ALTERNATE 1 FINAL REGULATION ORDER


Set forth below are the final amendments to title 13 of the California Code of Regulations. The amendments are shown in underline to indicate additions and strikeout to indicate deletions. Some headings are shown in italics and should be italicized in Barclays California Code of Regulations.


(a) and (b) [No change.]


(a) [No change.]


(c)(1)(A) [No change.]

(B) The exhaust emissions from new 2005 and subsequent model heavy-duty Otto-cycle engines, except for Otto-cycle medium- and heavy-duty engines subject to the alternative standards in 40 CFR §86.005-10(f), shall not exceed:

<table>
<thead>
<tr>
<th>Model Year</th>
<th>Emission Category</th>
<th>NMHC + NOx</th>
<th>CO</th>
<th>HCHO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005 and subsequent</td>
<td>ULEV</td>
<td>1.0^c</td>
<td>14.4</td>
<td>0.05</td>
</tr>
<tr>
<td>2005 and subsequent</td>
<td>SULEV</td>
<td>0.5</td>
<td>7.2</td>
<td>0.025</td>
</tr>
</tbody>
</table>

California Emission Standards for 2005 and Subsequent Model Heavy-Duty Otto-Cycle Engines^A
(in g/bhp-hr)

As corrected November 3, 2003
Board Hearing: December 12, 2002
<table>
<thead>
<tr>
<th>Model Year</th>
<th>Emission Category</th>
<th>NMHC + NOx</th>
<th>NMHC</th>
<th>NOx</th>
<th>CO</th>
<th>HCHO</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standards for Heavy-Duty Otto-Cycle Engines Used In Incomplete Medium-Duty Vehicles 8,501 to 14,000 pounds GVW</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005 through 2007</td>
<td>ULEV</td>
<td>1.0&lt;sup&gt;C,E&lt;/sup&gt;</td>
<td>n/a</td>
<td>n/a</td>
<td>14.4</td>
<td>0.05</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>SULEV</td>
<td>0.5</td>
<td>n/a</td>
<td>n/a</td>
<td>7.2</td>
<td>0.025</td>
<td>n/a</td>
</tr>
<tr>
<td>2008 and subsequent</td>
<td>ULEV</td>
<td>n/a</td>
<td>0.14&lt;sup&gt;E&lt;/sup&gt;</td>
<td>0.20&lt;sup&gt;E&lt;/sup&gt;</td>
<td>14.4</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>SULEV</td>
<td>n/a</td>
<td>0.07&lt;sup&gt;E&lt;/sup&gt;</td>
<td>0.10&lt;sup&gt;E&lt;/sup&gt;</td>
<td>7.2</td>
<td>0.005</td>
<td>0.005</td>
</tr>
<tr>
<td><strong>Standards for Heavy-Duty Otto-Cycle Engines Used In Heavy-Duty Vehicles Over 14,000 pounds GVW</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005 through 2007</td>
<td></td>
<td></td>
<td>1.0&lt;sup&gt;C,E&lt;/sup&gt;</td>
<td>n/a</td>
<td>n/a</td>
<td>37.1</td>
<td>0.05&lt;sup&gt;D&lt;/sup&gt;</td>
</tr>
<tr>
<td>2008 and subsequent</td>
<td></td>
<td></td>
<td>n/a</td>
<td>0.14&lt;sup&gt;E&lt;/sup&gt;</td>
<td>0.20&lt;sup&gt;E&lt;/sup&gt;</td>
<td>14.4</td>
<td>0.01</td>
</tr>
</tbody>
</table>

A: These standards apply to petroleum-fueled, alcohol-fueled, liquefied petroleum gas-fueled and natural gas-fueled Otto-cycle engines.

B: A manufacturer of engines used in incomplete medium-duty vehicles may choose to comply with these standards as an alternative to the primary emission standards and test procedures for complete vehicles specified in section 1961, title 13, CCR. A manufacturer that chooses to comply with these optional heavy-duty engine standards and test procedures shall specify, in the Part I application for certification, an in-use compliance test procedure, as provided in section 2139(c), title 13 CCR.

C: A manufacturer may request to certify to the Option 1 or Option 2 federal NMHC + NOx standards as set forth in 40 CFR § 86.005-10(f), adopted October 6, 2000. However, for engines used in medium-duty vehicles 8,501 - 14,000 lbs. GVWR, the formaldehyde and carbon monoxide level standards must meet the standard levels specified above.

D: This standard only applies to methanol-fueled Otto-cycle engines.

E: A manufacturer may elect to include any or all of its medium- and heavy-duty Otto-cycle engine families in any or all of the emissions ABT programs for HDEs, within the restrictions described in section 1.15 of the “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines,” incorporated by reference in section 1956.8(d). For engine families certified to the Option 1 or 2 federal standards, the FEL must not exceed 1.5 g/bhp-hr. If a manufacturer elects to include engine families certified to the 2005 and subsequent model year standards, the NOx plus NMHC FEL must not exceed 1.0 g/bhp-hr. For engine families certified to the 2008 and subsequent model year standards, the FEL is the same as set forth in 40 CFR 86.008-10(a)(1).

F: Idle carbon monoxide: For all Otto-cycle heavy-duty engines utilizing aftertreatment technology, and not certified to the on-board diagnostics requirements of section 1968, et seq, as applicable, the CO emissions shall not exceed 0.50 percent of exhaust gas flow at curb idle.
(c)(2) [No change.]


Subsections (e) through (h)(2) footnote I. [No change.]

J Emissions averaging may be used to meet these standards for diesel engines, using the requirements for participation in averaging, banking and trading programs, as set forth in the “California Exhaust Emission Standards and Test Procedures for 1985 through 2004 and Subsequent Model Heavy-Duty Engines and Vehicles”, incorporated by reference in section 1956.8(b), above.

K Engines of 1998 and subsequent model years may be eligible to generate averaging, banking and trading credits based on these standards according to the requirements of the averaging, banking and trading programs described in the “California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent through 2003 Model Heavy-Duty Engines and Vehicles”; and the “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles,” incorporated by reference in section 1956.8(b), above.

Subsections (h)(2) footnote L through (h)(4). [No change.]


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.

Subsection (a)(1) through (3). [No change.]

(a)(4) 50°F Exhaust Emissions 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”.
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.

<table>
<thead>
<tr>
<th>Vehicle Weight Class</th>
<th>Vehicle Emission Category (g/mi)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LEV</td>
</tr>
<tr>
<td></td>
<td>NMOG</td>
</tr>
<tr>
<td>PCs; LDTs 0-8500 lbs. GVW</td>
<td>0.150</td>
</tr>
<tr>
<td>MDVs 8501-10,000 lbs. GVW</td>
<td>0.390</td>
</tr>
<tr>
<td>MDVs 10,001-14,000 lbs. GVW</td>
<td>0.460</td>
</tr>
</tbody>
</table>

Subsection (a)(5) through (7). [No change.]

(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 105,000 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 2003 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.”

Subsections (9) through (11). [No change.]

(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 SFTP test cycle 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.

Subsections (13) and (14). [No change.]

(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.**

Subsections (b)(1) through (b)(2). [No change.]

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

(A) [No change.]

(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 and subsequent model years, a small volume manufacturer shall certify, produce, and deliver for sale in California vehicles or engines certified to the MDV LEV 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.** [No change.]

Abbreviations. The following abbreviations are used in this section 1961:

“ALVW” means adjusted loaded vehicle weight.
“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.
“mg/mi” means milligrams per mile.
“NMHC” means non-methane hydrocarbons.
“Non-Methane Organic Gases” or “NMOG” means the total mass of oxygenated and non-oxygenated hydrocarbon emissions.
“NOx” means oxides of nitrogen.
“PC” means passenger car.
“SULEV” means super-ultra-low-emission vehicle.
“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.


In addition to all other requirements, emission control labels are required by the California certification procedures and smog index labels shall conform to contained in the “California Motor Vehicle Emission Control and Smog Index Label Specifications for 1978 through 2003 Model Year Motorcycles, Light-, Medium- And Heavy-Duty Engines And Vehicles,” adopted March 1, 1978, as last amended November 22, 2000. September 5, 2003, which is incorporated herein by reference, 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 §1961(d), the “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel-Engines and Vehicles,” incorporated by reference in §1956.8(b), the “California Interim Certification Procedures for 2004 and Subsequent Model Hybrid-Electric Vehicle Classes,” incorporated by reference in §1956.8(b) and (d), and the “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines,” incorporated by reference in §1956.8(d). Smog index labels for passenger cars and light-duty trucks shall conform to the “California Smog Index Label Specifications,” adopted September 5, 2003, which is incorporated herein by reference. Motorcycles shall meet the requirements of Title 40 Code of Federal Regulations section 86.413-78, as last amended October 28, 1977, which is incorporated herein by reference.


(a)(1) Vehicle refueling emissions for 1998 and subsequent model gasoline-fueled, alcohol-fueled, diesel-fueled, liquefied petroleum gas-fueled, fuel-flexible, and hybrid electric passenger cars, light-duty trucks, and medium-duty vehicles with a gross vehicle weight rating less than 8,501 pounds, shall not exceed the following standards. Gaseous Natural gas-fueled vehicles are exempt from meeting these refueling standards, but the refueling receptacles on natural gas-fueled vehicles must comply with the receptacle provisions of the American National Standards Institute/ American Gas Association Standard for Compressed Natural Gas Vehicle Fueling Connection Devices, ANSI/AGA NGV1 standard-1994, which is incorporated herein by reference. The standards apply equally to certification and in-use vehicles.

Hydrocarbons (for gasoline-fueled, diesel-fueled, and hybrid electric vehicles): 0.20 grams per gallon of fuel dispensed.

Organic Material Hydrocarbon Equivalent (for alcohol-fueled, fuel-flexible, and hybrid electric vehicles): 0.20 grams per gallon of fuel dispensed.

Hydrocarbons (for liquefied petroleum gas-fueled vehicles): 0.15 gram per gallon of fuel dispensed.

Subsections (a)(2) and (a)(3) [No change.]


§ 2065. Applicability of Chapter 2 to 2005 and Subsequent Model Year Heavy-Duty Engines and Vehicles

The requirements of chapter 2, division 3, title 13, California Code of Regulations apply to 2005 and subsequent model year heavy-duty engines and vehicles except as specifically modified by the provisions of the "California Exhaust Emission Standards and Test Procedures for 1985-2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles" adopted April 8, 1985 December 12, 2002, as last amended December 8, 2000, which are incorporated herein by reference.