

## Attachment J to Resolution 12-35

Staff's Suggested Changes to the Original Proposal

PRESENTED AT THE NOVEMBER 15, 2012 HEARING OF THE AIR  
RESOURCES BOARD

The following text contains staff's suggested modifications to the originally proposed regulatory text for sections 1900, 1956.8, 1960.1, 1961.3, and 1976, title 13 of the California Code of Regulations; to the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles;" to the "California 2001 through 2014 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2009 through 2016 Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles;" to the "California Exhaust Emission Standards and Test Procedures for 2009 through 2017 Model Zero-Emission Vehicles and Hybrid Electric Vehicles in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes;" and to the "California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes." Unless otherwise indicated below, the text of the originally proposed amendments is shown in underline to indicate additions and ~~strikeout~~ to indicate deletions. The modified language now proposed by staff is shown in double underline to indicate additions and ~~double strikeout~~ to indicate deletions. Staff is proposing modifications to limited portions of the original proposal; for some portions of the original proposal for which no modifications are proposed, the text has been omitted and the omission indicated by [No change] or "\* \* \* \*."

There are no additional suggested modifications to the originally proposed amendments to sections 1900, 1956.8, 1960.1, 1961.3, and 1976, title 13, CCR.

**SUGGESTED CHANGES TO PROPOSED REGULATION ORDER**

1. Amend title 13, CCR, section 1961 to read as follows:

**§ 1961. Exhaust Emission Standards and Test Procedures - 2004 through 2019 Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.**

\* \* \* \*

(a) *Exhaust Emission Standards.*

(1) *“LEV II” Exhaust Standards.* The following standards are the maximum exhaust emissions for the intermediate and full useful life from new 2004 through 2019 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. 2015 – 2019 model-year LEV II LEV vehicles may be certified to the 150,000 mile NMOG+NOx emission standards numerical values for LEV160, LEV395, or LEV630, as applicable, in subsection 1961.2(a)(1) and the corresponding NMOG+NOx numerical values in subsection 1961.2(a)(4), in lieu of the separate NMOG and NOx exhaust emission standards in this subsection (a)(1) and subsection (a)(4); and LEV II ULEV vehicles may be certified to the 150,000 mile NMOG+NOx emission standards numerical values for ULEV125, ULEV340, or ULEV570, as applicable, in subsection 1961.2(a)(1) and the corresponding NMOG+NOx numerical values in subsection 1961.2(a)(4), in lieu of the separate NMOG and NOx exhaust emission standards in this subsection (a)(1) and the corresponding NMOG+NOx numerical values in subsection (a)(4); and LEV II SULEV vehicles may be certified to the NMOG+NOx numerical values for SULEV30, SULEV170, or SULEV230, as applicable, in subsection 1961.2(a)(1) and the corresponding NMOG+NOx numerical values in subsection 1961.2(a)(4), in lieu of the separate NMOG and NOx exhaust emission standards in this subsection (a)(1) and the corresponding NMOG+NOx numerical values in subsection (a)(4) 2015 – 2019 model-year LEV II SULEV vehicles that receive a partial ZEV allowance in accordance with the “California Exhaust Emission Standards and Test Procedures for 2009 through 2017 Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes” and 2015 – 2016 model year vehicles that are allowed to certify to LEV II SULEV standards using “carryover” of emission test data under the provisions in subsection 1961.2(b)(2) may be certified to the 150,000 mile NMOG+NOx emission standards for SULEV30, SULEV170, or SULEV230, as applicable, in subsection 1961.2(a)(1) and the corresponding NMOG+NOx numerical values in subsection 1961.2(a)(4), in lieu of the separate NMOG and NOx exhaust emission standards in this subsection (a)(1) and the corresponding NMOG numerical values in subsection (a)(4). LEV II SULEV vehicles that do not either (1) receive a partial ZEV allowance or (2) certify to LEV II SULEV standards in the 2015 – 2016 model years using “carryover” of emission test data may not certify to combined NMOG+NOx standards.

\* \* \* \*

2. Amend title 13, CCR, section 1961.2 to read as follows:

**§ 1961.2. Exhaust Emission Standards and Test Procedures - 2015 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.**

\* \* \* \*

(a) *Exhaust Emission Standards.*

(1) *“LEV III” Exhaust Standards.* The following standards are the maximum exhaust emissions for the full useful life from new 2015 and subsequent model year “LEV III” passenger cars, light-duty trucks, and medium-duty vehicles, including fuel-flexible, bi-fuel and dual-fuel vehicles when operating on the gaseous or alcohol fuel they are designed to use. 2015 – 2019 model-year LEV II LEV vehicles may be certified to the 150,000 mile NMOG+NOx emission standards numerical values for LEV160, LEV395, or LEV630, as applicable, in this subsection (a)(1) and the corresponding NMOG+NOx numerical values in subsection (a)(4), in lieu of the separate NMOG and NOx exhaust emission standards in subsections 1961(a)(1) and the corresponding NMOG numerical values in subsection 1961(a)(4); and LEV II ULEV vehicles may be certified to the 150,000 mile NMOG+NOx emission standards numerical values for ULEV125, ULEV340, or ULEV570, as applicable, in this subsection (a)(1) and the corresponding NMOG+NOx numerical values in subsection (a)(4), in lieu of the separate NMOG and NOx exhaust emission standards in subsections 1961(a)(1) and the corresponding NMOG numerical values in subsection 1961(a)(4); and LEV II SULEV vehicles may be certified to the NMOG+NOx numerical values for SULEV30, SULEV170, or SULEV230, as applicable, in subsection (a)(1) and the corresponding NMOG+NOx numerical values in subsection (a)(4), in lieu of the separate NMOG and NOx exhaust emission standards in subsections 1961(a)(1) and 1961(a)(4). 2015 – 2019 model-year LEV II SULEV vehicles that receive a partial ZEV allowance in accordance with the “California Exhaust Emission Standards and Test Procedures for 2009 through 2017 Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes” and 2015 – 2016 model year vehicles that are allowed to certify to LEV II SULEV standards using “carryover” of emission test data under the provisions in subsection (b)(2) may be certified to the 150,000 mile NMOG+NOx emission standards for SULEV30, SULEV170, or SULEV230, as applicable, in this subsection (a)(1) and the corresponding NMOG+NOx numerical values in subsection (a)(4), in lieu of the separate NMOG and NOx exhaust emission standards in subsection 1961(a)(1) and the corresponding NMOG numerical values in subsection 1961(a)(4). LEV II SULEV vehicles that do not either (1) receive a partial ZEV allowance or (2) certify to LEV II SULEV standards in the 2015 – 2016 model years using “carryover” of emission test data may not certify to combined NMOG+NOx standards. ~~Such LEV II vehicles that certify to combined NMOG+NOx standards~~ will be treated as LEV II vehicles for purposes of the fleet-wide phase-in requirements.

\* \* \* \*

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

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

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

\* \* \* \*

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

\* \* \* \*

(c) *Calculation of NMOG + NOx Credits/Debits*

\* \* \* \*

(3) *Procedure for Offsetting Debits.*

\* \* \* \*

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

\* \* \* \*

3. Amend title 13, CCR, section 1962.1 to read as follows:

**§ 1962.1. Zero-Emission Vehicle Standards for 2009 through 2017 Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.**

\* \* \* \* \*

**(c) Partial ZEV Allowance Vehicles (PZEVs).**

\* \* \* \* \*

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

**(A) Calculation of Zero-Emission VMT Allowance.** A vehicle that meets the requirements of subdivision 1962.1(c)(2) and has zero-emission vehicle miles traveled (“VMT”) capability will generate an additional zero-emission VMT PZEV allowance calculated as follows:

<i>Range</i>	<i>Zero-emission VMT Allowance</i>
$EAER_u < 10$ miles	0.0
$EAER_u \geq 10$ to 40 miles	$EAER_u \times (1 - UF_{R_{cda}})/11.028$
$EAER_u > 40$ miles	$\frac{(EAER_{u40}) \times [1 - (UF_{40} \times R_{cda} / EAER_u)]}{11.028}$ $+ 3.627 \times (1 - UF_n)$ <p>Where,  <math>UF_{40}</math> = utility factor at 40 miles  <math>EAER_{u40}</math> = 40 miles  <math>n = 40 \times (R_{cda} / EAER_u)</math></p>

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

The urban equivalent all-electric range ( $EAER_u$ ) and urban charge depletion range actual ( $R_{cda}$ ) shall be determined in accordance with section G.5-411.4 and G.11.9, respectively, of these of the “California Exhaust Emission Standards and Test Procedures for 2009 through 2017 Model Zero-Emission Vehicles, and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium Duty Vehicle Classes,” adopted December 17, 2008, and last amended March 22, 2012 [INSERT DATE OF AMENDMENT], incorporated by reference in section 1962.1(h). The utility Factor (UF) shall be determined according to SAE J2841 SEP2010 from the Fleet Utility Factors (FUF) Table in Appendix B or using a polynomial curve fit with “FUF Fit” coefficients

from Table 2 Utility Factor Equation Coefficients based on the charge-depleting actual range (urban cycle) ( $R_{cda}$ ) shall be determined according to Section 4.5.2 Equation 6 and the "Fleet UF" Utility Factor Equation Coefficients in Section 4.5.2, Table 3 of SAE J2841 March 2009.

\* \* \* \* \*

4. Amend title 13, CCR, section 1962.2 to read as follows:

**§ 1962.2. Zero-Emission Vehicle Standards for 2018 and Subsequent Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.**

\* \* \* \* \*

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

\* \* \* \* \*

**(3) Allowances for TZEVs**

**(A) Zero-Emission Vehicle Miles Traveled TZEV Allowance Calculation.**

A vehicle that meets the requirements of subdivision 1962.2(c)(2) and has zero-emission vehicle miles traveled (VMT), as defined by and calculated by the "California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes," adopted March 22, 2012, which is incorporated herein by reference, and measured as equivalent all electric range (EAER) capability will generate an allowance according to the following equation:

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

\* \* \* \* \*

**1. Allowance for US06 Capability.** TZEVs with US06 all electric range capability (AER) of at least 10 miles shall earn an additional 0.2 allowance. US06 test cycle range capability shall be determined in accordance with section ~~EE-8G.7.5~~ of the "California Exhaust Emission Standards and Test Procedures for the 2018 and Subsequent Model Zero-Emission Vehicles, and Hybrid Electric Vehicles in the Passenger Car, Light-Duty Truck, and Medium Duty Vehicle Classes," adopted March

22, 2012, last amended [INSERT DATE OF AMENDMENT], which is incorporated herein by reference.

\* \* \* \* \*

California Environmental Protection Agency  
AIR RESOURCES BOARD

**PROPOSED 15-DAY MODIFICATIONS**

**CALIFORNIA 2015 AND SUBSEQUENT MODEL CRITERIA POLLUTANT EXHAUST  
EMISSION STANDARDS AND TEST PROCEDURES AND 2017 AND SUBSEQUENT  
MODEL GREENHOUSE GAS EXHAUST EMISSION STANDARDS AND TEST  
PROCEDURES FOR PASSENGER CARS, LIGHT-DUTY TRUCKS, AND  
MEDIUM-DUTY VEHICLES**

Adopted: March 22, 2012

Amended: [INSERT DATE OF AMENDMENT]

Note: The following text contains staff's suggested modifications to these test procedures as originally proposed September 14, 2012. Unless otherwise indicated below, the text of the originally proposed amendments to this document are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions compared to the test procedures as adopted March 22, 2012. The modified language now proposed by staff is shown in double underline to indicate additions and ~~double strikeout~~ to indicate deletions. Staff is proposing modifications to limited portions of the original proposal; for some portions of the original proposal for which no modifications are proposed, the text has been omitted and the omission indicated by [No change] or "\* \* \* \*". [No change] also indicates proposed federal provisions that are also proposed for incorporation herein without change. Existing intervening text that is not amended in this rulemaking is indicated by "\* \* \* \*".

\* \* \* \*

**CALIFORNIA 2015 AND SUBSEQUENT MODEL CRITERIA POLLUTANT EXHAUST  
EMISSION STANDARDS AND TEST PROCEDURES AND 2017 AND SUBSEQUENT  
MODEL GREENHOUSE GAS EXHAUST EMISSION STANDARDS AND TEST  
PROCEDURES FOR  
PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY VEHICLES**

\* \* \* \*

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

**A. General Applicability**

**1. §86.1801 Applicability.**

1.1 §86.1801-12. ~~As adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date], October 15, 2012~~Insert Federal Register for the 2017 and subsequent MY National Greenhouse Gas Final Rule as proposed at 76 Fed. Reg. 74854, 75361 (December 1, 2011)]. Amend as follows:

\* \* \* \*

**B. Definitions, Acronyms and Abbreviations**

**1. §86.1803 Definitions.**

1.1 §86.1803-01. ~~As adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date], October 15, 2012~~Insert Federal Register for the 2017 and subsequent MY National Greenhouse Gas Final Rule as proposed at 76 Fed. Reg. 74854, 75361 (December 1, 2011)]. [No change, except as otherwise noted below.]

**2. California Definitions.**

\* \* \* \*

**“Subconfiguration”** means a unique combination within a vehicle configuration that meets the criteria in 40 CFR §600.002-08 (May 7, 2010 October 15, 2012).

\* \* \* \*

**D. §86.1810 General standards; increase in emissions; unsafe conditions; waivers**

1. §86.1810-09. July 6, 2011 ~~as adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date], October 15, 2012~~Insert Federal Register for the 2017 and subsequent MY National Greenhouse Gas Final Rule as proposed at 76 Fed. Reg. 74854, 75371 (December 1, 2011)]. Amend §86.1810-09 as follows:

\* \* \* \*

**E. California Exhaust Emission Standards.**

\* \* \* \*

**1. Exhaust Emission Standards.**

**1.1 FTP Exhaust Emission Standards for Light- and Medium-Duty Vehicles.**

The exhaust emission standards set forth in this section refer to the exhaust emitted over the driving schedule set forth in title 40, CFR Part 86, Subparts B and C, except as amended in these test procedures.

1.1.1 **LEV II Exhaust Standards.** The following LEV II standards are the maximum exhaust emissions for the intermediate and full useful life from new 2015 through 2019 model year 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, except that for the 2015 through 2019 model years, SULEV exhaust standards shall only apply to vehicles that receive partial zero-emission vehicle credits according to the criteria set forth in section C.3 of the “California Exhaust Emission Standards and Test Procedures for 2009 through 2017 Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes” or the “California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes,” incorporated by reference in section 1962.2, title 13, CCR. Vehicles that are certified to the particulate standards in section E.1.1.2.1 may not certify to LEV II standards.

2015 – 2019 model-year LEV II LEV vehicles may be certified to the 150,000 mile NMOG+NOx emission standards numerical values for LEV160, LEV395, or LEV630, as applicable, in section E.1.1.2 and the corresponding NMOG+NOx numerical values in section E.1.4.2, in lieu of the separate NMOG and NOx exhaust emission standards in this section E.1.1.1 and the corresponding NMOG+NOx numerical values in section E.1.4.1; and LEV II ULEV vehicles may be certified to the 150,000 mile NMOG+NOx emission standards numerical values for ULEV125, ULEV340, or ULEV570, as applicable, in section E.1.1.2 and the corresponding NMOG+NOx numerical values in section E.1.4.2, in lieu of the separate NMOG and NOx exhaust emission standards in this section E.1.1.1 and the corresponding NMOG+NOx numerical values in section E.1.4.1; and LEV II SULEV vehicles may be certified to the NMOG+NOx numerical values for SULEV30, SULEV170, or SULEV230, as applicable, in section E.1.1.2 and the corresponding NMOG+NOx numerical values in section E.1.4.2, in lieu of the separate NMOG and NOx exhaust emission standards in this section E.1.1.1 and the corresponding NMOG+NOx numerical values in

section E.1.4.1 2015 – 2019 model-year LEV II SULEV vehicles that receive a partial ZEV allowance in accordance with the “California Exhaust Emission Standards and Test Procedures for 2009 through 2017 Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes” and 2015 – 2016 model year vehicles that are allowed to certify to LEV II SULEV standards using “carryover” of emission test data under the provisions in section E.2.2 may be certified to the 150,000 mile NMOG+NOx emission standards for SULEV30, SULEV170, or SULEV230, as applicable, in section E.1.1.2 and the corresponding NMOG+NOx numerical values in section E.1.4.2, in lieu of the separate NMOG and NOx exhaust emission standards in this section E.1.1.1 and the corresponding NMOG numerical values in section E.1.4.1. LEV II SULEV vehicles that do not either (1) receive a partial ZEV allowance or (2) certify to LEV II SULEV standards in the 2015 – 2016 model years using “carryover” of emission test data may not certify to combined NMOG+NOx standards. ~~Such~~ LEV II vehicles that certify to combined NMOG+NOx standards will be treated as LEV II vehicles for purposes of the fleet-wide phase-in requirements.

\* \* \* \*

## **2. Emission Standards Phase-In Requirements for Manufacturers.**

### **2.1 Fleet Average NMOG + NOx Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles.**

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

\* \* \* \*

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

\* \* \* \*

**2.5 Greenhouse Gas Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles.**

\* \* \* \*

2.5.3 *Alternative Fleet Average Standards for Manufacturers with Limited U.S. Sales.* Manufacturers meeting the criteria in this section E.2.5.3 may request that the Executive Officer establish alternative fleet average CO<sub>2</sub> standards that would apply instead of the standards in section E.2.5.1. The provisions of this section E.2.5.3 are applicable only to the 2017 and subsequent model years.

\* \* \* \*

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

\* \* \* \*

2.5.3.3.4. A manufacturer may elect to petition for alternative standards under this section E. 2.5.3.3 by submitting to ARB a copy of the data and information submitted to EPA as required under 40 CFR §86.1818-12 (g) (as adopted by the U.S. Environmental Protection Agency on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date], October 15, 2012), as incorporated by reference, herein, and the EPA approval of the manufacturer’s request for alternative fleet average standards for the 2017 through 2025 MY National Greenhouse Gas Program.

\* \* \* \*

**3. Calculation of Credits/Debits**

**3.1 Calculation of NMOG+NOx Credits/Debits**

\* \* \* \*

**3.1.3 Procedure for Offsetting NMOG+NOx Debits.**

\* \* \* \*

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

\* \* \* \*

**F. Requirements and Procedures for Durability Demonstration**

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**4. §86.1823 Durability demonstration procedures for exhaust emissions.**

\* \* \* \*

4.2 §86.1823-08. ~~As adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date],~~ October 15, 2012Insert Federal Register for the 2017 and subsequent MY National Greenhouse Gas Final Rule as proposed at 76 Fed. Reg. 74854, 75371 (December 1, 2011)]. [No change, except that subparagraph (m) applies only to vehicles certifying to the 2012 through 2016 MY National greenhouse gas program.]

\* \* \* \*

**G. Procedures for Demonstration of Compliance with Emission Standards**

\* \* \* \*

**3. §86.1829 Durability data and emission data testing requirements; waivers.**

\* \* \* \*

3.1 §86.1829-01. ~~May 7, 2010 [as adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date],~~ October 15, 2012Insert Federal Register for the 2017 and subsequent MY National Greenhouse Gas Final Rule as proposed at 76 Fed. Reg. 74854, 75371 (December 1, 2011)]. Amend as follows:

\* \* \* \*

**11. §86.1837 Rounding of emission measurements.**

\* \* \* \*

11.2 Fleet average NMOG+NO<sub>x</sub> value calculations shall be rounded, in accordance with ASTM E29-67, to four significant figures before comparing with fleet average NMOG+NO<sub>x</sub> requirements.

\* \* \* \*

**J. Procedural Requirements**

\* \* \* \*

1. §86.1848-10 Certification. ~~July 6, 2011 [as adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date],~~ October 15, 2012Insert Federal Register for the

~~2017 and subsequent MY National Greenhouse Gas Final Rule as proposed at 76 Fed. Reg. 74854, 75371 (December 1, 2011)~~. [No change.]

\* \* \* \*

13. §86.1865-12 How to comply with the fleet average CO<sub>2</sub> standards. ~~as adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date], October 15, 2012~~Insert Federal Register for the 2017 and subsequent MY National Greenhouse Gas Final Rule as proposed at 76 Fed. Reg. 74854, 75371 (December 1, 2011). [No change, except that this section shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program.]
14. §86.1866-12 CO<sub>2</sub> fleet average credits for advanced technology vehicles programs. ~~as adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date], October 15, 2012~~Insert Federal Register for the 2017 and subsequent MY National Greenhouse Gas Final Rule as proposed at 76 Fed. Reg. 74854, 75372 (December 1, 2011). [No change, except that for the 2012 through 2016 model years this section shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program.]
15. §86.1867-12 Optional early CO<sub>2</sub> credit programs. ~~as adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date], October 15, 2012~~Insert Federal Register for the 2017 and subsequent MY National Greenhouse Gas Final Rule as proposed at 76 Fed. Reg. 74854, 75387 (December 1, 2011). [No change, except that this section shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program.]

**PART II: CALIFORNIA EXHAUST AND PARTICULATE EMISSION TEST PROCEDURES FOR PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES**

This part describes the equipment required and the procedures necessary to perform gaseous and particulate exhaust emission tests (40 CFR Part 86, Subpart B); cold temperature test procedures (40 CFR Part 86, Subpart C); the California 50°F test procedure; and the supplemental federal test procedure (40 CFR Part 86, Subpart B) on passenger cars, light-duty trucks and medium-duty vehicles.

**A. 40 CFR Part 86, Subpart B - Emission Regulations for 1977 and Later Model Year New Light-Duty Vehicles and New Light-Duty Trucks and New Otto-Cycle Complete Heavy-Duty Vehicles; Test Procedures.**

\* \* \* \*

**100.2 Equipment and Facility Requirements.**

\* \* \* \*

86.111-94 Exhaust gas analytical-system. ~~was adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date], October 15, 2012~~Insert Federal Register for the 2017 and subsequent MY National Greenhouse Gas Final Rule as proposed at 76 Fed. Reg. 74854, 75357 (December 1, 2011)}. [No change.]

\* \* \* \*

### 100.5 Test Procedures and Data Requirements.

\* \* \* \*

86.135-12 Dynamometer procedure. ~~was adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date], October 15, 2012~~Insert Federal Register for the 2017 and subsequent MY National Greenhouse Gas Final Rule as proposed at 76 Fed. Reg. 74854, 75357 (December 1, 2011)}. [No change.]

\* \* \* \*

86.165-12 Air Conditioning idle test procedure. ~~was adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date], October 15, 2012~~Insert Federal Register for the 2017 and subsequent MY National Greenhouse Gas Final Rule as proposed at 76 Fed. Reg. 74854, 75357 (December 1, 2011)}. [No change, except that for the 2016 model years, this section shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program.]

\* \* \* \*

86.167-17 AC17 Air Conditioning Efficiency Emissions Test Procedure. ~~was adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date], October 15, 2012~~Insert Federal Register for the 2017 and subsequent MY National Greenhouse Gas Final Rule as proposed at 76 Fed. Reg. 74854, 75358 (December 1, 2011)}. [No change, except that for the 2012 through 2016 model years, this section shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program.]

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California Environmental Protection Agency  
AIR RESOURCES BOARD

**PROPOSED 15-DAY MODIFICATIONS**

**CALIFORNIA 2001 THROUGH 2014 MODEL CRITERIA POLLUTANT EXHAUST  
EMISSION STANDARDS AND TEST PROCEDURES AND 2009 THROUGH 2016  
MODEL GREENHOUSE GAS EXHAUST EMISSION STANDARDS AND TEST  
PROCEDURES FOR  
PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY VEHICLES**

Adopted: August 5, 1999  
Amended: December 27, 2000  
Amended: July 30, 2002  
Amended: September 5, 2003 (corrected February 20, 2004)  
Amended: May 28, 2004  
Amended: August 4, 2005  
Amended: June 22, 2006  
Amended: October 17, 2007  
Amended: May 2, 2008  
Amended: December 2, 2009  
Amended: February 22, 2010  
Amended: March 29, 2010  
Amended: September 27, 2010  
Amended: March 22, 2012  
Amended: [INSERT DATE OF AMENDMENT]

Note: The following text contains staff's suggested modifications to these test procedures as originally proposed September 14, 2012. Unless otherwise indicated below, the text of the originally proposed amendments to this document are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions compared to the test procedures as adopted March 22, 2012. The modified language now proposed by staff is shown in double underline to indicate additions and ~~double strikeout~~ to indicate deletions. Staff is proposing modifications to limited portions of the original proposal; for some portions of the original proposal for which no modifications are proposed, the text has been omitted and the omission indicated by [No change] or “\* \* \* \*.” [No change] also indicates proposed federal provisions that are also proposed for incorporation herein without change. Existing intervening text that is not amended in this rulemaking is indicated by “\* \* \* \*”.

\* \* \* \*

**CALIFORNIA 2001 THROUGH 2014 MODEL CRITERIA POLLUTANT EXHAUST EMISSION STANDARDS AND TEST PROCEDURES AND 2009 THROUGH 2016 MODEL GREENHOUSE GAS EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES**

\* \* \* \*

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

\* \* \* \*

**F. Requirements and Procedures for Durability Demonstration**

\* \* \* \*

**4. §86.1823 Durability demonstration procedures for exhaust emissions.**

\* \* \* \*

4.2 §86.1823-08. ~~September 15, 2011 [as adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date]]~~ October 15, 2012. [No change, except that subparagraph (m) applies only to vehicles certifying to the 2012 through 2016 MY National greenhouse gas program.]

\* \* \* \*

**G. Procedures for Demonstration of Compliance with Emission Standards**

\* \* \* \*

**3. §86.1829 Durability data and emission data testing requirements; waivers.**

\* \* \* \*

3.1 §86.1829-01. ~~May 7, 2010 [as adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date]]~~ October 15, 2012. Amend as follows:

\* \* \* \*

**J. Procedural Requirements**

\* \* \* \*

3. §86.1848-10 Certification. ~~July 6, 2011 [as adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date],~~ October 15, 2012. [No change, except that this version of §86.1848-10 shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program.]

\* \* \* \*

15. §86.1865-12 How to comply with the fleet average CO<sub>2</sub> standards. ~~September 15, 2011 [as adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date],~~ October 15, 2012. [No change, except that this section shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program.]
16. §86.1866-12 CO<sub>2</sub> fleet average credits for advanced technology vehicles programs. ~~July 6, 2011 [as adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date],~~ October 15, 2012. [No change, except that for the 2012 through 2016 model years this section shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program.]
17. §86.1867-12 Optional early CO<sub>2</sub> credit programs. ~~July 6, 2011 [as adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date],~~ October 15, 2012. [No change, except that this section shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program.]

**PART II: CALIFORNIA EXHAUST AND PARTICULATE EMISSION TEST PROCEDURES FOR PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES**

\* \* \* \*

**A. 40 CFR Part 86, Subpart B - Emission Regulations for 1977 and Later Model Year New Light-Duty Vehicles and New Light-Duty Trucks and New Otto-Cycle Complete Heavy-Duty Vehicles; Test Procedures.**

\* \* \* \*

**100.2 Equipment and Facility Requirements.**

\* \* \* \*

- 86.111-94 Exhaust gas analytical-system. ~~May 7, 2010 [as adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date],~~ October 15, 2012. [No change.]

\* \* \* \*

**100.5 Test Procedures and Data Requirements.**

\* \* \* \*

86.135-12 Dynamometer procedure. ~~May 7, 2010 [as adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date]]~~ October 15, 2012. [No change.]

\* \* \* \*

86.165-12 Air Conditioning idle test procedure. ~~July 6, 2011 [as adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date],~~ October 15, 2012. [No change, except that this section shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program.]

\* \* \* \*

~~86.167-17 AC17 Air Conditioning Emissions Test Procedure. [as adopted by EPA on August 28, 2012, 77 Fed. Reg. [insert page], August [insert date],~~ October 15, 2012. [No change, except that this section shall only apply to vehicles certifying under the 2012 through 2016 MY National greenhouse gas program.]

\* \* \* \*

California Environmental Protection Agency  
AIR RESOURCES BOARD

**PROPOSED 15-DAY MODIFICATIONS**

**CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR  
2009 THROUGH 2017 MODEL ZERO-EMISSION VEHICLES AND HYBRID  
ELECTRIC VEHICLES, IN THE PASSENGER CAR, LIGHT-DUTY TRUCK AND  
MEDIUM-DUTY VEHICLE CLASSES**

Adopted: December 17, 2008  
Amended: December 2, 2009  
Amended: March 22, 2012  
Amended: [insert date of amendment]

Note: The following text contains staff's suggested modifications to these test procedures as originally proposed September 14, 2012. Unless otherwise indicated below, the text of the originally proposed amendments to this document are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions compared to the test procedures as adopted March 22, 2012. The modified language now proposed by staff is shown in double underline to indicate additions and ~~double-strikeout~~ to indicate deletions. Staff is proposing modifications to limited portions of the original proposal; for some portions of the original proposal for which no modifications are proposed, the text has been omitted and the omission indicated by [No change] or "\* \* \* \*". [No change] also indicates proposed federal provisions that are also proposed for incorporation herein without change. Existing intervening text that is not amended in this rulemaking is indicated by "\* \* \* \*".

\* \* \* \*

**CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR  
2009 THROUGH 2017 MODEL ZERO-EMISSION VEHICLES AND HYBRID  
ELECTRIC VEHICLES, IN THE PASSENGER CAR, LIGHT-DUTY TRUCK AND  
MEDIUM-DUTY VEHICLE CLASSES**

\* \* \* \* \*

**C. Zero-Emission Vehicle Standards.**

\* \* \* \* \*

**3. Partial ZEV Allowance Vehicles (PZEVs).**

\* \* \* \* \*

**3.3 Zero-Emission VMT PZEV Allowance.**

(a) *Calculation of Zero-Emission VMT Allowance.* A vehicle that meets the requirements of subdivision C.3.2 and has zero-emission vehicle miles traveled (“VMT”) capability will generate an additional zero emission VMT PZEV allowance, calculated as follows:

<i>Range</i>	<i>Zero-emission VMT Allowance</i>
EAER <sub>u</sub> < 10 miles	0.0
EAER <sub>u</sub> ≥ 10 to 40 miles	EAER <sub>u</sub> x (1 – UF <sub>R<sub>cda</sub></sub> )/11.028
EAER <sub>u</sub> > 40 miles	$\frac{-(EAER_{u40}) \times [1 - (UF_{40} \times R_{cda} / EAER_u)]}{11.028} + 3.627 \times (1 - UF_n)$ <p>Where,            UF<sub>40</sub> = utility factor at 40 miles            EAER<sub>u40</sub> = 40 miles  <math>n = 40 \times (R_{cda} / EAER_u)</math></p>

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

The urban equivalent all-electric range ( $EAER_u$ ) and urban charge depletion range actual ( $R_{cda}$ ) shall be determined in accordance with section ~~G.5.4~~11.4 and G.11.9, respectively, of these test procedures. The utility Factor (UF) shall be determined according to SAE J2841 SEP2010 from the Fleet Utility Factors (FUF) Table in Appendix B or using a polynomial curve fit with "FUF Fit" coefficients from Table 2 Utility Factor Equation Coefficients based on the charge depleting actual range (urban cycle) ~~( $R_{cda}$ ) shall be determined according to Section 4.5.2 Equation 6 and the "Fleet UF" Utility Factor Equation Coefficients in Section 4.5.2, Table 3 of SAE J2841 March 2009.~~

\* \* \* \* \*

California Environmental Protection Agency  
AIR RESOURCES BOARD

**PROPOSED 15-DAY MODIFICATIONS**

**CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR  
2018 AND SUBSEQUENT MODEL ZERO-EMISSION VEHICLES AND HYBRID  
ELECTRIC VEHICLES, IN THE PASSENGER CAR, LIGHT-DUTY TRUCK AND  
MEDIUM-DUTY VEHICLE CLASSES**

Adopted: March 22, 2012  
Amended: [INSERT DATE OF AMENDMENT]

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\* \* \* \*

**CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR  
2018 AND SUBSEQUENT MODEL ZERO-EMISSION VEHICLES AND  
HYBRID ELECTRIC VEHICLES, IN THE PASSENGER CAR,  
LIGHT-DUTY TRUCK AND MEDIUM-DUTY VEHICLE CLASSES**

\* \* \* \*

**C. Zero-Emission Vehicle Standards.**

\* \* \* \*

**3. Transitional Zero-Emission Vehicles (TZEV).**

\* \* \* \*

**3.3 Allowances for TZEVs.**

(a) *Zero Emission Vehicle Miles Traveled TZEV Allowance Calculation.* A vehicle that meets the requirements of subdivision C.3.2 and has zero-emission vehicle miles traveled (VMT), as defined by and calculated by this test procedure and measured as equivalent all electric range (EAER) capability will generate allowance according to the following equation:

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

(1) Allowance for US06 Capability. TZEVs with US06 all electric range capability (AER) of at least 10 miles shall earn an additional 0.2 allowance. US06 test cycle range capability shall be determined in accordance with section ~~E-8~~G.7.5 of these test procedures.

\* \* \* \*