CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES
FOR 2004 AND SUBSEQUENT MODEL
HEAVY-DUTY DIESEL-ENGINES AND VEHICLES

Adopted: December 12, 2002
Amended: July 24, 2003
Amended: September 1, 2006
Amended: July 26, 2007
Amended: October 17, 2007
Amended: October 14, 2008
Amended: September 27, 2010
Amended: October 12, 2011
Amended: March 22, 2012
Amended: December 6, 2012
Amended: April 18, 2013 (Corrected by Section 100)
Amended: October 21, 2014
Amended: September 2, 2015

Note: The proposed amendments to this document are shown in underline to indicate additions and strikeout to indicate deletions compared to the test procedures as last amended October 21, 2014. Existing intervening text that is not amended is indicated by “* * * *”.

As Amended: September 2, 2015
Date of Hearing: October 23, 2014
NOTE: This document is incorporated by reference in section 1956.8(d), title 13, California Code of Regulations ("CCR") and also incorporates by reference various sections of Title 40, Part 86 of the Code of Federal Regulations, with some modifications. It contains the majority of the requirements necessary for certification of heavy-duty diesel engines for sale in California, in addition to containing the exhaust emissions standards and test procedures for these diesel engines. The section numbering conventions for this document are set forth in subparagraph 4 on page 6. Reference is also made in this document to other California-specific requirements that are necessary to complete an application for certification. These other documents are designed to be used in conjunction with this document. They include:


2. Warranty requirements (sections 2035, et seq., title 13, CCR);

3. OBD II (section 1968, et seq., title 13, CCR, as applicable);

4. "California Test Procedures for Evaluating Substitute Fuels and New Clean Fuels through 2014," as last amended March 22, 2012 (incorporated by reference in section 2317, title 13, CCR); and


As Amended: September 2, 2015
Date of Hearing: October 23, 2014
CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 2004 AND SUBSEQUENT MODEL HEAVY-DUTY DIESEL ENGINES AND VEHICLES

PART 86 – CONTROL OF EMISSIONS FROM NEW AND IN-USE HIGHWAY VEHICLES AND ENGINES

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

§86.1 Incorporation by Reference materials. September 15, 2011 February 19, 2015.
1. Delete subparagraph (a).
2. Amend subparagraph (b) as follows:
   2.1 Delete subparagraphs (b)(1) through (b)(5).
   2.2 Subparagraph (b)(6) [No change.]


1. General Applicability. [§86.xxx-1]
      1. §86.001-1 October 6, 2000.

   1.4 Amend subparagraph (e) as follows: Small volume manufacturers. Special certification procedures are available for any manufacturer whose projected or actual combined California sales of passenger cars, light-duty trucks, medium-duty vehicles, heavy-duty vehicles and heavy-duty engines in its product line (including all vehicles and engines imported under the provisions of 40 CFR §§85.1505 and 85.1509 of this chapter) are fewer than 4,500 units 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 production shall be based on projected California sales. To certify its product line under these optional procedures, the small-volume manufacturer must first obtain the Executive Officer's approval. The manufacturer must meet the eligibility criteria specified in 40 CFR §86.092-
14(b) before the Executive Officer’s approval will be granted. The small
volume manufacturer’s heavy-duty engine certification procedures are
described in 40 CFR §86.092-14.

* * * *

2. §86.005-1 October 6, 2000

* * * *

2.5 Amend subparagraph (e) as follows: Small volume manufacturers.
Special certification procedures are available for any manufacturer whose
projected or actual combined California sales of passenger cars, light-duty
trucks, medium-duty vehicles, heavy-duty vehicles and heavy-duty engines in
its product line (including all vehicles and engines imported under the
provisions of 40 CFR §§85.1505 and 85.1509 of this chapter) are fewer than
4,500 units 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 production shall be based on projected California sales. To certify
its product line under these optional procedures, the small-volume
manufacturer must first obtain the Executive Officer’s approval. The
manufacturer must meet the eligibility criteria specified in 40 CFR §86.092-
14(b) before the Executive Officer’s approval will be granted. The small
volume manufacturer’s heavy-duty engine certification procedures are
described in 40 CFR §86.092-14.

* * * *

3. §86.016-1 September 15, 2011 April 28, 2014

3.1 Subparagraph (a) Applicability. [No change.] Amend as follows:

3.1.1 Subparagraph (1). [No change.]

3.1.2 Subparagraphs (2) and (3). Delete and replace with the
following: A manufacturer must certify any complete heavy-duty vehicle of
14,000 pounds gross vehicle weight rating or less and any 2020 and
subsequent model incomplete heavy-duty vehicle of 10,000 pounds gross
vehicle weight rating or less in accordance with the medium-duty vehicle
provisions contained in the “California 2015 and Subsequent Model Criteria
Pollutant Exhaust Emission Standards and Test Procedures and 2017 and
Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test
Procedures for Passenger Cars, Light-Duty Trucks and Medium-Duty
Vehicles,” incorporated by reference in section 1961.2, title 13, CCR, as
applicable. Heavy-duty engine or vehicle provisions of subpart A do not apply
to such a vehicle.
3.1.3 Subparagraph (4). Delete and replace with the following:
The provisions of this subparagraph are contained the “California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles.”

3.1.4 Subparagraph (5). Delete and replace with the following: All heavy-duty engines and vehicles are subject to the on-board diagnostic system requirements in section 1968 et seq., title 13, CCR, as applicable.

3.2 Subparagraph (b) Optional Applicability Relationship to subpart S of this part. [n/a; Otto-cycleNo change.]

3.3 Subparagraph (c) through (c)(1) [No change.] Greenhouse gas emission standards. Delete and replace with the following: See 40 CFR parts 1036 and 1037 for greenhouse gas emission standards that apply for heavy-duty engines and vehicles, as modified by these test procedures.

3.4 Delete subparagraph (c)(2) and replace with the following: On-board diagnostic requirements according to the provisions of title 13, CCR, sections 1968.2 and 1968.5 or title 13, CCR, sections 1971.1 and 1971.5, as applicable.

3.5 Delete subparagraph (c)(3) and replace with the following: Evaporative emission standards according to the provisions of title 13, CCR, section 1976.

3.6 Delete subparagraph (c)(4) and replace with the following: Refueling emission standards according to the provisions of title 13, CCR, section 1978.

3.7 Subparagraph (d) Non-petroleum fueled vehicles. [No change.] Delete and replace with the following: The standards and requirements of this part apply to non-petroleum fueled motor vehicles, as described in subsection B. of this section.

3.8 Amend subparagraph (e) as follows: Small volume manufacturers. Special certification procedures are available for any manufacturer whose projected or actual combined California sales of passenger cars, light-duty trucks, medium-duty vehicles, heavy-duty vehicles, and heavy-duty engines in its product line (including all vehicles and engines imported under the provisions of 40 CFR §§85.1505 and 85.1509) are fewer than 4,500 units 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 production shall be based on projected California sales. To certify its product line under these optional procedures, the small volume manufacturer must first obtain the Executive Officer’s approval. The manufacturer must meet the eligibility criteria specified in 40 CFR §86.094-14(b) before the Executive Officer’s approval will be granted. The small volume manufacturer’s heavy-duty engine certification procedures are described in 40 CFR §86.098-14.

3.9 Subparagraph (f) Optional procedures for determining exhaust opacity. [No change.]

3.7 Subparagraph (g). [n/a; clean alternative fuel conversions]
3.8 Subparagraph (h). *Turbine engines.* [No change.]

B. California provisions.

* * * *


* * * *


* * * *

11. Emission standards for diesel heavy-duty engines and vehicles. [§86.xxx-11]
A. Federal provisions.

* * * *

A. Federal provisions. [A small volume manufacturer shall mean a California small volume manufacturer as defined in §86.001-1 (e), as modified above. Any reference to 10,000 units shall mean 4,500 units in California based on the average number of units sold for the three previous consecutive model years defined in §86.001-1 (e), as modified in Section I.1.A, above.]
   1. §86.094-14 January 3, 1996April 28, 2014. Amend as follows:

* * * *

17. On-board diagnostics for engines used in applications less than or equal to 14,000 pounds GVWR. [§86.099-17; §86.005-17; §86.007-17] [Delete and replace with: All heavy-duty diesel cycle engines used in vehicles
up to 14,000 pounds GVW must have an on-board diagnostic system as required in title 13, CCR §1968 et seq, as applicable.]

18. On-board diagnostics for engines used in applications greater than 14,000 pounds GVWR.  [§86.010-18]
[Delete and replace with: All heavy-duty diesel cycle engines used in vehicles greater than 14,000 pounds GVWR must have an on-board diagnostic system as required in title 13, CCR §1971.1 et seq, as applicable.]

* * * *

[No change.]

21. Application for certification.  [§86.xxx-21]
   A. Federal provisions.
      1. §86.004-21 October 6, 2000April 28, 2014. Amend as follows:
         * * * *
      2. §86.007-21 August 30, 2006April 28, 2014. Amend as follows:
         * * * *

   B. California provisions
      * * * *

      2. Heavy-Duty Diesel Engine Idling Requirements.
         * * * *

      2.3 If the heavy-duty diesel engine for which certification is being requested incorporates any of the alternative idle emission control strategies contained in title 13, CCR, section 2485(c)(3), then the manufacturer must provide in its application for certification a description of the alternative strategy or technology including the type, brand name, model identification number, and where applicable emissions data and power rating. In addition, the manufacturer must also provide the appropriate labels to be affixed to the outside of the vehicle as required in subsections 35.B.4. If the alternative technology is a fuel-fired heater, then the manufacturer must provide with the application for certification the information required under subsection H.4.4, Part I of 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

22. Approval of application for certification; test fleet selections; determinations of parameters subject to adjustment for certification and Selective Enforcement Audit, adequacy of limits, and physically adjustable ranges. [§86.00494-22] April 6, 1994April 30, 2010. [No change.]

23. Required data. [§86.xxx-23]
A. Federal provisions.
      *
   2. §86.001-23. October 21, 1997April 28, 2014. [No change, except that the amendments indicated for §86.098-23 above still apply.]
   3. §86.007-23. June 17, 2013April 28, 2014. [No change, except that the amendments indicated for §86.098-23 above still apply.]

25. Maintenance. [§86.xxx-25]
A. Federal provisions.
      *

      *

A. Federal provisions.
   1. §86.004-28. August 30, 2006April 28, 2014. Amend as follows:
      *

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30. Certification. [§86.xxx-30]
   A. Federal provisions
      1. §86.004-30. October 6, 2000April 28, 2014. Amend as follows:
         * * * *

      2. §86.007-30. February 24, 2009April 28, 2014. Amend as follows:
         * * * *

35. Labeling. [§86.xxx-35].
      * * * *

         2.1 Subparagraphs (a) through (i). [No change except that the amendments set forth in §86.001-35 apply.]
         * * * *


38. Maintenance instructions. [§86.xxx-38]
   A. Federal provisions
      1. §86.004-38 June 27, 2003April 28, 2014.
         * * * *

      1.3 Subparagraphs (g)(2) through (hi). [No change.]

   2. §86.007-38 June 29, 2004.
      2.1 Subparagraphs (a) through (h). [No change, except as amended in §86.004-38, above.]
      2.2 Amend subparagraph (i) as follows: For each new diesel-fueled engine subject to the standards prescribed in title 13, CCR §1956.8(a), §1956.8(h), and Sec. 86.007-11, as applicable, the manufacturer shall furnish or cause to be furnished to the ultimate purchaser a statement that “This engine must be operated only with low sulfur diesel fuel (that is, diesel fuel meeting ARB specifications for highway diesel fuel, including a 15 ppm sulfur cap).”
§86.010-38 April 30, 2010

32.1 Subparagraphs (a) through (f). [No change.]

32.2 Subparagraph (g). Delete; replace with: Manufacturers of heavy-duty diesel engines used in vehicles weighing 14,000 pounds GVW and less must comply with the motor vehicle service information requirements set forth in title 13, CCR §1969.

32.3 Subparagraph (h). [No change.]

32.4 Amend subparagraph (i) as follows: Through model year 2013, for each new diesel-fueled engine subject to the standards prescribed in title 13, CCR §1956.8(a), §1956.8(h), and Sec. 86.007-11, as applicable, the manufacturer shall furnish or cause to be furnished to the ultimate purchaser a statement that “This engine must be operated only with ultra-low sulfur diesel fuel (that is, diesel fuel meeting ARB specifications for highway diesel fuel, including a 15 ppm sulfur cap).”

32.5 Subparagraph (j). Delete; replace with: Manufacturers of heavy-duty diesel engines used in vehicles over 14,000 pounds GVW must comply with the motor vehicle service information requirements set forth in title 13, CCR §1969.

* * * *

Subpart N - Emission Regulations for New Otto-Cycle and Diesel Heavy-Duty Engines; Gaseous and Particulate Exhaust Test Procedures for Heavy-duty Engines

* * * *

Amend subparagraph (a)(3) as follows: For methanol-fueled engines, the sample lines for the methanol and formaldehyde samples are heated to $235\pm 15^\circ F$ ($113\pm 8^\circ C$).
Amend as follows:

1. Subparagraph (a) Gasoline fuel [n/a]

2. Subparagraph (b) Petroleum diesel test fuel. [For guidance see §86.1313-98.]

3. Subparagraph (c) Methanol fuel. Amend §86.1313-94(c) as follows:
   Delete subparagraphs (c)(1) and (c)(2); replace with:

   3.1 (1) Exhaust emission test fuel. For Otto-cycle or diesel alcohol vehicles and hybrid electric vehicles which use Otto-cycle or diesel alcohol engines, methanol or ethanol fuel used for exhaust and evaporative emission testing shall meet the specifications set forth in section 2292.1, title 13, CCR, (Specifications for M-100 Fuel Methanol) or section 2292.3 (Specification for E-100 Fuel Ethanol) as modified by the following:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M-100 Fuel Methanol</strong></td>
<td></td>
</tr>
<tr>
<td>Methanol</td>
<td>98.0 ± 0.5 vol. percent</td>
</tr>
<tr>
<td><strong>Ethanol</strong></td>
<td></td>
</tr>
<tr>
<td>Petroleum fuel meeting the specifications of 40 CFR §86.1313-98</td>
<td>1.0 ± 0.1 vol. percent</td>
</tr>
<tr>
<td><strong>E-100 Fuel Ethanol</strong></td>
<td></td>
</tr>
<tr>
<td>Ethanol</td>
<td>98.0 ± 0.5 vol. percent</td>
</tr>
</tbody>
</table>

As Amended: September 2, 2015
Date of Hearing: October 23, 2014
3.2 (2) **Mileage accumulation fuel.** For Otto-cycle or diesel-alcohol vehicles and hybrid electric vehicles which use Otto-cycle or diesel alcohol engines, methanol or ethanol fuel used for service accumulation shall meet the applicable specifications set forth in section 2292.1, title 13, CCR, (Specifications for M-100 Fuel Methanol) or section 2292.3 (Specification for E-100 Fuel Ethanol).

3.3 (3) [No-change.]

3.4 Fuel additives and ignition improvers intended for use in alcohol test fuels shall be subject to the approval of the Executive Officer. In order for such approval to be granted, a manufacturer must demonstrate that emissions will not be adversely affected by the use of the fuel additive or ignition improver.

4. Subparagraph (d) Mixtures of petroleum and methanol fuels for flexible fuel vehicles. Amend 86.1313-94(d) as follows: Delete subparagraphs (d)(1) and (d)(2); replace with:

4.1 (1) **Exhaust emission test fuel for emission-data and durability-data vehicles.** For Otto-cycle or diesel-alcohol vehicles and hybrid electric vehicles which use Otto-cycle or diesel alcohol engines, methanol or ethanol fuel used for exhaust emission testing shall meet the applicable specifications set forth in section 2292.2, title 13, CCR, (Specifications for M-85 Fuel Methanol) or section 2292.4 (Specifications for E-85 Fuel Ethanol) as modified by the following:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M-85 Fuel Methanol</strong></td>
<td></td>
</tr>
<tr>
<td>Petroleum fuel meeting the specifications of 40 CFR §86.1313-98</td>
<td>13-16 vol. percent</td>
</tr>
<tr>
<td>Reid vapor pressure</td>
<td>8.0-8.5 psi, using common blending components from the gasoline stream.</td>
</tr>
<tr>
<td><strong>E-85 Fuel Ethanol</strong></td>
<td></td>
</tr>
<tr>
<td>Petroleum fuel meeting the specifications of 40 CFR §86.1313-98</td>
<td>15-21 vol. percent</td>
</tr>
</tbody>
</table>

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| —Reid vapor pressure | 8.0-8.5 psi, using common blending components from the gasoline stream. |

4.2 (2) **Mileage accumulation fuel.** For flexible fuel Otto-cycle or diesel alcohol vehicles and hybrid electric vehicles that use Otto-cycle or diesel alcohol engines, petroleum fuel shall meet the applicable specifications in §86.1313-98(a) or (b), as modified by these test procedures, and methanol or ethanol fuel shall meet the applicable specifications set forth in section 2292.2, title 13, CCR, (Specifications for M-85 Fuel Methanol) or section 2292.4 (Specification for E-85 Fuel Ethanol). Mileage accumulation procedures shall be subject to the requirements set forth in 40 CFR 86.001-26 and 86.1831-01(a) and (b) and are subject to the prior approval of the Executive Officer. A manufacturer shall consider expected customer fuel usage as well as emissions deterioration when developing its durability demonstration.

4.3 (3) [No change.]

4.4 **Evaporative emission test fuel for emission-data and durability-data vehicles.** For Otto-cycle or diesel alcohol vehicles and hybrid electric vehicles which use Otto-cycle or diesel alcohol engines, a blend of methanol or ethanol fuel used for evaporative emission testing shall meet the applicable specifications set forth in section 2292.2, title 13, CCR, (Specifications for M-85 Fuel Methanol) or section 2292.4 (Specifications for E-85 Fuel Ethanol) and gasoline meeting the specifications of §86.1313-94(a)(1), as modified by these test procedures, such that the final blend is composed of either 35 volume percent methanol (1.0 volume percent of total blend) for methanol-fueled vehicles or 10 volume percent ethanol (1.0 volume percent of total blend) for ethanol-fueled vehicles. Alternative alcohol-gasoline blends may be used in place of M35 or E10 if demonstrated to result in equivalent or higher evaporative emissions, subject to prior approval of the Executive Officer.

4.5 **Additive requirements.** Fuel additives and ignition improvers intended for use in alcohol test fuels shall be subject to the approval of the Executive Officer. In order for such approval to be granted, a manufacturer must demonstrate that emissions will not be adversely affected by the use of the fuel additive or ignition improver.

5. Subparagraph (e) Natural gas fuel. Amend §86.1313-94(e) as follows:
Delete subparagraphs (e)(1), (e)(2) and (e)(3); Replace with:

5.1 (1) **Exhaust emission test fuel.** For dedicated, dual-fueled or hybrid electric vehicles which use natural gas, fuel used for exhaust and evaporative emission testing shall meet the specifications listed in section
2292.5, title 13, CCR, (Specifications for Compressed Natural Gas) as modified by the following:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressed Natural Gas Certification Test Fuel</td>
<td></td>
</tr>
<tr>
<td>— Methane</td>
<td>90.0 ± 1.0 mole percent</td>
</tr>
<tr>
<td>— Ethane</td>
<td>4.0 ± 0.5 mole percent</td>
</tr>
<tr>
<td>— C₃ and higher hydrocarbon content</td>
<td>2.0 ± 0.3 mole percent</td>
</tr>
<tr>
<td>— Oxygen</td>
<td>0.5 mole percent maximum</td>
</tr>
<tr>
<td>— Inert gases (CO₂ + N₂)</td>
<td>3.5 ± 0.5 vol. percent</td>
</tr>
</tbody>
</table>

5.2 — (2) **Mileage accumulation fuel.** For dedicated, dual-fueled or hybrid electric vehicles which use natural gas, fuel used for service accumulation shall meet the specifications listed in section 2292.5, title 13, CCR, (Specifications for Compressed Natural Gas).

5.3 — (3) Delete.

5.4 — (4) [No change.]

6. Amend 86.1313-94(f) as follows: Delete subparagraphs (f)(1) and (f)(2); Replace with:

6.1 — (1) **Evaporative and exhaust emission test fuel.** For dedicated, dual-fueled or hybrid electric vehicles which use liquefied petroleum gas, fuel used for exhaust and evaporative emission testing shall meet the specifications listed in section 2292.6, title 13, CCR, (Specifications for Liquefied Petroleum Gas) as modified by the following:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquefied Petroleum Gas Certification Test Fuel</td>
<td></td>
</tr>
<tr>
<td>— Propane</td>
<td>93.5 ± 1.0 volume percent</td>
</tr>
<tr>
<td>— Propene</td>
<td>3.8 ± 0.5 volume percent</td>
</tr>
<tr>
<td>— Butane and heavier components</td>
<td>4.9 ± 0.3 volume percent</td>
</tr>
</tbody>
</table>

6.2 — (2) **Mileage accumulation fuel.** For dedicated, dual-fueled or hybrid electric vehicles which use liquefied petroleum gas, fuel used for
service accumulation shall meet the specifications listed in section 2292.6, 
title 13, CCR, (Specifications for Liquefied Petroleum Gas). 
6.3—(3) [No change.]

7. §86.1313-94(g) [No change.]

8. Add the following California only requirement: Identification of New Clean 
Fuels to be Used in Certification Testing

Any person may petition the state board to establish by regulation 
certification testing specifications for a new clean fuel for which 
specifications for the new clean fuel are not specifically set forth in 
paragraph __________ 98 as amended herein. Prior to adopting such 
specifications, the state board shall consider the relative cost-
effectiveness of use of the fuel in reducing emissions compared to the use 
of other fuels. Whenever the state board adopts specifications for a new 
clean fuel for certification testing, it shall also establish by regulation 
specifications for the fuel as it is sold commercially to the public.

(a) If the proposed new clean fuel may be used to fuel existing motor 
vehicles, the state board shall not establish certification 
specifications for the fuel unless the petitioner has demonstrated 
that:

(1) Use of the new clean fuel in such existing motor vehicles 
would not increase emissions of NMHC, NOx, CO, and the 
potential-risk associated with toxic air contaminants, as 
determined pursuant to the procedures set forth in the 
"California Test Procedures for Evaluating Substitute Fuels 
and New Clean Fuels," as adopted September 17, 1993. In 
the case of fuel-flexible vehicles or dual-fuel vehicles that 
were not certified on the new clean fuel but are capable of 
being-operated on it, emissions during operation with the 
new clean fuel shall not increase compared to emissions 
during vehicle operation on gasoline.

(2) Use of the new clean fuel in such existing motor vehicles 
would not result in increased deterioration of the vehicle and 
would not void the warranties of any such vehicles.

(b) Whenever the state board designates a new clean fuel pursuant to 
this section, the state board shall also establish by regulation 
required specifications for the new clean fuel sold commercially in 
California.

1. Subparagraph (a) [n/a]

2. Amend subparagraph (b) Diesel test fuel as follows:
   2.1 Subparagraph (b)(1) [No change.]
   2.2 Add the following language to subparagraph (b)(2): For 2004 through 2005 model year medium-duty diesel-fueled engines, the petroleum fuel used in exhaust emissions testing may meet the specifications listed below, or substantially equivalent specifications approved by the Executive Officer, as an option to the specifications in Table N90-2. Where a manufacturer elects pursuant to this subparagraph to conduct exhaust emission testing using the specifications in Table N98-2, or the specifications listed below, the Executive Officer shall conduct exhaust emission testing with the diesel fuel meeting the specifications elected by the manufacturer. The manufacturer shall submit evidence to the Executive Officer demonstrating to the Executive Officer’s satisfaction that the test fuel will be the predominant in-use fuel. Such evidence could include such things as copies of signed contracts from customers indicating the intent to purchase and use the test fuel as the primary fuel for use in the engines or other evidence acceptable to the Executive Officer.

<table>
<thead>
<tr>
<th>Fuel Property</th>
<th>Limit</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Cetane Number</td>
<td>47-55</td>
<td>D613-86</td>
</tr>
<tr>
<td>Distillation Range, °F</td>
<td></td>
<td>Title 13 CCR, §2282(g)(3)</td>
</tr>
<tr>
<td>IBP</td>
<td>340-420</td>
<td></td>
</tr>
<tr>
<td>10% point</td>
<td>400-490</td>
<td></td>
</tr>
<tr>
<td>50% point</td>
<td>470-560</td>
<td></td>
</tr>
<tr>
<td>90% point</td>
<td>550-610</td>
<td></td>
</tr>
<tr>
<td>EP</td>
<td>580-660</td>
<td></td>
</tr>
<tr>
<td>API Gravity, degrees</td>
<td>33-39</td>
<td>D287-82</td>
</tr>
<tr>
<td>Total Sulfur, wt. %</td>
<td>0.01-0.05</td>
<td>Title 13 CCR, §2282(g)(3)</td>
</tr>
<tr>
<td>Nitrogen Content, ppmw</td>
<td>100-500</td>
<td>Title 13 CCR, §2282(g)(3)</td>
</tr>
<tr>
<td>Total Aromatic Hydrocarbons, vol.%</td>
<td>8-12</td>
<td>Title 13 CCR, §2282(g)(3)</td>
</tr>
<tr>
<td>Polycyclic Aromatic Hydrocarbons, wt. % (max.)</td>
<td>1.4</td>
<td>Title 13 CCR, §2282(g)(3)</td>
</tr>
<tr>
<td>Flashpoint, °F (max)</td>
<td>130</td>
<td>D 93-80</td>
</tr>
<tr>
<td>Viscosity @ 40°C, centistokes</td>
<td>2.0-4.1</td>
<td>D 445-83</td>
</tr>
</tbody>
</table>

a——ASTM specifications unless otherwise noted. A reference to a subsection of Title 13, CCR, §2282 means the test method identified in that subsection for the particular property. A test method other than that specified may be used following a determination by the Executive Officer that the other method produces results equivalent to the results of the
specified method.

2.3—(3) Add the following language to subparagraph (b)(3): For 2004 and 2005 model year medium-duty diesel-fueled engines, diesel fuel representative of commercial diesel fuel which will be generally available through retail outlets shall be used in service accumulation.

3. Subparagraphs (c), (d) and (e). [For guidance see §86.1313-94, above.]

1.____Subparagraph (a).[n/a]
2.____Subparagraph (b) heading and (b)(1) [No change]
3.____Reletter subparagraph §86.1313-2007(b)(2) as (b)(2)(A) and add the following:

(b)(2)(B) Diesel fuel having the specifications listed below may be used in exhaust emission testing as an option to the specifications in Table N07-2. If a manufacturer elects to use this option, the Executive Officer shall conduct exhaust emission testing with diesel fuel having the specifications listed below.

<table>
<thead>
<tr>
<th>Fuel Property</th>
<th>Limit</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Cetane Number</td>
<td>47-55</td>
<td>D613-86</td>
</tr>
<tr>
<td>Distillation Range, °F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IBP</td>
<td>340-420</td>
<td></td>
</tr>
<tr>
<td>10% point</td>
<td>400-490</td>
<td></td>
</tr>
<tr>
<td>50% point</td>
<td>470-560</td>
<td></td>
</tr>
<tr>
<td>90% point</td>
<td>550-610</td>
<td></td>
</tr>
<tr>
<td>EP</td>
<td>580-660</td>
<td></td>
</tr>
<tr>
<td>API Gravity, degrees</td>
<td>33-39</td>
<td>D287-82</td>
</tr>
<tr>
<td>Total Sulfur, ppm</td>
<td>7-15</td>
<td>Title 13 CCR, §2282(g)(3)</td>
</tr>
<tr>
<td>Nitrogen Content, ppmw</td>
<td>100-500</td>
<td>Title 13 CCR, §2282(g)(3)</td>
</tr>
<tr>
<td>Total Aromatic Hydrocarbons, vol.%</td>
<td>8-12</td>
<td>Title 13 CCR, §2282(g)(3)</td>
</tr>
<tr>
<td>Polycyclic Aromatic Hydrocarbons, wt. % (max.)</td>
<td>1.4</td>
<td>Title 13 CCR, §2282(g)(3)</td>
</tr>
<tr>
<td>Flashpoint, °F (max)</td>
<td>130</td>
<td>D 93-80</td>
</tr>
<tr>
<td>Viscosity @ 40°C, centistokes</td>
<td>2.0-4.1</td>
<td>D 445-83</td>
</tr>
</tbody>
</table>

a—ASTM specifications unless otherwise noted. A reference to a subsection of Title 13, CCR, §2282 means the test method identified in that subsection for the particular property. A test method other than that specified may be used following a determination by the Executive Officer that the other method produces results equivalent to the results of the
specified method.

4. Subparagraph (b)(3) [No change]

86.1316-94 Calibration; frequency and overview. September 5, 1997.
86.1320-90 Gas meter or flow instrumentation calibration; particulate, methanol, and formaldehyde measurement. April 11, 1989.
86.1322-84 Carbon monoxide analyzer calibration. September 5, 1997.
86.1341-98 Test cycle validation criteria. September 5, 1997.

* * * * *

Amend subparagraph (d) Meaning of symbols as follows:

* * * * *

Delete subparagraph (d)(1)(ii)(D) and replace with: If gaseous fuels are being used, 18.64 g/ft$^3$ for natural gas and 17.28 g/ft$^3$ for liquefied petroleum gas, assuming an average carbon to hydrogen ratio of 1:3.803 for natural gas and 1:2.656 for liquefied petroleum gas, at 68°F and 760 mm Hg pressure. The
Executive Officer may approve other density values deemed appropriate by a manufacturer when gaseous fuels are being used.

Amend subparagraph (d)(3)(v)(B) as follows: 
\[ \text{CO}_e = [1 - (0.01 + 0.005\text{HCR})\text{CO}_2e - 0.00323\text{R}]\text{CO}_{em} \]
for methanol fuel, where HCR is hydrogen to carbon ratio as measured for the fuel used. For natural gas and liquefied petroleum gas, HCR is assumed to be 2.656 and 3.802, respectively.

Amend subparagraph (d)(8)(iii) as follows: For petroleum-fueled, gaseous-fueled, and methanol-fueled diesel engines: 
\[ K_H = 1/[1-0.0026(H-75)] \]
(or for SI units, \( = 1/[1-0.0182(H-10.71)] \)).


A.  Federal provisions

*  *  *  *  *

3. Amend subparagraph (b) as follows:
3.1 Amend subparagraph (b)(1) as follows: The ramped-modal procedures described in §86.1362-2007 apply to 2007 and subsequent model year heavy duty diesel engines. See B.1. of this section for the procedures applicable to 2005 and 2006 model year engines.

*  *  *  *  *

B.  California provisions

1. Emission testing caps and procedures for the 2005 and subsequent 2006 model years.

*  *  *  *

(Deleted on April 28, 2014, by U.S. EPA, but this section remains unchanged in these test procedure since they were applicable to 2004 through 2009 model year heavy-duty engines.)

As Amended: September 2, 2015
Date of Hearing: October 23, 2014
A. Federal provisions.

1. Amend subparagraph (a) as follows: General. The purpose of this test procedure is to measure in-use emissions of 2005 and subsequent model year heavy-duty diesel engines while operating within a broad range of speed and load points (the Not-To-Exceed Control Area) and under conditions which can reasonably be expected to be encountered in normal vehicle operation and use. Emission results from this test procedure are to be compared to the Not-To-Exceed Limits specified in paragraph (d)(1) of this section. The Not-To-Exceed Limits specified in paragraph (d)(1) of this section do not apply for engine starting conditions. Tests conducted using the procedures specified in §1901 of this subpart are considered valid Not-to-Exceed tests (Note: duty cycles and limits on ambient conditions do not apply for Not-To-Exceed tests).

8. Subparagraph (h). Emergency vehicle AECDs. [No change.]

* * * *

86.1372-2007 Measuring smoke emissions within the NTE zone. October 6, 2000  
April 28, 2014.

This section contains the measurement techniques to be used for determining compliance with the filter smoke limit or opacity limits in §86.1370-2007 (d)(3)(i). [No change to remainder of section.]


86.1380-2004 Load response test. October 6, 2000. [Delete]

Subpart S – General Compliance Provisions for Control of Air Pollution From New and In-Use Light-Duty Vehicles, Light-Duty Trucks, and Complete Otto-Cycle Heavy-Duty Vehicles.

86.1863-07 Optional chassis certification for diesel vehicles. September 15, 2011.  
For the 2015 through 2019 model years, a manufacturer may optionally certify heavy-duty diesel vehicles weighing 8,500 to 10,000 pounds GVWR or less to the emission standards specified in title 13, CCR, §1961 or §1961.2, as applicable. Such vehicles must meet all applicable requirements of the “California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles,” as amended December 6, 2012, incorporated by reference in section 1961.2, title 13, CCR. For the 2015 and subsequent model years, a manufacturer may optionally certify heavy-duty diesel vehicles weighing 10,001 to 14,000 pounds GVWR or less to the emission standards specified in title 13, CCR, §1961.2. Such vehicles must meet all applicable requirements of the “California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles,” as amended December 6, 2012, incorporated by reference in section 1961.2, title 13, CCR. For the 2020 and subsequent model years, heavy-duty diesel vehicles 8,501 to 10,000 pounds GVW must certify to the primary emission standards and test procedures for complete vehicles specified in section 1961.2, title 13, CCR.

* * * *

PART 1036 – CONTROL OF EMISSIONS FROM NEW AND IN-USE HEAVY-DUTY HIGHWAY ENGINES

* * * *

Subpart B – Emission Standards and Related Requirements

* * * *

1036.115  Other requirements. September 15, 2011April 28, 2014.

* * * *

PART 1065 – ENGINE-TESTING PROCEDURES.

Subpart A – Applicability and General Provisions


* * * *
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Date</th>
<th>New Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1065.2</td>
<td>Submitting information to EPA under this part.</td>
<td>April 30, 2010</td>
<td>April 28, 2014</td>
</tr>
<tr>
<td>1065.10</td>
<td>Other procedures.</td>
<td>April 30, 2010</td>
<td>February 19, 2015</td>
</tr>
<tr>
<td>1065.12</td>
<td>Approval of alternate procedures.</td>
<td>June 30, 2008</td>
<td>April 28, 2014</td>
</tr>
<tr>
<td>1065.15</td>
<td>Overview of procedures for laboratory and field testing.</td>
<td>September 15, 2011</td>
<td>April 28, 2014</td>
</tr>
<tr>
<td>1065.20</td>
<td>Units of measure and overview of calculations.</td>
<td>September 15, 2011</td>
<td>April 28, 2014</td>
</tr>
</tbody>
</table>

**Subpart B – Equipment Specifications**

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Date</th>
<th>New Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1065.140</td>
<td>Dilution for gaseous and PM constituents.</td>
<td>September 15, 2011</td>
<td>April 28, 2014</td>
</tr>
<tr>
<td>1065.145</td>
<td>Gaseous and PM probes, transfer lines, and sampling system components</td>
<td>April 30, 2010</td>
<td>April 28, 2014</td>
</tr>
<tr>
<td>1065.170</td>
<td>Batch sampling for gaseous and PM constituents.</td>
<td>September 15, 2011</td>
<td>April 28, 2014</td>
</tr>
</tbody>
</table>

**Subpart C – Measurement Instruments**

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Date</th>
<th>New Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1065.201</td>
<td>Overview and general provisions.</td>
<td>April 30, 2010</td>
<td>April 28, 2014</td>
</tr>
<tr>
<td>1065.205</td>
<td>Performance specifications for measurement instruments.</td>
<td>September 15, 2011</td>
<td>April 28, 2014</td>
</tr>
</tbody>
</table>

**Measurement of Engine Parameters and Ambient Conditions**

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Date</th>
<th>New Date</th>
</tr>
</thead>
</table>

As Amended: September 2, 2015
Date of Hearing: October 23, 2014
Flow-Related Measurements

* * * *


* * * *

CO and CO2 Measurements


Hydrocarbon Measurements


* * * *

1065.269 Photoacoustic analyzer for ethanol and methanol. April 28, 2014.

NOx Measurements


O2 Measurements


Air-to Fuel Ratio Measurements

PM Measurements


Subpart D – Calibrations and Verifications


Measurement of Engine Parameters and Ambient Conditions


Flow-Related Measurements


CO and CO₂ Measurements

Hydrocarbon Measurements


NOx Measurements

1065.372 NDUV analyzer HC and H2O interference verification. September 15, 2011.
1065.375 Interference verification for N2O analyzers. April 28, 2014.

Subpart E – Engine Selection, Preparation, and Maintenance


Subpart F – Performing an Emission Test in the Laboratory

1065.514 Cycle-validation criteria for operation over specified duty cycles. September 15, 2011.
1065.520 Pre-test verification procedures and pre-test data collection. September 15, 2011 April 28, 2014.
Subpart G – Calculations and Data Requirements

Subpart H – Engine Fluids, Test Fuels, Analytical Gases and Other Calibration Standards
4. Amend subparagraph (d) as follows: *Fuel specifications.*
   
   4.1 Subparagraph (1). [No change.]
   
   4.2 Subparagraph (2). The fuel parameters specified in this subpart depend on measurement procedures that are incorporated by reference.

* * * *

B. California provisions.

1. Methanol Fuel.
   
   1.1 Exhaust emission test fuel. For diesel alcohol vehicles and hybrid electric vehicles which use diesel alcohol engines, methanol or ethanol fuel used for exhaust and evaporative emission testing shall meet the specifications set forth in title 13, CCR, section 2292.1 (Specifications for M-100 Fuel Methanol) or section 2292.3 (Specification for E-100 Fuel Ethanol) as modified by the following:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M-100 Fuel Methanol</strong></td>
<td></td>
</tr>
<tr>
<td>Methanol</td>
<td>98.0 ± 0.5 vol. percent</td>
</tr>
<tr>
<td>Ethanol</td>
<td>1.0 vol. Percent (max.)</td>
</tr>
<tr>
<td>Petroleum fuel meeting the specifications of 40 CFR §86.1313-981065.703</td>
<td>1.0 ± 0.1 vol. percent</td>
</tr>
</tbody>
</table>

| **E-100 Fuel Ethanol** | |
| Ethanol      | 98.0 ± 0.5 vol. percent |
| Methanol     | 1.0 vol. Percent (max.) |
| Petroleum fuel meeting the specifications of 40 CFR §86.1313-981065.703 | 1.0 ± 0.1 vol. percent |

* * * *


   2.1 Exhaust emission test fuel for emission-data and durability-data vehicles. For diesel alcohol vehicles and hybrid electric vehicles which use diesel alcohol engines, methanol or ethanol fuel used for exhaust emission testing shall meet the applicable specifications set forth in title 13, CCR, section 2292.2 (Specifications for M-85 Fuel Methanol) or section 2292.4 (Specifications for E-85 Fuel Ethanol) as modified by the following:
<table>
<thead>
<tr>
<th>Specification</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-85 Fuel Methanol</td>
<td></td>
</tr>
<tr>
<td>Petroleum fuel meeting the specifications of 40 CFR §86.1313-981065.703</td>
<td>13-16 vol. percent</td>
</tr>
<tr>
<td>Reid vapor pressure</td>
<td>8.0-8.5 psi, using common blending components from the gasoline stream.</td>
</tr>
<tr>
<td>E-85 Fuel Ethanol</td>
<td></td>
</tr>
<tr>
<td>Petroleum fuel meeting the specifications of 40 CFR §86.1313-981065.703</td>
<td>15-21 vol. percent</td>
</tr>
<tr>
<td>Reid vapor pressure</td>
<td>8.0-8.5 psi, using common blending components from the gasoline stream.</td>
</tr>
</tbody>
</table>

2.2 Mileage accumulation fuel. For flexible fuel diesel alcohol vehicles and hybrid electric vehicles that use diesel alcohol engines, petroleum fuel shall meet the applicable specifications in §86.1313-98(a) or (b), as modified by these test procedures, and methanol or ethanol fuel shall meet the applicable specifications set forth in title 13, CCR, section 2292.2 (Specifications for M-85 Fuel Methanol) or section 2292.4 (Specification for E-85 Fuel Ethanol). Mileage accumulation procedures shall be subject to the requirements set forth in §§ 86.0044-26 and 86.1831-01(a) and (b) and are subject to the prior approval of the Executive Officer. A manufacturer shall consider expected customer fuel usage as well as emission deterioration when developing its durability demonstration.

* * * *

3. Identification of New Clean Fuels to be Used in Certification Testing. Any person may petition the state board to establish by regulation certification testing specifications for a new clean fuel for which specifications for the new clean fuel are not specifically set forth in paragraph §86.1313-98 part 1065, subpart H as amended herein. Prior to adopting such specifications, the state board shall consider the relative cost-effectiveness of use of the fuel in reducing emissions compared to the use of other fuels. Whenever the state board adopts specifications for a new clean fuel for certification testing, it shall also establish by regulation specifications for the fuel as it is sold commercially to the public.

* * * *


* * * *

As Amended: September 2, 2015
Date of Hearing: October 23, 2014
A. Federal provisions. [No change.]

B. California provisions.


1.1 Emission test fuel. For Otto-cycle or diesel alcohol vehicles and hybrid electric vehicles which use Otto-cycle or diesel alcohol engines, methanol or ethanol fuel used for exhaust and evaporative emission testing shall meet the specifications set forth in section 2292.1, title 13, CCR, (Specifications for M-100 Fuel Methanol) or section 2292.3 (Specification for E-100 Fuel Ethanol) as modified by the following:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-100 Fuel Methanol</td>
<td></td>
</tr>
<tr>
<td>Methanol</td>
<td>98.0 ± 0.5 vol. percent</td>
</tr>
<tr>
<td>Ethanol</td>
<td>1.0 vol. percent max.</td>
</tr>
<tr>
<td>Petroleum fuel meeting the specifications of §1065.710 as modified in subparagraph 2(b)(1).</td>
<td>1.0 ± 0.1 vol. percent</td>
</tr>
<tr>
<td>E-100 Fuel Ethanol</td>
<td></td>
</tr>
<tr>
<td>Ethanol</td>
<td>98.0 ± 0.5 vol. percent</td>
</tr>
<tr>
<td>Methanol</td>
<td>1.0 vol. percent max.</td>
</tr>
<tr>
<td>Petroleum fuel meeting the specifications of §1065.710 as modified in subparagraph 2(b)(1).</td>
<td>1.0 ± 0.1 vol. percent</td>
</tr>
</tbody>
</table>
1.2 Mileage accumulation fuel. For Otto-cycle or diesel alcohol vehicles and hybrid electric vehicles which use Otto-cycle or diesel alcohol engines, methanol or ethanol fuel used for service accumulation shall meet the applicable specifications set forth in section 2292.1, title 13, CCR, (Specifications for M-100 Fuel Methanol) or section 2292.3 (Specification for E-100 Fuel Ethanol).

1.3 Fuel additives and ignition improvers intended for use in alcohol test fuels shall be subject to the approval of the Executive Officer. In order for such approval to be granted, a manufacturer must demonstrate that emissions will not be adversely affected by the use of the fuel additive or ignition improver.


2.1 Exhaust emission test fuel for emission-data and durability-data vehicles. For Otto-cycle or diesel alcohol vehicles and hybrid electric vehicles which use Otto-cycle or diesel alcohol engines, methanol or ethanol fuel used for exhaust emission testing shall meet the applicable specifications set forth in section 2292.2, title 13, CCR, (Specifications for M-85 Fuel Methanol) or section 2292.4 (Specifications for E-85 Fuel Ethanol) as modified by the following. E-85 that meets the specifications in §1065.725 may be used in exhaust and evaporative emission testing as an option to the E-85 Fuel Ethanol specifications in this subparagraph. If a manufacturer elects to utilize E-85 Fuel Ethanol having the specifications listed below, the Executive Officer shall conduct exhaust emission testing with E-85 Fuel Ethanol having the specifications listed below. If a manufacturer elects to utilize E-85 Fuel Ethanol having the specifications set forth in 40 CFR §1065.725, the Executive Officer shall conduct exhaust emission testing with E-85 Fuel Ethanol having the specifications set forth in 40 CFR §1065.725.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M-85 Fuel Methanol</strong></td>
<td></td>
</tr>
<tr>
<td>Petroleum fuel meeting the specifications of §1065.710 as modified in subparagraph 2(b)(1).</td>
<td>13-16 vol. percent</td>
</tr>
<tr>
<td>Reid vapor pressure</td>
<td>8.0-8.5 psi, using common blending components from the gasoline stream.</td>
</tr>
<tr>
<td><strong>E-85 Fuel Ethanol</strong></td>
<td></td>
</tr>
<tr>
<td>Petroleum fuel meeting the specifications of §1065.710 as modified in subparagraph 2(b)(1).</td>
<td>15-21 vol. percent</td>
</tr>
<tr>
<td>Reid vapor pressure</td>
<td>8.0-8.5 psi, using common</td>
</tr>
</tbody>
</table>
2.2 **Mileage accumulation fuel.** For flexible fuel Otto-cycle or diesel alcohol vehicles and hybrid electric vehicles that use Otto-cycle or diesel alcohol engines, petroleum fuel shall meet the applicable specifications in §1065.710, as modified in §1065.710 subparagraph 2, above, and methanol or ethanol fuel shall meet the applicable specifications set forth in section 2292.2, title 13, CCR, (Specifications for M-85 Fuel Methanol) or section 2292.4 (Specification for E-85 Fuel Ethanol). Mileage accumulation procedures shall be subject to the requirements set forth in 40 CFR §86.004-26 and §86.1831-01(a) and (b) and are subject to the prior approval of the Executive Officer. A manufacturer shall consider expected customer fuel usage as well as emissions deterioration when developing its durability demonstration.

2.3 **Evaporative emission test fuel for emission-data and durability-data vehicles.** For Otto-cycle or diesel alcohol vehicles and hybrid electric vehicles which use Otto-cycle or diesel alcohol engines, a blend of methanol or ethanol fuel used for evaporative emission testing shall meet the applicable specifications set forth in section 2292.2, title 13, CCR, (Specifications for M-85 Fuel Methanol) or section 2292.4 (Specifications for E-85 Fuel Ethanol) and gasoline meeting the specifications of §1065.710, as modified in §1065.710 subparagraph 2, above, such that the final blend is composed of either 35 volume percent methanol (± 1.0 volume percent of total blend) for methanol-fueled vehicles or 10 volume percent ethanol (± 1.0 volume percent of total blend) for ethanol-fueled vehicles. Alternative alcohol-gasoline blends may be used in place of M35 or E10 if demonstrated to result in equivalent or higher evaporative emissions, subject to prior approval of the Executive Officer.

2.4 **Additive requirements.** Fuel additives and ignition improvers intended for use in alcohol test fuels shall be subject to the approval of the Executive Officer. In order for such approval to be granted, a manufacturer must demonstrate that emissions will not be adversely affected by the use of the fuel additive or ignition improver.

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As Amended: September 2, 2015
Date of Hearing: October 23, 2014
Subpart I – Testing with Oxygenated Fuels

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Subpart J – Field Testing and Portable Emission Measurement Systems

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Subpart K – Definitions and Other Reference Information


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