissions expected from an air conditioning system that uses a refrigerant with a GWP of 150 or less, and

“GWP” means the GWP of this refrigerant; and

C = 1, except for an air conditioning system that meets the criteria of a “low-leak air conditioning system.”

For an air conditioning system that meets or exceeds the criteria of a “low-leak air conditioning system,” the following formula shall apply:

$$C = 1 - (0.12 \times \text{credit})$$

where: “credit” equals 3.0 CO<sub>2</sub>-equivalent grams per mile for a “low-leak air conditioning system” that meets the criteria of section 1961.1(a)(1)(B)1.b.i., or

“credit” equals a value greater than 3.0 CO<sub>2</sub>-equivalent grams per mile for an air conditioning system that reduces refrigerant leakage further than would be obtained from a “low-leak air conditioning system.” A maximum credit of 6.0 CO<sub>2</sub>-equivalent grams per mile may be earned for an air conditioning system that has 100 percent containment of refrigerant during normal operation. To obtain a credit greater than 3.0 CO<sub>2</sub>-equivalent grams per mile, the manufacturer must provide an engineering evaluation that supports the credit requested.

c. *A/C Indirect Emissions Allowance.* A manufacturer may use the following A/C Indirect Emissions Allowances, upon approval of the Executive Officer, if the manufacturer demonstrates using data or an engineering evaluation that the air conditioning system meets the following requirements. A manufacturer may use the following A/C Indirect Emissions Allowances for other technologies, upon approval of the Executive Officer, if that manufacturer demonstrates that the air conditioning system achieves equal or greater CO<sub>2</sub>-equivalent grams per mile emissions reductions.

- i. An “A/C system with reduced indirect emissions” shall be defined as one that meets all of the following criteria:
  - A. Has managed outside and recirculated air balance to achieve comfort, demisting, and safety requirements, based on such factors as temperature, humidity, pressure, and level of fresh air in the passenger compartment to minimize compressor usage;
  - B. Is optimized for energy efficiency by utilizing state-of-the-art high efficiency evaporators, condensers, and other components; and
  - C. Has an externally controlled compressor (such as an externally controlled variable displacement or variable speed compressor or an externally controlled fully cycling fixed displacement compressor) that adjusts evaporative temperature to minimize the necessity of reheating cold air to satisfy occupant comfort.
- ii. For an A/C system that meets all of the criteria for an “A/C system with reduced indirect emissions,” the allowance shall be calculated using the following emission factors, up to a maximum allowance of 9.0 CO<sub>2</sub>-equivalent grams per mile if the system has one evaporator and up to a maximum allowance of 11.0 CO<sub>2</sub>-equivalent grams per mile if the system has two evaporators:
  - A. 5.0 CO<sub>2</sub>-equivalent grams per mile per 100 cc of maximum compressor displacement for a system that does not use CO<sub>2</sub> as the refrigerant
  - B. 27.5 CO<sub>2</sub>-equivalent grams per mile per 100 cc of maximum compressor displacement for a system that uses CO<sub>2</sub> as the refrigerant

iii. For an air conditioning system equipped with a refrigerant having a GWP of 150 or less, the allowance shall be calculated using the following emission factors, up to a maximum allowance of 0.5 CO<sub>2</sub>-equivalent grams per mile:

- A. 0.2 CO<sub>2</sub>-equivalent grams per mile per 100cc of maximum compressor displacement for a system that does not use CO<sub>2</sub> as the refrigerant and
- B. 1.1 CO<sub>2</sub>-equivalent grams per mile per 100cc of maximum compressor displacement for a system that uses CO<sub>2</sub> as the refrigerant.

d. *Upstream Greenhouse Gas Emission Adjustment Factors for Alternative Fuel Vehicles.* A grams per mile average CO<sub>2</sub>-equivalent value for each GHG vehicle test group certifying on a fuel other than conventional gasoline, including vehicles certified in accordance with section 1960.5 and vehicles certified in accordance with section 1961(a)(14), shall be calculated as follows:

$$(\text{CO}_2 + \text{A/C Indirect Emissions}) \times (\text{Fuel Adjustment Factor}) + 296 \times \text{N}_2\text{O} + 23 \times \text{CH}_4 + \text{A/C Direct Emissions}$$

where:

$$\text{A/C Indirect Emissions} = A - B$$

where: “A” represents the indirect emissions associated with an A/C system that does not incorporate any of the A/C improvements described in section 1961.1(a)(1)(B)1.c. A is determined by the following emission factors, with a maximum value of 17.0 CO<sub>2</sub>-equivalent grams per mile for a system that has one evaporator and a maximum value of 21.0 CO<sub>2</sub>-equivalent grams per mile for a system that has two evaporators.

A = 9.6 CO<sub>2</sub>-equivalent grams per mile per 100cc of maximum compressor displacement for an A/C system that does not use CO<sub>2</sub> as the refrigerant or

A = 52.8 CO<sub>2</sub>-equivalent grams per mile per 100cc of maximum compressor displacement for an A/C system that uses CO<sub>2</sub> as the refrigerant.

B = A/C Indirect Emissions Allowance as calculated per section 1961.1(a)(1)(B)1.c.

A/C Direct Emissions = 9 CO<sub>2</sub>-equivalent grams per mile – A/C Direct Emissions Allowance as calculated per section 1961.1(a)(1)(B)1.b.

The Fuel Adjustment Factors are:

<b>Fuel</b>	<b>Fuel Adjustment Factor</b>
Natural Gas	1.03
LPG	0.89
E85	0.74

e. *Calculation of CO<sub>2</sub>-Equivalent Emissions for Hydrogen Internal Combustion Engine Vehicles and for Electric and Hydrogen ZEVs.* The grams per mile average CO<sub>2</sub>-equivalent value for each GHG vehicle test group certifying to ZEV standards, including vehicles certified in accordance with section 1960.5 and vehicles certified in accordance with section 1961(a)(14), shall be:

$$\text{A/C Direct Emissions} + \text{Upstream Emissions Factor}$$

where:  $\text{A/C Direct Emissions} = 9 \text{ CO}_2\text{-equivalent grams per mile} - \text{A/C Direct Emissions Allowance as calculated per section 1961.1(a)(1)(B)1.b.}$

The Upstream Emissions Factors are:

<b>Vehicle Type</b>	<b>Upstream Emissions Factor<sup>1</sup> (CO<sub>2</sub>-equivalent g/mi)</b>
Electric ZEV	130
Hydrogen Internal Combustion Engine Vehicle	290
Hydrogen ZEV	210

<sup>1</sup>The Executive Officer may approve use of a lower upstream emissions factor if a manufacturer demonstrates the appropriateness of the lower value by providing information that includes, but is not limited to, the percentage of hydrogen fuel or the percentage of electricity produced for sale in California using a “renewable energy resource.”

2. *Calculation of Greenhouse Gas Values for Bi-Fuel Vehicles, Fuel-Flexible Vehicles, Dual-Fuel Vehicles, and Grid-connected Hybrid Electric Vehicles.* For bi-fuel, fuel-flexible, dual-fuel, and grid-connected hybrid electric vehicles, a manufacturer shall calculate a grams per mile average CO<sub>2</sub>-equivalent value for each GHG vehicle test group, in accordance with section 1961.1(a)(1)(B)1., based on exhaust mass emission tests when the vehicle is operating on gasoline.

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

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

ii. For each GHG vehicle test group that receives approval by the Executive Officer under section 1961.1(a)(1)(B)2.a.i., a grams per mile CO<sub>2</sub>-equivalent value shall be calculated as follows:

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

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

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

C = the CO<sub>2</sub>-equivalent value for the GHG vehicle test group, as calculated in section 1961.1(a)(1)(B)1, when tested using the alternative fuel;

D = the CO<sub>2</sub>-equivalent value for the GHG vehicle test group, as calculated in section 1961.1(a)(1)(B)1, when tested using gasoline; and

E = 0.9 for grid-connected hybrid electric vehicles or

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

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

iii. For the first model year in which a grid-connected hybrid electric vehicle model is certified for sale in California, the manufacturer may estimate the sales and percentage of total vehicle miles traveled information requested in section 1961.1(a)(1)(B)2.a.i. in lieu of providing actual data, and provide final sales data and data demonstrating the percentage of total vehicle miles traveled using electricity by no later than March 1 of the calendar year following the close of the model year.

3. *Calculation of Fleet Average Greenhouse Gas Values.*

a. Each manufacturer’s PC and LDT1 fleet average Greenhouse Gas value for the total number of PCs and LDT1s produced and delivered for sale in California, including vehicles certified in accordance with section 1960.5 and vehicles certified in accordance with section 1961(a)(14), shall be calculated as follows:

$$[0.55 \times (\Sigma \text{ City Test Group Greenhouse Gas Values}) + 0.45 \times (\Sigma \text{ Highway Test Group Greenhouse Gas Values})] \div \text{Total Number of PCs and LDT1s Produced, Including ZEVs and HEVs}$$

where: City Test Group Greenhouse Gas Value = [(Total Number of Vehicles in a Test Group -  $\Sigma$  Number of Vehicles in Optional GHG Test Vehicle Configurations) x “worst-case” calculated CO<sub>2</sub>-equivalent value +  $\Sigma$  (Number of vehicles in Optional GHG Test Vehicle Configurations x applicable calculated CO<sub>2</sub>-equivalent value)] measured using the FTP test cycle; and

Highway Test Group Greenhouse Gas Value = [(Total Number of Vehicles in a Test Group -  $\Sigma$  Number of Vehicles in Optional GHG Test Vehicle Configurations) x “worst-case” calculated CO<sub>2</sub>-equivalent value +  $\Sigma$  (Number of vehicles in Optional GHG Test Vehicle Configurations x applicable calculated CO<sub>2</sub>-equivalent value)] measured using the Highway Test Procedures.

b. Each manufacturer’s LDT2 and MDPV fleet average Greenhouse Gas value for the total number of LDT2s and MDPVs produced and delivered for sale in California, including vehicles certified in accordance with section 1960.5 and vehicles certified in accordance with section 1961(a)(14), shall be calculated as follows:

$$[0.55 \times (\Sigma \text{ City Test Group Greenhouse Gas Values}) + 0.45 \times (\Sigma \text{ Highway Test Group Greenhouse Gas Values})] \div \text{Total Number of LDT2s and MDPVs Produced, Including ZEVs and HEVs}$$

where: City Test Group Greenhouse Gas Value = [(Total Number of Vehicles in a Test Group -  $\Sigma$  Number of Vehicles in Optional GHG Test Vehicle Configurations) x “worst-case” calculated CO<sub>2</sub>-equivalent value +  $\Sigma$  (Number of vehicles in Optional GHG Test Vehicle Configurations x applicable calculated CO<sub>2</sub>-equivalent value)] measured using the FTP test cycle; and

Highway Test Group Greenhouse Gas Value = [(Total Number of Vehicles in a Test Group -  $\Sigma$  Number of Vehicles in Optional GHG Test Vehicle Configurations) x “worst-case” calculated CO<sub>2</sub>-equivalent value +  $\Sigma$  (Number of vehicles in Optional GHG Test Vehicle Configurations x applicable calculated CO<sub>2</sub>-equivalent value)] measured using the Highway Test Procedures.

(C) *Requirements for Intermediate Volume Manufacturers.*

1. Before the 2016 model year, compliance with this section 1961.1 shall be waived for intermediate volume manufacturers.

2. For each intermediate volume manufacturer, the manufacturer’s baseline fleet average greenhouse gas value for PCs and LDT1s and baseline fleet average greenhouse gas value for LDT2s and MDPVs shall be calculated, in accordance with section 1961.1(a)(1)(B) using its 2002 model year fleet.

3. In 2016 and subsequent model years, an intermediate volume manufacturer shall either:

a. not exceed a fleet average greenhouse gas emissions value of 233 g/mi for PCs and LDT1s and 361 g/mi for LDT2s and MDPVs, or

b. not exceed a fleet average greenhouse gas value of 0.75 times the baseline fleet average greenhouse gas value for PCs and LDT1s and 0.82 times the baseline fleet average greenhouse gas value for LDT2s and MDPVs, as calculated in section 1961.1(a)(1)(C)2.

4. If a manufacturer's average annual California sales exceed 60,000 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 no longer be treated as a intermediate volume manufacturer and shall comply with the fleet average requirements applicable to large volume manufacturers as specified in section 1961.1(a)(1) beginning with the fourth model year after the last of the three consecutive model years.

5. If a manufacturer’s average annual California sales fall below 60,001 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

intermediate volume manufacturer and shall be subject to the requirements for intermediate volume manufacturers beginning with the next model year.

(D) *Requirements for Small Volume Manufacturers and Independent Low Volume Manufacturers.*

1. Before the 2016 model year, compliance with this section 1961.1 shall be waived for small volume manufacturers and independent low volume manufacturers.

2. At the beginning of the 2013 model year, each small volume manufacturer and independent low volume manufacturer shall identify all 2012 model year vehicle models, certified by a large volume manufacturer that are comparable to that small volume manufacturer or independent low volume manufacturer's 2016 model year vehicle models, based on horsepower and horsepower to weight ratio. The small volume manufacturer and independent low volume manufacturer shall demonstrate to the Executive Officer the appropriateness of each comparable vehicle model selected. Upon approval of the Executive Officer, s/he shall provide to the small volume manufacturer and to the independent low volume manufacturer the CO<sub>2</sub>-equivalent value for each 2012 model year vehicle model that is approved. The small volume manufacturer and independent low volume manufacturer shall calculate an average greenhouse gas emissions value for each its greenhouse gas vehicle test groups based on the CO<sub>2</sub>-equivalent values provided by the Executive Officer.

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

a. not exceed the fleet average greenhouse gas emissions value calculated for each GHG vehicle test group for which a comparable vehicle is sold by a large volume manufacturer, in accordance with section 1961.1(a)(1)(D)2; or

b. not exceed a fleet average greenhouse gas emissions value of 233 g/mi for PCs and LDT1s and 361 g/mi for LDT2s and MDPVs; or

c. upon approval of the Executive Officer, if a small volume manufacturer demonstrates a vehicle model uses an engine, transmission, and emission control system that is identical to a configuration certified for sale in California by a large volume manufacturer, those small volume manufacturer vehicle models are exempt from meeting the requirements in paragraphs 3.a. and b. of this section.

4. If a manufacturer's average annual California sales exceed 4,500 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 no longer be treated as a small volume manufacturer and shall comply with the fleet average requirements applicable to larger volume manufacturers as specified in section 1961.1(a)(1) beginning with the fourth model year after the last of the three consecutive model years.

5. If a manufacturer's average annual California sales exceed 10,000 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 no longer be treated as an

independent low volume manufacturer and shall comply with the fleet average requirements applicable to larger volume manufacturers as specified in section 1961.1(a)(1) beginning with the fourth model year after the last of the three consecutive model years.

6. If a manufacturer's average annual California sales fall below 4,501 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.

(b) *Calculation of Greenhouse Gas Credits/Debits.*

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

(A) In the 2000 through 2008 model years, a manufacturer that achieves fleet average Greenhouse Gas values lower than the fleet average Greenhouse Gas requirement applicable to the 2012 model year shall receive credits for each model year in units of g/mi determined as:

$$\begin{aligned} &[(\text{Fleet Average Greenhouse Gas Requirement for the 2012 model year}) \\ &\quad - (\text{Manufacturer's Fleet Average Greenhouse Gas Value})] \\ &\quad \times (\text{Total No. of Vehicles Produced and Delivered for Sale} \\ &\quad \quad \text{in California, Including ZEVs and HEVs}). \end{aligned}$$

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

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

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

(3) *Procedure for Offsetting Greenhouse Gas Debits.*

(A) A manufacturer shall equalize Greenhouse Gas emission debits by earning g/mi Greenhouse Gas emission credits in an amount equal to the g/mi Greenhouse Gas debits, or

by submitting a commensurate amount of g/mi Greenhouse Gas credits to the Executive Officer that were earned previously or acquired from another manufacturer. A manufacturer shall equalize Greenhouse Gas debits for PCs, LDTs, and MDPVs within five model years after they are earned. If emission debits are not equalized within the specified time period, the manufacturer shall be subject to the Health and Safety Code section 43211 civil penalty applicable to a manufacturer which sells a new motor vehicle that does not meet the applicable emission standards adopted by the state board. The cause of action shall be deemed to accrue when the emission debits are not equalized by the end of the specified time period. For the purposes of Health and Safety Code section 43211, the number of passenger cars and LDT1s not meeting the state board's emission standards shall be determined by dividing the total amount of g/mi Greenhouse Gas emission debits for the model year by the g/mi Greenhouse Gas fleet average requirement for PCs and LDTs 0-3750 lbs. LVW applicable for the model year in which the debits were first incurred. For the purposes of Health and Safety Code section 43211, the number of LDT2s and MDPVs not meeting the state board's emission standards shall be determined by dividing the total amount of g/mi Greenhouse Gas emission debits for the model year by the g/mi Greenhouse Gas fleet average requirement for LDTs 3751 lbs. LVW – 8500 lbs. GVW and MDPVs applicable for the model year in which the debits were first incurred.

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

(c) *Test Procedures.* 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 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles,” incorporated by reference in section 1961(d). 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 2005 and Subsequent Model Zero-Emission Vehicles, and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes,” incorporated by reference in section 1962.

(d) *Abbreviations.* The following abbreviations are used in this section 1961.1:

“cc” mean cubic centimeters.  
"CH<sub>4</sub>" means methane.  
"CO<sub>2</sub>" means carbon dioxide.  
“E85” means a blend of 85 percent ethanol and 15 percent gasoline.  
“FTP” means Federal Test Procedure.  
"GHG" means greenhouse gas.  
“g/mi” means grams per mile.  
“GVW” means gross vehicle weight.  
“GVWR” means gross vehicle weight rating.  
“GWP” means the global warming potential.  
“HEV” means hybrid-electric vehicle.  
“LDT” means light-duty truck.  
“LDT1” means a light-duty 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.  
“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.  
“mg/mi” means milligrams per mile.  
“N<sub>2</sub>O” means nitrous oxide.  
“PC” means passenger car.  
“SULEV” means super-ultra-low-emission vehicle.  
“ULEV” means ultra-low-emission vehicle.  
“ZEV” means zero-emission vehicle.

(e) *Definitions Specific to this Section.* The following definitions apply to this section 1961.1:

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

(2) “A/C Indirect Emissions” means any increase in motor vehicle exhaust CO<sub>2</sub> emissions that can be attributed to the operation of the air conditioning system.

(3) “GHG Vehicle Test Group” means vehicles that have an identical test group, vehicle make and model, transmission class and driveline, aspiration method (e.g., naturally aspirated, turbocharged), camshaft configuration, valvetrain configuration, and inertia weight class.

(4) “Greenhouse Gas” means the following gases: carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons.

(5) “Grid-Connected Hybrid Electric Vehicle” means a hybrid electric vehicle that has the capacity for the battery to be recharged from an off-board source of electricity and has some all-electric range.

(6) “GWP” means the 100-year global warming potential specified in IPCC (Intergovernmental Panel on Climate Change) 2000: Emissions Scenarios. N. Nakicenovic et. al. editors, Special Report of Working Group III of the IPCC, Cambridge University Press, Cambridge UK, ISBN 0-521-80493-0.

(7) “Normal Operation” of an air conditioning system means typical everyday use of the A/C system to cool a vehicle. “Normal Operation” does not include car accidents, dismantling of an air conditioning system, or any other non-typical events.

(8) “Optional GHG Test Vehicle Configuration” means any GHG vehicle configuration that is selected for testing by the manufacturer as allowed by section G.2.3 of the “California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles,” other than the worst-case configuration.

(9) “Renewable Energy Resource” means a facility that meets all of the criteria set forth in Public Resources Code section 25741(a), except that the facility is not required to be located in California or near the border of California.

(10) “Variable Displacement Compressor” means a compressor in which the mass flow rate of refrigerant is adjusted independently of compressor speed by the control system in response to cooling load demand.

(11) “Variable Speed Compressor” means a compressor in which the mass flow rate of refrigerant can be adjusted by control of the compressor input shaft speed, independent of vehicle engine speed. For example, a variable speed compressor can have electric drive, hydraulic drive, or mechanical drive through a variable speed transmission.

(12) “Worst-Case” means the vehicle configuration within each test group that is expected to have the highest CO<sub>2</sub>-equivalent value, as calculated in section 1961.1(a)(1)(B)1.

(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 this article remains in full force and effect.

(g) *Effective Date of this Section.* The requirements of this section 1961.1 shall become effective on January 1, 2006.

Note: Authority cited: Sections 39500, 39600, 39601, 43013, 43018, 43018.5, 43101, 43104 and 43105, Health and Safety Code. Reference: Sections 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43018.5, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43204, 43205, and 43211, Health and Safety Code.