

SUPPLEMENT TO THE FINAL REGULATION ORDER

**THE 2003 AMENDMENTS TO THE
CALIFORNIA ZERO EMISSION VEHICLE REGULATION**

Note: Set forth below are additional nonsubstantial amendments for the rulemaking adopting the 2003 amendments to the California zero emission vehicle (ZEV) regulation. The text of the additional amendments is shown in underline to indicate additions and ~~strikeout~~ to indicate deletions, compared to the preexisting regulatory language. The text of sections 1900(b)(19) and 1962(h), title 13, California Code of Regulations, also shows changes made by the amendments adopted December 19, 2003 in this rulemaking. Subsection headings shown in *italics* are to be italicized in Barclays California Code of Regulations. The symbols “* * * * *” means that intervening text not being amended has been omitted.

The underlying amendments in this rulemaking delay the start of the requirements for ZEVs from the 2003 model year to the 2005 model year in section 1962, title 13, California Code of Regulations. All of the additional amendments in this Supplement correct instances in other sections that make reference to the ZEV requirements for the 2003 and subsequent model years in section 1962; the additional amendments refer instead to the ZEV requirements for the 2005 and subsequent model years

1. Amend California Code of Regulations, title 13, section 1900(b)(18) and (19) to read as follows:

(18) “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; 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. 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 ~~2003~~ 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.

(19) “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 ~~2003~~ 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.

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

2. Amend California Code of Regulations, title 13, section 1960.1(k) to read as follows:

(k) The test procedures for determining compliance with these standards are set forth in "California Exhaust Emission Standards and Test Procedures for 1981 through 1987 Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," adopted by the state board on November 23, 1976, as last amended May 20, 1987, and in "California Exhaust Emission Standards and Test Procedures for 1988 through 2000 Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," adopted by the state board on May 20, 1987 as last amended August 5, 1999, both which are incorporated herein by reference, and in "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). The test procedures for determining the compliance of 2001 through 2006 model-year hybrid electric vehicles with the standards set forth in this section are set forth in "California Exhaust Emission Standards and Test Procedures for ~~2003~~ 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, as incorporated by reference in section 1962(h).

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NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43104, and 43105, Health and Safety Code. Reference: Sections 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43103, 43104, 43105, 43106, 43107, and 43204 - 43205.5, Health and Safety Code.

3. Amend California Code of Regulations, title 13, section 1961(a)(8)(B), and 1961(d), to read as follows:

(a) *Exhaust Emission Standards.*

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

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(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~~ 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.

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(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 September 5, 2003 and corrected February 20, 2004, 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 ~~2003~~ 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.

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

4. Amend California Code of Regulations, title 13, section 1962(h), to read as follows:

(h) *Test Procedures.* The certification requirements and test procedures for determining compliance with ~~the~~ this section 1962 are set forth in “California Exhaust Emission Standards and Test Procedures for ~~2003~~ 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,” adopted by the state board on August 5, 1999, and last amended ~~April 12, 2002~~ December 19, 2003, which is incorporated herein by reference.

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

5. Make corrections to the “California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles” as amended September 5, 2003, as follows:

California Environmental Protection Agency
AIR RESOURCES BOARD

**CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR
2001 AND SUBSEQUENT MODEL
PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY VEHICLES**

Adopted: August 5, 1999
Amended: December 27, 2000
Amended: July 30, 2002
Amended: September 5, 2003 (corrected February 20, 2004)

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

1. “California Exhaust Emission Standards and Test Procedures for ~~2003~~ 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, title 13, CCR);

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

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B. Definitions, Acronyms and Abbreviations

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2. California Definitions.

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“**All-Electric Range Test**” means a test sequence used to determine the range of an electric or hybrid electric vehicle without the use of its auxiliary power unit. The All-Electric Range Test is described in the “California Exhaust Emission Standards and Test Procedures for ~~2003~~ 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,” as incorporated by reference in section 1962(e), title 13, CCR.

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“**Zero-emission vehicle**” or “**ZEV**” means any vehicle certified to the zero-emission standards set forth in the “California Exhaust Emission Standards and Test Procedures for ~~2003~~ 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,” as incorporated by reference in section 1962, title 13, CCR.

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E. California Exhaust Emission Standards.

Delete 40 CFR §§86.1811 through 86.1819.

Introduction. The following Section E. contains the exhaust emission standards, phase-in requirements and reactivity adjustment factors applicable to California passenger cars, light-duty trucks and medium-duty vehicles. A manufacturer must demonstrate compliance with the exhaust standards applicable to specific test groups, and with the composite phase-in requirements applicable to the manufacturer's entire fleet.

A manufacturer has the option of certifying engines used in incomplete and diesel MDVs with a gross vehicle weight rating of greater than 8,500 lbs. to the heavy-duty engine standards and test procedures set forth in sections 1956.8(g) and (h), title 13, CCR, except when the federal vehicle is chassis-certified. If a federal vehicle with a gross vehicle weight rating of greater than 8,500 lbs. is certified to chassis standards, then the equivalent California vehicle must either be certified to the exhaust emission standards applicable to medium-duty vehicles as set forth in section 1961, title 13, CCR or to the federal Tier 2 standards, as per the requirements of section H.1.4 of these test procedures.

The procedures for meeting the ZEV phase-in requirements and for earning ZEV credits are contained in the "California Exhaust Emission Standards and Test Procedures for ~~2003~~ 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," as incorporated by reference in section 1962, title 13, CCR.

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

(a) Requirement to Generate Additional NMOG Fleet Average Credit. A vehicle that is certified to the 150,000 mile standards in section E.1.1.2 shall generate additional NMOG fleet average credit as set forth in section E.3.1 or additional vehicle equivalent credits as set forth in E.3.2, provided that the manufacturer extends the warranty on high-priced 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 manufacturer that certifies to the 150,000 mile SULEV standards shall also generate a partial ZEV allocation according to the criteria set forth in section C.3 of the "California Exhaust Emission Standards and Test Procedures for ~~2003~~ 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," as incorporated by reference in section 1962, title 13, CCR.

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1.13 **Emission Standard for Fuel-Fired Heaters.** Whenever a manufacturer elects to utilize an on-board fuel-fired heater on any passenger car, light-duty truck or medium-duty vehicle, the heater must meet the LEV II ULEV standards for passenger cars and light-duty trucks less than 8,500 pounds GVW set forth in Section E.1.1.2 of these test procedures. The exhaust emissions from the fuel-fired heater shall be determined in accordance with the “California Exhaust Emission Standards and Test Procedures for ~~2003~~ 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.” On-board fuel-fired heaters may not be operable at ambient temperatures above 40°F.

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2.1.2.2 **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 C.3 of the “California Exhaust Emission Standards and Test Procedures for ~~2003~~ 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,” as incorporated by reference in section 1962, title 13, CCR.

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2.1.5 **Treatment of ZEVs.** ZEVs classified as LDTs (>3750 lbs. LVW) that have been counted toward the ZEV requirement for PCs and LDTs (0-3750 lbs. LVW) as specified in Section C of the “California Exhaust Emission Standards and Test Procedures for ~~2003~~ 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,” as incorporated by reference in section 1962, title 13, CCR, shall be included in this equation.

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3.2.1 The MDV HEV VEC allowance is calculated as follows:

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

where “Zero-emission VMT Allowance” for an HEV is determined in accordance with Section C.3 of the “California Exhaust Emission Standards and Test Procedures for ~~2003~~ 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, as incorporated in section 1962, title 13, CCR.”

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G. Procedures for Demonstration of Compliance with Emission Standards

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8.2 HEVs.

(a) The manufacturer shall equip the vehicle with a maintenance indicator consisting of a light that shall activate automatically by illuminating the first time the minimum performance level is observed for all battery system components. Possible battery system components requiring monitoring are: (i) battery water level; (ii) temperature control; (iii) pressure control; and (iv) other parameters critical for determining battery condition.

(b) The manufacturer shall equip “off-vehicle charge capable HEVs” with a useful life indicator for the battery system consisting of a light that shall illuminate the first time the battery system is unable to achieve an all-electric operating range (starting from a full state-of-charge) which is at least 75% of the range determined for the vehicle in the Urban Driving Schedule portion of the All-Electric Range Test (see the “California Exhaust Emission Standards and Test Procedures for ~~2003~~ 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,” as incorporated by reference in section 1962, title 13, CCR).

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H. Certification, Information and Reporting Requirements.

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4.3 HEVs.

For HEVs, the information required in the “California Exhaust Emission Standards and Test Procedures for ~~2003~~ 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,” as incorporated by reference in section 1962, title 13, CCR, must be supplied with the Part I application for certification.

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