APPENDIX C

State of California
AIR RESOURCES BOARD

PROPOSED

Zero-Emission Powertrain Certification Amendments to

CALIFORNIA GREENHOUSE GAS EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 2014 AND SUBSEQUENT MODEL HEAVY-DUTY VEHICLES

Adopted: October 21, 2014
Amended: [INSERT DATE OF AMENDMENT OF HD PHASE 2]
Amended: [INSERT DATE OF AMENDMENT]

Note: In the document below, the existing language, as adopted October 21, 2014, is shown in plain text. The amendments being proposed by this rulemaking and subject to comment are shown in underline to indicate additions and strikeout to indicate deletions. The amendments to these regulations that were approved by the Board on September 27, 2018, as part of the “Proposed California Greenhouse Gas Emissions Standards for Medium- and Heavy-Duty Engines and Vehicles and Proposed Amendments to the Tractor-Trailer GHG Regulation” (HD Phase 2), but which have not yet been approved by the Office of Administrative Law are shown in dotted underline to indicate additions and dotted underline strikeout to indicate deletions. The dotted underline and dotted underline strikeout text is presented for context and completeness only and is not subject to comment in this proposal. “[No change]” indicates federal provisions that are incorporated herein without change.

Date of Release: December 31, 2018
Date of Hearing: February 21, 2019
NOTE: This document is incorporated by reference in section 95663(d), title 17, California Code of Regulations (CCR). It contains the majority of the requirements necessary for greenhouse gas certification of a heavy-duty vehicle for sale in California. However, reference is made in these test procedures to other California Air Resources Board (ARB) documents that contain certification requirements for heavy-duty engines, and vehicles, and zero-emission powertrains. Note that this list of documents is not inclusive of all necessary requirements to complete an application for certification. The following documents are designed to be used in conjunction with this document. They include:

1. “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles,” as last amended October 21, 2014 (incorporated by reference in sections 1956.8(b), title 13, CCR);

2. “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles,” as last amended October 21, 2014 (incorporated by reference in sections 1956.8(d), title 13, CCR);


4. “California Certification and Installation Procedures for Medium and Heavy-Duty Vehicle Hybrid Conversion Systems,” as adopted September 1, 2017 (incorporated by reference in section 2208.2(a), title 13, CCR);

5. “California Standards and Test Procedures for New 2021 and Subsequent Model Heavy-Duty Zero-Emission Powertrains,” as adopted (incorporated by reference in section 1956.8(a)(8), title 13, CCR);

# Table of Contents

**PART 86 – CONTROL OF EMISSIONS FROM NEW AND IN-USE HIGHWAY VEHICLES AND ENGINES** …………………………………………………………………………………..1

Subpart S – General Compliance Provisions for Control of Air Pollution from New and In-Use Light-Duty Vehicles, Light-Duty Trucks, and Heavy-Duty Vehicles …1

86.1819-14 Greenhouse gas emission standards for heavy-duty vehicles …………………………………1

**PART 1037 – CONTROL OF EMISSIONS FROM NEW HEAVY-DUTY MOTOR VEHICLES** …………………………………………………………………………………………….…….........7

Subpart A – Overview and Applicability ……………………………………………………………..7

1037.1 Applicability……………………………………………………………………………………….. 7

1037.2 Who is responsible for compliance? ……………………………………………………………..7

1037.5 Excluded vehicles. …………………………………………..……………………………..…….7

1037.10 How is this part organized? ……………………………………………………..……………….7

1037.15 Do any other regulation parts apply to me? …………………………………………..………….8

1037.30 Submission of information. ………………………………………………...………………………8

Subpart B – Emission Standards and Related Requirements ……………………….8

1037.101 Overview of emission standards for heavy-duty vehicles. ……………………………………….8

1037.102 Exhaust emission standards for NOX, HC, PM, and CO. ………………………..........................9

1037.103 Evaporative and refueling emission standards. ……………………………………………….9

1037.104 Exhaust emission standards for CO2, CH4, and N2O for chassis-certified heavy-duty vehicles at or below 14,000 pounds GVWR. …………………………………………………………..9

1037.105 Exhaust emission standards for CO2 emission standards for vocational vehicles. …………….9

1037.106 Exhaust emission standards for CO2 for tractors above 26,000 pounds GVWR. …………………10

1037.107 Emission standards for trailers………………………………………………………………………..10

1037.115 Other requirements…………………………………………………………………………………..10

1037.120 Emission-related warranty requirements…………………………………………………..…………16

1037.125 Maintenance instructions and allowable maintenance……………………………………..16

1037.130 Assembly instructions for secondary vehicle manufacturers…………………………………16

1037.135 Labeling………………………………………………………………………………………………16

1037.140 Curb weight and roof height. Classifying vehicles and determining vehicle parameters…17

1037.150 Interim provisions……………………………………………………………………………………17

Subpart C – Certifying Vehicle Families

1037.201 General requirements for obtaining a certificate of conformity……………………………19

1037.205 What must I include in my application? October 25, 2016…………………………………….19

1037.210 Preliminary approval before certification………………………………………………………19

1037.211 Preliminary approval for manufacturers of aerodynamic devices…………………………..19

1037.220 Amending maintenance instructions……………………………………………………………..19

1037.225 Amending applications for certification………………………………………………………..19

1037.230 Vehicle families, sub-families, and configurations…………………………………………….19

1037.231 Powertrain families……………………………………………………………………………………19

1037.232 Axle and transmission families…………………………………………………………………..19

1037.235 Testing requirements for certification……………………………………………………………19

1037.241 Demonstrating compliance with exhaust emission standards for greenhouse gas pollutants…………………………………………………………………………………..19

C-ii
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1037.243</td>
<td>Demonstrating compliance with evaporative emission standards</td>
<td>20</td>
</tr>
<tr>
<td>1037.250</td>
<td>Reporting and recordkeeping</td>
<td>20</td>
</tr>
<tr>
<td>1037.255</td>
<td>What decisions may EPAARB make regarding my certificate of conformity?</td>
<td>21</td>
</tr>
<tr>
<td>1037.301</td>
<td>Overview of measurements related to GEM inputs in a selective enforcement audit</td>
<td>21</td>
</tr>
<tr>
<td>1037.305</td>
<td>Audit procedures for tractors-aerodynamic testing</td>
<td>21</td>
</tr>
<tr>
<td>1037.310</td>
<td>Audit procedures for trailers</td>
<td>21</td>
</tr>
<tr>
<td>1037.315</td>
<td>Audit procedures related to powertrain testing</td>
<td>21</td>
</tr>
<tr>
<td>1037.320</td>
<td>Audit procedures for axles and transmissions</td>
<td>21</td>
</tr>
<tr>
<td>1037.301</td>
<td>Audit procedures for tractors-aerodynamic testing</td>
<td>21</td>
</tr>
<tr>
<td>1037.305</td>
<td>Audit procedures for tractors-aerodynamic testing</td>
<td>21</td>
</tr>
<tr>
<td>1037.310</td>
<td>Audit procedures for trailers</td>
<td>21</td>
</tr>
<tr>
<td>1037.315</td>
<td>Audit procedures related to powertrain testing</td>
<td>21</td>
</tr>
<tr>
<td>1037.320</td>
<td>Audit procedures for axles and transmissions</td>
<td>21</td>
</tr>
<tr>
<td>1037.401</td>
<td>General provisions</td>
<td>21</td>
</tr>
<tr>
<td>1037.501</td>
<td>General testing and modeling provisions</td>
<td>21</td>
</tr>
<tr>
<td>1037.510</td>
<td>Duty-cycle exhaust testing</td>
<td>21</td>
</tr>
<tr>
<td>1037.515</td>
<td>Determining CO2 emissions to show compliance for trailers</td>
<td>21</td>
</tr>
<tr>
<td>1037.520</td>
<td>Modeling CO2 emissions to show compliance for vocational vehicles and tractors</td>
<td>21</td>
</tr>
<tr>
<td>1037.5245</td>
<td>Aerodynamic measurements for tractors</td>
<td>21</td>
</tr>
<tr>
<td>1037.526</td>
<td>Aerodynamic measurements for trailers</td>
<td>21</td>
</tr>
<tr>
<td>1037.527</td>
<td>Aerodynamic measurements for vocational vehicles</td>
<td>21</td>
</tr>
<tr>
<td>1037.528</td>
<td>Coastdown procedures for calculating drag area (CdA)</td>
<td>21</td>
</tr>
<tr>
<td>1037.530</td>
<td>Wind-tunnel procedures for calculating drag area (CdA)</td>
<td>21</td>
</tr>
<tr>
<td>1037.532</td>
<td>Using computational fluid dynamics to calculate drag area (CdA)</td>
<td>21</td>
</tr>
<tr>
<td>1037.534</td>
<td>Constant-speed procedure for calculating drag area (CdA)</td>
<td>21</td>
</tr>
<tr>
<td>1037.52540</td>
<td>Special procedures for testing hybrid vehicles with hybrid power take-off</td>
<td>22</td>
</tr>
<tr>
<td>1037.550</td>
<td>Powertrain testing</td>
<td>22</td>
</tr>
<tr>
<td>1037.551</td>
<td>Engine-based simulation of powertrain testing</td>
<td>22</td>
</tr>
<tr>
<td>1037.5505</td>
<td>Special procedures for testing post-transmission Phase 1 hybrid systems</td>
<td>22</td>
</tr>
<tr>
<td>1037.560</td>
<td>Axle efficiency test</td>
<td>22</td>
</tr>
<tr>
<td>1037.565</td>
<td>Transmission efficiency test</td>
<td>22</td>
</tr>
<tr>
<td>1037.601</td>
<td>What General compliance provisions apply to these vehicles?</td>
<td>22</td>
</tr>
<tr>
<td>1037.605</td>
<td>Installing engines certified to alternate standards for specialty vehicles</td>
<td>23</td>
</tr>
<tr>
<td>1037.610</td>
<td>Vehicles with innovative off-cycle technologies</td>
<td>23</td>
</tr>
<tr>
<td>1037.615</td>
<td>Hybrid vehicles and other advanced technologies</td>
<td>23</td>
</tr>
<tr>
<td>1037.620</td>
<td>Responsibilities for multiple manufacturers</td>
<td>23</td>
</tr>
<tr>
<td>1037.621</td>
<td>Delegated assembly</td>
<td>24</td>
</tr>
<tr>
<td>1037.622</td>
<td>Shipments of incomplete partially complete vehicles to secondary vehicle manufacturers</td>
<td>24</td>
</tr>
<tr>
<td>1037.630</td>
<td>Special purpose tractors</td>
<td>24</td>
</tr>
<tr>
<td>1037.631</td>
<td>Exemption for vocational vehicles intended for off-road use</td>
<td>24</td>
</tr>
<tr>
<td>1037.635</td>
<td>Glider kits and glider vehicles</td>
<td>24</td>
</tr>
<tr>
<td>1037.640</td>
<td>Variable vehicle speed limiters</td>
<td>24</td>
</tr>
<tr>
<td>1037.645</td>
<td>In-use compliance with family emission limits (FELs)</td>
<td>24</td>
</tr>
<tr>
<td>1037.650</td>
<td>Tire manufacturers</td>
<td>24</td>
</tr>
<tr>
<td>1037.655</td>
<td>Post-useful life vehicle modifications</td>
<td>24</td>
</tr>
<tr>
<td>1037.660</td>
<td>Automatic engine shutdown systems Idle reduction technologies</td>
<td>24</td>
</tr>
<tr>
<td>1037.665</td>
<td>Production and in-use tractor testing</td>
<td>25</td>
</tr>
</tbody>
</table>

Date of Release: December 31, 2018
Date of Hearing: February 21, 2019
Subpart H – Averaging, Banking, and Trading for Certification

1037.701 General provisions
1037.705 Generating and calculating emission credits
1037.710 Averaging
1037.715 Banking
1037.720 Trading
1037.725 What must I include in my application for certification?
1037.730 ABT reports
1037.735 Recordkeeping
1037.740 Restrictions for using emission credits
1037.745 End-of-year CO2 credit deficits
1037.750 What can happen if I do not comply with the provisions of this subpart?

1. Subparagraphs (a) through (b). [No change.]

2. Amend subparagraph (c) as follows: ARB may void the Executive Order for a vehicle family if you fail to keep records, send reports, or give us information we request.

3. Subparagraph (d). [No change.]

1037.755 Information provided to the Department of Transportation [n/a]

Subpart I – Definitions and Other Reference Information

1037.801 Definitions
1037.805 Symbols, abbreviations, and acronyms, and abbreviations
1037.810 Incorporation by reference
1037.815 Confidential information
1037.820 Requesting a hearing
1037.825 Reporting and recordkeeping requirements

Appendix I to Part 1037—Heavy-duty Transient Chassis Test Cycle

Appendix II to Part 1037—Power Take-Off Test Cycle

Appendix III to Part 1037—Emission Control Identifiers

PART 1066 – VEHICLE TESTING PROCEDURES

Subpart A – Applicability and General Provisions

1066.1 Applicability. April 28, 2014
1066.2 Submitting information to EPAARB under this part. April 28, 2014
1066.5 Overview of this part 1066 and its relationship to the standard-setting part. April 28, 2014
1066.10 Other procedures. February 19, 2015
1066.15 Overview of test procedures. April 28, 2014
1066.20 Units of measure and overview of calculations. April 28, 2014
1066.25 Recordkeeping. April 28, 2014

Subpart B – Equipment, Measurement Instruments, Fuel, and Analytical Gas Specifications

1066.101 Overview. April 28, 2014
1066.105 Ambient controls and vehicle cooling fans
<table>
<thead>
<tr>
<th>Section</th>
<th>Date and Notes</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment specifications for emission sampling systems</td>
<td></td>
<td>33</td>
</tr>
<tr>
<td>Measurement instruments. April 28, 2014</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Data updating, recording, and control. February 19, 2015</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Measurement instrument calibrations and verifications. April 28, 2014</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Linearity verification. October 25, 2016</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Diluted exhaust flow calibration. October 25, 2016</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Test fuel, engine fluids, analytical gases, and other calibration standards. April 28, 2014</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Analyzer interference and quench verification limit. April 28, 2014</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td><strong>Subpart C – Dynamometer Specifications</strong></td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Dynamometer overview. April 28, 2014</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Dynamometers</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Summary of verification and calibration procedures for chassis dynamometers. April 28, 2014</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Linearity verification for chassis dynamometer systems. April 28, 2014</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Roll runout and diameter verification procedure. April 28, 2014</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Time verification procedure. April 28, 2014</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Speed verification procedure</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Torque transducer verification and calibration. April 28, 2014</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Response time verification</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Base inertia verification</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Parasitic loss verification. February 19, 2015</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Parasitic friction compensation evaluation</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Acceleration and deceleration verification</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Unloaded coastdown verification</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Daily dynamometer readiness verification</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Verification of speed accuracy for the driver’s aid. April 28, 2014</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td><strong>Subpart D – Coastdown</strong></td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Overview of coastdown road-load determination procedures</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Procedures for specifying road-load forces for motor vehicles at or below 14,000 pounds GVWR</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Coastdown procedures for heavy-duty vehicles above 14,000 pounds GVWR</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td><strong>Subpart E – Preparing Vehicles Preparation and Running an Exhaust Emission Test</strong></td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>Overview. April 28, 2014</td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>Vehicle preparation and preconditioning. April 28, 2014</td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>Dynamometer test procedure. October 25, 2016</td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>Pre test verification procedures and pre test data collection. Test preparation. February 19, 2015</td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>Engine starting and restarting</td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>Performing emission tests. October 25, 2016</td>
<td></td>
<td>35</td>
</tr>
<tr>
<td><strong>Subpart F – Electric Vehicles and Hybrids Electric Vehicles</strong></td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>Overview. February 19, 2015</td>
<td></td>
<td>35</td>
</tr>
<tr>
<td><strong>Subpart G – Calculations</strong></td>
<td></td>
<td>36</td>
</tr>
<tr>
<td>Overview. April 28, 2014</td>
<td></td>
<td>36</td>
</tr>
<tr>
<td>Mass-based and molar-based exhaust emission calculations. Dilution air background correction. April 28, 2014</td>
<td></td>
<td>36</td>
</tr>
</tbody>
</table>

Date of Release: December 31, 2018
Date of Hearing: February 21, 2019
**Subpart H – Cold Temperature Test Procedures** [n/a].................................36

**Subpart I – Exhaust Emission Test Procedures for Motor Vehicles**..............36

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Date</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1066.801</td>
<td>Applicability and general provisions.</td>
<td>October 25, 2016</td>
<td>36</td>
</tr>
<tr>
<td>1066.805</td>
<td>Road-load power, test weight, and inertia weight class determination.</td>
<td>October 25, 2016</td>
<td>36</td>
</tr>
<tr>
<td>1066.810</td>
<td>Vehicle preparation.</td>
<td>April 28, 2014</td>
<td>36</td>
</tr>
<tr>
<td>1066.815</td>
<td>Exhaust emission test procedures for FTP testing.</td>
<td>October 25, 2016</td>
<td>36</td>
</tr>
<tr>
<td>1066.816</td>
<td>Vehicle preconditioning for FTP testing.</td>
<td>April 28, 2014</td>
<td>36</td>
</tr>
<tr>
<td>1066.820</td>
<td>Composite calculations for FTP exhaust emissions.</td>
<td>October 25, 2016</td>
<td>36</td>
</tr>
<tr>
<td>1066.830</td>
<td>Supplemental Federal Test Procedures; overview.</td>
<td>[n/a]</td>
<td>36</td>
</tr>
<tr>
<td>1066.831</td>
<td>Exhaust emission test procedures for aggressive driving.</td>
<td>[n/a]</td>
<td>36</td>
</tr>
<tr>
<td>1066.835</td>
<td>Exhaust emission test procedure for SC03 emissions.</td>
<td>[n/a]</td>
<td>36</td>
</tr>
<tr>
<td>1066.840</td>
<td>Highway fuel economy test procedure.</td>
<td>April 28, 2014</td>
<td>36</td>
</tr>
<tr>
<td>1066.845</td>
<td>AC17 air conditioning efficiency test procedure.</td>
<td>[n/a]</td>
<td>36</td>
</tr>
</tbody>
</table>

**Subpart J – Evaporative Emission Test Procedures** [n/a].........................36

**Subpart K – Definitions and Other Reference Material**..........................37

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Date</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1066.7011001</td>
<td>Definitions.</td>
<td>February 19, 2015</td>
<td>37</td>
</tr>
<tr>
<td>1066.7051005</td>
<td>Symbols, abbreviations, acronyms, and units of measure.</td>
<td>October 25, 2016</td>
<td>37</td>
</tr>
<tr>
<td>1066.7401010</td>
<td>Incorporation by Reference materials.</td>
<td>October 25, 2016</td>
<td>37</td>
</tr>
</tbody>
</table>

**PART 1068 – GENERAL COMPLIANCE PROVISIONS FOR HIGHWAY, STATIONARY, AND NONROAD PROGRAMS**.....................................................38

**Subpart A – Applicability and Miscellaneous Provisions**.........................38

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Date</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1068.1</td>
<td>Does this part apply to me?</td>
<td>October 25, 2016</td>
<td>38</td>
</tr>
<tr>
<td>1068.20</td>
<td>May ARB enter my facilities for inspections?</td>
<td>October 25, 2016</td>
<td>38</td>
</tr>
<tr>
<td>1068.30</td>
<td>Definitions.</td>
<td>October 25, 2016</td>
<td>38</td>
</tr>
<tr>
<td>1068.35</td>
<td>Symbols, acronyms, and abbreviations.</td>
<td>October 8, 2008</td>
<td>39</td>
</tr>
<tr>
<td>1068.45</td>
<td>General labeling provisions.</td>
<td>October 25, 2016</td>
<td>39</td>
</tr>
</tbody>
</table>

**Subpart E – Selective Enforcement Auditing**.......................................40

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Date</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1068.401</td>
<td>What is a selective enforcement audit?</td>
<td>October 25, 2016</td>
<td>40</td>
</tr>
<tr>
<td>1068.405</td>
<td>What is in a test order?</td>
<td>October 25, 2016</td>
<td>40</td>
</tr>
<tr>
<td>1068.410</td>
<td>How must I select and prepare my engines/equipment?</td>
<td>April 30, 2010</td>
<td>40</td>
</tr>
<tr>
<td>1068.415</td>
<td>How do I test my engines/equipment?</td>
<td>October 25, 2016</td>
<td>40</td>
</tr>
<tr>
<td>1068.420</td>
<td>How do I know when my engine family fails an SEA?</td>
<td>October 25, 2016</td>
<td>40</td>
</tr>
<tr>
<td>1068.425</td>
<td>What happens if one of my production-line engines/equipment exceeds the emission standards?</td>
<td>October 25, 2016</td>
<td>40</td>
</tr>
<tr>
<td>1068.430</td>
<td>What happens if a family fails an SEA?</td>
<td>October 25, 2016</td>
<td>40</td>
</tr>
<tr>
<td>1068.435</td>
<td>May I sell engines/equipment from a family with a suspended certificate of conformity?</td>
<td>October 8, 2008</td>
<td>40</td>
</tr>
<tr>
<td>1068.440</td>
<td>How do I ask ARB to reinstate my suspended certificate?</td>
<td>April 30, 2010</td>
<td>40</td>
</tr>
<tr>
<td>1068.445</td>
<td>When may ARB revoke my certificate under this subpart and how may I sell these engines/equipment again?</td>
<td>October 8, 2008</td>
<td>40</td>
</tr>
<tr>
<td>1068.450</td>
<td>What records must I send to ARB?</td>
<td>October 25, 2016</td>
<td>40</td>
</tr>
<tr>
<td>1068.455</td>
<td>What records must I keep?</td>
<td>October 8, 2008</td>
<td>40</td>
</tr>
</tbody>
</table>

**Date of Release:** December 31, 2018
**Date of Hearing:** February 21, 2019
CALIFORNIA GREENHOUSE GAS EXHAUST EMISSION STANDARDS AND
TEST PROCEDURES FOR 2014 AND SUBSEQUENT MODEL
HEAVY-DUTY VEHICLES

The following provisions of Subpart S, Part 86, Subparts A through I, Part 1037, and
Subparts A through HK, Part 1066, and Subparts A and E, Part 1068, Title 40,
Code of Federal Regulations (CFR), as adopted by the U.S. Environmental Protection
Agency on September 15, 2011, or amended by the U.S. Environmental Protection
Agency on the subsequent date set forth next to the applicable section listed below, and
only to the extent they pertain to the greenhouse gas emission testing and compliance
of greenhouse gas exhaust emissions from medium- and heavy-duty vehicles, are
adopted and incorporated herein by this reference as the “California Greenhouse Gas
Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model
Heavy-Duty Vehicles,” except as altered or replaced by the provisions set forth below.

References in these test procedures to specific sections of the CFR maintain the
same numbering system employed in the CFR. In cases where the entire CFR section
is incorporated by reference with no modifications, the notation “[No change.]” is used.
In cases where the federal requirements are modified by California requirements, the
notation “Amend (or delete) subparagraph (__) as follows:” is used. If the federal
requirement is not applicable, the notation “[n/a]” is used. In cases where there are
California only requirements, the additional California requirements are noted in a
separate subsection.

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

Subpart S – General Compliance Provisions for Control of Air Pollution from New
and In-Use Light-Duty Vehicles, Light-Duty Trucks, and Heavy-Duty Vehicles

86.1819-14  Greenhouse gas emission standards for heavy-duty vehicles. October 25,
2016.


1. Add the following to the introductory paragraph: The test procedures to
determine compliance with these emission standards are described in “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.”

2. Subparagraphs (a) through (k)(6). [No change.]
3. Amend subparagraph (k)(7) as follows: Advanced-technology credits. Provisions for advanced-technology credits apply as described in 40 CFR §1037.615.

(i) If you generate credits from Phase 1 vehicles certified with advanced technology, you may multiply these credits by 1.5.

(ii) If you generate credits from model year 2027 and earlier Phase 2 vehicles certified with advanced technology, you may multiply these credits by 3.5 for plug-in hybrid electric vehicles (PHEVs), 4.5 for electric vehicles, and 5.5 for fuel cell vehicles, unless you are required to produce the advanced technology vehicle by another ARB regulation. If you are required to produce the advanced technology vehicle by another ARB regulation, you may not multiply the credits generated by those vehicles by the advanced technology credit (ATC) multipliers listed above. The Phase 2 ATC multiplier of 3.5 for PHEVs, inclusive of PHEVs with electric power take-off (ePTO), is applicable only if the PHEV complies with both subparagraphs (k)(7)(ii)(A) and (B) of this section:

(A) No increase in oxides of nitrogen (NOx) emissions compared to an equivalent conventional vehicle tested in accordance with §1066.501.B., as modified by these test procedures.

(B) All-electric range (AER) as specified in the table below, tested in accordance with §1066.501.B., as modified by these test procedures.

<table>
<thead>
<tr>
<th>Vehicle Model Year</th>
<th>AER (miles)</th>
<th>ATC Multiplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017 - 2020</td>
<td>Slow-Charge</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Fast-Charge</td>
<td>10+</td>
</tr>
<tr>
<td>2021 - 2023</td>
<td>Slow-Charge</td>
<td>10+</td>
</tr>
<tr>
<td></td>
<td>Fast-Charge</td>
<td>10+</td>
</tr>
<tr>
<td>2024 - 2026</td>
<td>Slow-Charge</td>
<td>10+</td>
</tr>
<tr>
<td></td>
<td>Fast-Charge</td>
<td>15+</td>
</tr>
<tr>
<td>2027+</td>
<td>Slow-Charge</td>
<td>20+</td>
</tr>
<tr>
<td></td>
<td>Fast-Charge</td>
<td>20+</td>
</tr>
</tbody>
</table>

Notes:
1. Slow-charge refers to Level 1 and Level 2 chargers with electrical circuit rated up to 240 volts AC, up to 80 amps, and 19.2 kilowatts.
2. Fast-charge compatible PHEVs must: 1) be capable of charging from 15 percent state-of-charge to 85 percent state-of-charge within one-half hour (0.5hr); and 2) demonstrate that typical operating time is at least 8 times (8x) typical charging time (i.e., a vehicle must be capable of operating for 8 minutes for each minute of charge time).
3. If the PHEV AER is less than that specified in the AER column for the respective vehicle model year, an ATC multiplier of 1.5 would be applicable if the PHEV complies only with subparagraph (k)(7)(i)(A) of this section.

(iii) ATC from Phase 1 vehicles may be used to show compliance with any standards of this part or 40 CFR part 1036 or part 1037, subject to the restrictions in 40 CFR §1037.740. Similarly, you may use up to 60,000 Mg per year of advanced-technology credits generated under 40 CFR §§1036.615 or 1037.615 (from Phase 1 vehicles) to demonstrate compliance with the CO2 standards in this section. Include vehicles generating credits in separate fleet-average calculations (and exclude them from your conventional fleet-average calculation). You must first apply these advanced-
technology vehicle credits to any deficits for other vehicles in the averaging set before
applying them to other averaging sets.

4. Subparagraphs (k)(8) through (k)(10). [No change.]

B. California Provisions.

1. In the application for certification, the information specified in subparagraphs 1.1
to 1.3 below must be provided to demonstrate compliance with the air conditioning
leakage standard in or 40 CFR §86.1819-14(h), except when the air conditioning
system uses a refrigerant with a global warming potential (GWP) of 150 or less, in
which case subsection B.2 applies, or when the projected volume of vehicles that
are produced and delivered for sale in California in a given concerned air
conditioning platform is less than twenty. For the purpose of this subparagraph B.1,
an air conditioning platform is one air conditioning configuration, or a group of air
conditioning configurations that can be represented by one “worst-case” scenario air
conditioning configuration chosen according to subparagraph B.1.3.

1.1. Cover letter and summary table. The table must include vehicle make,
vehicle model, vehicle model year, vehicle family, vehicle subcategory, vehicle
weight class, averaging set, manufacturer-assigned air conditioning platform
identification number, projected volume of vehicles produced and delivered for
sale in California, refrigerant type, refrigerant capacity (rounded to the nearest
one gram), refrigerant leak rate (rounded to the nearest one-tenth of a gram),
and percent leak rate (rounded to the nearest one-hundredth of one percent) of
the air conditioning system.

1.2. Air conditioning system schematic. The schematic must show the
topological layout of the air conditioning system components (compressor, heat
exchangers, expansion device, hoses, metal pipelines, and joints) with respect to
the system. Systems with major variations must be illustrated by separate
schematics. The schematic must indicate the air conditioning platform or
platforms it represents. For the purpose of this requirement, “major variation”
refers to a different topological layout of compressor, heat exchangers,
expansion device, hoses, metal pipelines, or joints.

1.3. SAE J2727 spreadsheets. Each spreadsheet must indicate the air
conditioning platform or platforms it represents. A “worst-case” scenario air
conditioning configuration may be chosen, using a technical assessment or good
engineering judgment, to represent all air conditioning configurations in one or
more air conditioning platforms, only under one of the following two
circumstances:

1.3.1. If such air conditioning configurations have the same specifications
in the following aspects: 1) numbers and types of joints, 2) lengths, inner
diameters, and permeation rates of flexible hoses, and 3) numbers and types of
compressor seals;
1.3.2. If such air conditioning configurations have similar refrigerant capacity, and differ in only one of the following aspects: 1) numbers and/or types of joints, 2) lengths, inner diameters, and/or permeation rates of flexible hoses, or 3) numbers and/or types of compressor seals. Refrigerant capacities are considered to be similar in this subsection if they are within ten grams of each other, except when the air conditioning configurations differ only in the hose lengths, in which case refrigerant capacities are considered to be similar if they are within one hundred grams of each other.

2. A vehicle produced and delivered for sale in California is eligible for low-GWP refrigerant credit if it uses a refrigerant with a GWP of 150 or less in its motor vehicle air conditioning system. The vehicle must comply with the air conditioning leakage standard in subparagraph (h) in the Federal Provisions of this section. Credits may be calculated according to subparagraph (d) in the Federal Provisions of this section, as modified by these test procedures and may only be used to offset emission deficits under this section. You may certify using both the provisions of this section and the off-cycle technology provisions of §86.1819-14(d)(13), provided you do not double-count emission benefits.

3. If you certify vehicles utilizing the provisions of subparagraph (k)(7) of this section, as modified by these test procedures, or of subsection B.2. of this section, as modified by these test procedures, you must use the compliance provisions in subparagraph (d) of this section to show California compliance. You must provide reports for the vehicle family or subfamily to the Executive Officer according to the Federal Provisions of this section, using projected and actual volumes of vehicles produced and delivered for sale in California for the model year. Show your net balance of emission credits for these vehicle families. Federal credits may be used to offset any emission deficits, in which case the federal credits must be retired if used and may no longer be used by anyone to demonstrate compliance with any ARB/U.S. Environmental Protection Agency emission standards. Federal credits from vehicles produced and delivered for sale outside of California that do not meet the requirements of subparagraphs (k)(7)(ii), as modified by these test procedures, may not be used to offset the emission deficits. For PHEVs’ emission deficits due to the difference between federal and applicable California ATC calculations, as specified in subsection 3.1. of this section, you have the option to retire those federal credits in the amount of that difference or to otherwise offset those deficits. Those retired credits may no longer be used by anyone to demonstrate compliance with any ARB/U.S. Environmental Protection Agency emission standards.

3.1. You may generate a 3.5 ATC multiplier for Phase 2 PHEVs, inclusive of PHEVs with ePTO, only if you demonstrate that the PHEVs do not emit increased NOx emissions compared to similar conventional vehicles pursuant to subparagraph (k)(7)(ii)(A) of this section, as modified by these procedures, and that the PHEVs comply with the all-electric range requirement pursuant to subparagraph (k)(7)(ii)(B) of this section, as modified by these procedures. If the PHEVs only comply with the
no-NOx increase requirement but not the all-electric range requirement, you may only generate a 1.5 ATC multiplier. If the PHEVs do not comply with the no-NOx increase requirement, you may not generate an ATC.

If you certify PHEVs federally using the 3.5 multiplier for ATC but these PHEVs do not meet the requirements of subparagraphs (k)(7)(ii)(A) and/or (B) of this section, as modified by these procedures, you will generate an emission deficit based on the difference between federal and applicable California ATC calculations for PHEVs produced and delivered for sale in California, as applicable. You must identify in the reports any ATC generated from PHEVs pursuant to subparagraph (k)(7) of this section and calculate any emission deficits for PHEVs produced and delivered for sale in California, as applicable.

3.2. For every vehicle that is eligible for the low-GWP refrigerant credit according to subparagraph B.2. of this section, modified by these test procedures, calculate the emission credit for each participating family or subfamily as follows, and round it to the nearest one-tenth of a Mg.

Low-GWP Refrigerant Credit (Mg) = Per Year Credit × Volume × Useful Life

Where:

Per Year Credit = amount of credit a vehicle is eligible for every year of its useful life according to the Low-GWP Countdown Schedule of Per Year Credit table.

Volume = volume of vehicles produced and delivered for sale in California of the vehicle subfamily.

Useful Life = useful life of the vehicles, in years, as described in CCR, title 13, Section 2112.

If the Low-GWP Volume Fraction for the vehicle type and model year to which the credit-eligible vehicle belongs is less than 20%, the Per Year Credit shall be 0.56 Mg per vehicle per year, or 1.28% of the annual tailpipe CO₂ emissions allowed by the CO₂ standards for internal combustion vehicles of the vehicle subcategory and model year to which the credit-eligible vehicle belongs, whichever is less. When the Low-GWP Volume Fraction for the vehicle type and model year to which the credit-eligible vehicle belongs reaches or exceeds 20% for the first time, the above credit levels shall be allowed for that vehicle type for the subsequent four model years. After the subsequent four model years, the Per Year Credit shall be 0.31 Mg per vehicle per year, or 0.71% of the annual tailpipe CO₂ emissions allowed by the internal combustion engine CO₂ standard for the vehicle subcategory and model year to which the credit-eligible vehicle belongs, whichever is less. The countdown of the credit schedule is illustrated in the table below, where MY1 is the first model year for which the Low-GWP Volume Fraction for a particular vehicle type reaches...
or exceeds 20%, and MY2 through MY6 and beyond are the consecutive model years subsequent to MY1.

| Low-GWP Countdown Schedule of Per Year Credit |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| MY1             | MY2             | MY3             | MY4             | MY5             | MY6+            |
| 0.56 Mg/veh./yr.| 0.56 Mg/veh./yr.| 0.56 Mg/veh./yr.| 0.56 Mg/veh./yr.| 0.56 Mg/veh./yr.| 0.31 Mg/veh./yr.|

Or

1.28% 1.28% 1.28% 1.28% 1.28% 0.71% of annual tailpipe CO₂ emissions allowed by the internal combustion engine CO₂ standard for the vehicle subcategory and MY, whichever is less.

For the purpose of this subsection, vehicle types are:

- Vocational, classes 2b-5
- Vocational, classes 6 and 7
- Vocational, class 8
- Tractor, class 7
- Tractor, class 8, day cab
- Tractor, class 8, sleeper cab
- Tractor, heavy haul
- HD pickup trucks and vans, classes 2b and 3
- Custom chassis school bus
- Custom chassis motor home
- Custom chassis coach bus
- Custom chassis other bus
- Custom chassis refuse hauler
- Custom chassis concrete mixer
- Custom chassis mixed-use vehicle
- Custom chassis emergency vehicle

Low-GWP Volume Fraction for a particular vehicle type and a particular model year is the ratio of the actual volume of low-GWP refrigerant credit-eligible vehicles of that vehicle type and that model year produced and delivered for sale in California by all manufacturers to the total actual volume of vehicles of that vehicle type and that model year produced and delivered for sale in California by all manufacturers. Low-GWP Volume Fraction is rounded to the nearest one percent.
PART 1037 – CONTROL OF EMISSIONS FROM NEW HEAVY-DUTY MOTOR VEHICLES

Subpart A – Overview and Applicability

1037.1 Applicability. October 25, 2016.
A. Federal Provisions [No change.]
   1. Subparagraph (a) [No change.]
   2. Delete subparagraph (b) and replace with the following: New alternative fuel conversions must be certified through the same certification procedures as for new vehicles. Aftermarket alternative fuel conversions must be certified according to the “California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines.”

B. California provisions.
   1. These regulations are applicable to all medium- and heavy-duty vehicles that are subject to the Greenhouse Gas Emission Requirements for New 2014 and Subsequent Model Heavy-Duty Vehicles Phase 1 and Phase 2 emission standards as specified in title 17, California Code of Regulations sections 95660 through 95664.
   2. Any reference to vehicle or engine sales or vehicle or engine production volume throughout the United States shall mean vehicle or engine sales or vehicle or engine volume in California, except in 40 CFR Part 1037, Subpart H, Averaging, Banking, and Trading for Certification (averaging, banking, and trading compliance calculations will be based on United States-directed sales except where noted in the California Provisions).
   3. Regulations concerning U.S. EPA hearings, U.S. EPA inspections, specific language on the Certificate of Conformity, and citations to federal penalty provisions in the Code of Federal regulations or the federal Clean Air Act shall not be applicable to these procedures, except where specifically noted.

1037.2 Who is responsible for compliance? October 25, 2016.

1037.5 Excluded vehicles. October 25, 2016.
1. Subparagraphs (a) through (d). [No change.]
2. Amend subparagraph (e) as follows: Vehicles subject to the heavy-duty greenhouse gas standards of 40 CFR part 86. See §86.1819-14, as modified by these procedures, for greenhouse gas standards that apply for these vehicles. For test procedures applicable to such vehicles, see “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.” This generally
applies for complete heavy-duty vehicles at or below 14,000 pounds GVWR.

3. Subparagraphs (f) through (i). [No change.]

1037.10 How is this part organized? October 25, 2016.
1037.15 Do any other regulation parts apply to me? June 17, 2013.

Subpart B – Emission Standards and Related Requirements


1. Subparagraphs (a) through (b) introductory paragraph. [No change.]
2. Subparagraph (b)(1). [n/a; see “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles” and “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles” for California criteria exhaust emission standards.]
3. Amend subparagraph (b)(2) by adding the following: For the 2014 through 2022 model years, a manufacturer may elect to demonstrate compliance with sections §1037.104 through §1037.115 for its entire applicable vehicle fleet by demonstrating compliance with the 2014 MY National Heavy-Duty Engine and Vehicle Greenhouse Gas Program Phase 1 program, if it meets the criteria identified below.
   (1) A manufacturer that selects compliance with this option must notify the Executive Officer of that selection, in writing, prior to the start of the applicable model year or December 1, 2014, whichever is later;
   (2) The manufacturer must submit to ARB all data that the manufacturer submitted to U.S. Environmental Protection Agency in accordance with the reporting requirements as required under 40 CFR §1037.205, §1037.250 and §1037.730, for demonstrating compliance with the 2014 MY National Heavy-Duty Engine and Vehicle Greenhouse Gas Program Phase 1 and the U.S. Environmental Protection Agency determination of compliance. With the exception of the 2014 model year, all such data must be submitted within 30 days of receipt of the U.S. Environmental Protection Agency Certificate of Conformity or of the date of submission to the U.S. Environmental Protection Agency, whichever is later, for each model year that a manufacturer selects compliance with this option;
   (3) The manufacturer must provide to the Executive Officer separate numbers for each subfamily of heavy-duty vehicles produced and delivered for sale in California each model year and all values used in calculating positive or negative emission credits in §1037.730.
4. Subparagraph (b)(3). [No change.]
5. Subparagraph (b)(4). [n/a; see “California Evaporative Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles” and “California Evaporative Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles” for California criteria evaporative emission standards.]

Date of Release: December 31, 2018
Date of Hearing: February 21, 2019
and Test Procedures for 2001 and Subsequent Model Motor Vehicles” for California fuel evaporative emission standards.]

6. Subparagraph (c). [No change.]

1037.102 Exhaust emission standards for NO\textsubscript{x}, HC, PM, and CO. October 25, 2016.

1. Amend the introductory paragraph as follows: See the “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles,” and the “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles,” for the exhaust emission standards for NO\textsubscript{x}, HC, PM, and CO that apply for heavy-duty vehicles.

1037.103 Evaporative and refueling emission standards. [n/a; see “California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles” for California fuel evaporative emission standards, and see “California Refueling Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles” for California refueling emission standards.]

1037.104 Exhaust emission standards for CO\textsubscript{2}, CH\textsubscript{4}, and N\textsubscript{2}O for chassis-certified heavy-duty vehicles at or below 14,000 pounds GVWR. September 12, 2013. October 25, 2016.

1037.105 Exhaust emission standards for CO\textsubscript{2} emission standards for vocational vehicles. October 25, 2016.

1. Subparagraphs (a) through (h) introductory paragraph. [No change.]

2. Amend subparagraph (h)(1) as follows:

(1) The following alternative emission standards apply by vehicle type and model year as follows:

<table>
<thead>
<tr>
<th>Vehicle Type(^1)</th>
<th>Assigned Vehicle Service Class</th>
<th>MY 2021-2026</th>
<th>MY 2027+</th>
</tr>
</thead>
<tbody>
<tr>
<td>School bus</td>
<td>Medium HDV</td>
<td>291</td>
<td>271</td>
</tr>
<tr>
<td>Motor home</td>
<td>Medium HDV</td>
<td>228</td>
<td>226</td>
</tr>
<tr>
<td>Coach bus</td>
<td>Heavy HDV</td>
<td>210</td>
<td>205</td>
</tr>
<tr>
<td>Other bus(^2)</td>
<td>Heavy HDV</td>
<td>300</td>
<td>286</td>
</tr>
<tr>
<td>Refuse hauler</td>
<td>Heavy HDV</td>
<td>313</td>
<td>298</td>
</tr>
<tr>
<td>Concrete mixer</td>
<td>Heavy HDV</td>
<td>319</td>
<td>316</td>
</tr>
</tbody>
</table>

Date of Release: December 31, 2018
Date of Hearing: February 21, 2019
Mixed-use vehicle | Heavy HDV | 319 | 316
---|---|---|---
Emergency vehicle | Heavy HDV | 324 | 319

1. Vehicle types are generally defined in §1037.801. "Other bus" includes any bus that is not a school bus or a coach bus. A "mixed-use vehicle" is one that meets at least one of the criteria specified in §1037.631(a)(1) and at least one of the criteria in §1037.631(a)(2), but not both.

2. You may not use the Other bus standard to certify a GHG urban bus unless additional requirements in the California Provisions of §§1037.241 and 1037.701, as modified by these procedures, are met.

3. Subparagraphs (h)(2) through (h)(8). [No change.]

1037.106 Exhaust emission standards for CO₂ for tractors above 26,000 pounds GVWR. October 25, 2016.

A. Federal Provisions. [No change.]

B. California Provisions.

1. In the application for certification, the information specified in subparagraphs 1.1 to 1.3 below must be provided to demonstrate compliance with the air conditioning leakage s in 40 CFR §1037.115(e), except when the air conditioning system uses a refrigerant with a global warming potential (GWP) of 150 or less, in which case subsection B.2 applies, or when the projected volume of vehicles that are produced and delivered for sale in California in a given air conditioning platform is less than twenty, or when the air conditioning system has a capacity above 3000 grams and is designed such that a compliance demonstration using SAE J2727 standard is impossible or impractical, in which case you may ask to use alternative means to demonstrate via an engineering evaluation that your air conditioning system achieves an equivalent level of refrigerant leakage control. For the purpose of this subparagraph B.1, an air conditioning platform is one air conditioning configuration, or a group of air conditioning configurations that can be represented by one "worst-case" scenario air conditioning configuration chosen according to subparagraph B.1.3.

1.1. Cover letter and summary table. The table must include vehicle make, vehicle model, vehicle model year, vehicle family, vehicle subcategory, vehicle weight class, averaging set, manufacturer-assigned air conditioning platform identification number, projected volume of vehicles produced and delivered for sale in California, refrigerant type, refrigerant capacity (rounded to the nearest one gram), refrigerant leak rate (rounded to the nearest one-tenth of a gram), and percent leak rate (rounded to the nearest one-hundredth of one percent) of the air conditioning system.
1.2. Air conditioning system schematic. The schematic must show the topological layout of the air conditioning system components (compressor, heat exchangers, expansion device, hoses, metal pipelines, and joints) with respect to the system. Systems with major variations must be illustrated by separate schematics. The schematic must indicate the air conditioning platform or platforms it represents. For the purpose of this requirement, "major variation" refers to a different topological layout of compressor, heat exchangers, expansion device, hoses, metal pipelines, or joints.

1.3. SAE J2727 spreadsheets. Each spreadsheet must indicate the air conditioning platform or platforms it represents. A "worst-case" scenario air conditioning configuration may be chosen, using a technical assessment or good engineering judgment, to represent all air conditioning configurations in one or more air conditioning platforms, only under one of the following two circumstances:

1.3.1. If such air conditioning configurations have the same specifications in the following aspects: 1) numbers and types of joints, 2) lengths, inner diameters, and permeation rates of flexible hoses, and 3) numbers and types of compressor seals;

1.3.2. If such air conditioning configurations have similar refrigerant capacity, and differ in only one of the following aspects: 1) numbers and/or types of joints, 2) lengths, inner diameters, and/or permeation rates of flexible hoses, or 3) numbers and/or types of compressor seals. Refrigerant capacities are considered to be similar in this subsection if they are within ten grams of each other, except when the air conditioning configurations differ only in the hose lengths, in which case refrigerant capacities are considered to be similar if they are within one hundred grams of each other.

2. A vehicle produced and delivered for sale in California is eligible for low-GWP refrigerant credit if it uses a refrigerant with a GWP of 150 or less in its motor vehicle air conditioning system. The vehicle must comply with the air conditioning leakage standard in subparagraph (e) in the Federal Provisions of this section. Credits may be calculated according to part 1037, subpart H, as modified by these test procedures. You may certify using both the provisions of this section and the off-cycle technology provisions of 40 CFR 1037.610, provided you do not double-count emission benefits.


3.1 Vehicles certifying to the Enhanced Electric and Fuel-Cell Vehicle Certification Procedures in section 1 in the California Provisions of subpart 1037.615 shall meet the following requirements in addition to any requirements required by other parts of these test procedures:

3.1.1 Zero-Emission Powertrain. A vehicle may only be built with a powertrain certified to the "Zero-Emission Powertrain Certification Standards" in section
3.1.2 Malfunction information. A manufacturer shall include the required optical
tell-tales that inform the operator of malfunctioning of the zero-emission
powertrain components. The tell-tales must either conform with SAE J2402,
“Road Vehicles-Symbols for Controls, Indicators, and Tell-Tales,” as last revised
on January 7, 2010, which is incorporated by reference herein, International
Organization for Standardization (ISO) 2575, “Road Vehicles – Symbols for
controls, indicators and tell-tales,” as last revised on July 1, 2010, which is
incorporated by reference herein, or be approved by the Executive Officer.

3.1.3 Trip Meter. For battery-electric and fuel-cell electric vehicles, a resettable
kilowatt-hour-per-mile meter shall be made accessible to the vehicle owner. This
information is not required to be displayed on the vehicle dashboard and may be
accessible through communications to a scan tool or other manufacturer-chosen
method.

3.1.4 Required Access to Diagnostic Communications Tools Compatibility. A
vehicle must be set up to ensure that the diagnostics communications connector
required on a powertrain per Section C.3.1 of the “California Standards and Test
Procedures for New 2021 and Subsequent Model Heavy-Duty Zero-Emission
Powertrains,” is assembled in its proper configuration within the vehicle and
installed as set forth in subsection (h)(2) of 1971.1, title 13, CCR.

3.1.5 Rated Capacity Energy. For battery-electric vehicles, a manufacturer
must display or make readily accessible via a dashboard display, through scan
tool communication or other manufacturer method, to the vehicle owner a
graphical and/or a numerical representation of the rated capacity energy of the
energy storage system as a percent of the original usable battery energy, in 5
percent, or smaller percentage, increments, starting at 100%. This value may be
derived from an on-board testing method active during normal operation (e.g.,
measuring the maximum energy accepted during charge). The same test must
be performed at the time of vehicle certification to provide a baseline value and
the manufacturer must describe the quantification strategy. The vehicle must be
capable of refreshing this value at a minimum once every three months unless
the vehicle is capable of deriving the value immediately upon request of the
vehicle owner.

3.1.6 Availability of Tools. A manufacturer must make available all diagnostic
repair tools to third-party repair facilities in California, incorporating the same
diagnostic, repair and wireless capabilities that such manufacturer makes
available to its internal repair personnel, at a fair and reasonable price. The
manufacturer may require technical training prior to offering tools for sale.
Manufacturers shall not be required to provide unrestricted service information
access to owners and third-party repair facilities for diagnostic, service and repair
information necessary to reset security-related electronic modules or reprogram
the vehicle’s central processing unit. For provisions in subsections 3.1.6 and 3.3, consideration may be given to relevant factors, including, but not limited to, the following when evaluating a fair and reasonable price.

3.1.6.1 The net cost to manufacturer-franchised dealerships or authorized service networks for similar tools or information obtained from manufacturers when accounting for any discounts, rebates, or other incentive programs;

3.1.6.2 The cost to the manufacturer for preparing and distributing the tools or information, excluding any research and development costs incurred in designing the tools and methodology for repair. Amortized capital costs for the preparation and distribution of the tools may be included;

3.1.6.3 The price charged by other manufacturers for similar tools or information;

3.1.6.4 The ability of the average aftermarket technician or shop to afford the tools;

3.1.6.5 The means by which the tools or information are distributed;

3.1.6.6 The extent to which the tools or information are used, which includes the number of users, and frequency, duration, and volume of use; and

3.1.6.7 Inflation.

3.1.7 *Sales Disclosures.* Included in a purchase agreement prior to vehicle sale, a manufacturer shall clearly indicate the warranty coverage period for full replacement along with any prorated coverage periods of the energy storage system, and the following statement, or an alternative statement approved by the Executive Officer, shall be provided, in writing, to the buyer:

“Battery-electric and fuel cell electric vehicles may perform differently than internal combustion vehicles. Prior to purchasing a battery-electric or fuel cell electric vehicle, it is recommended that purchasers consider the following criteria, in addition to others, to ensure that the vehicle they are purchasing is capable of meeting the needs of their particular vocation or work cycle:

1. The ability to accelerate and maintain speed up on a graded road;
2. Acceleration and maximum speed requirements;
3. The range on a specific work cycle and with varying loads;
4. The impacts of heating, ventilation, and air conditioning (HVAC) usage on range;
5. The ability to access charging or fueling infrastructure and anticipated charging/refueling times;
6. The potential for battery degradation over the life of the vehicle and best practices to prolong battery life; and
7. The impact of battery degradation on top speed, the vehicle’s ability to do work, range, etc.”

3.1.8 Powertrain Integration. The vehicle manufacturer shall provide an attestation that the vehicle integration components are designed and developed to accommodate the expected output of the zero-emission powertrain to be used. That is, the design tolerances and performance specifications of the vehicle integration components are suitable for the zero-emission powertrain’s expected output.

3.2 Owner’s Manual. Vehicles certifying to the Enhanced Electric and Fuel-Cell Vehicle Certification Procedures in section 1 in the California Provisions of subpart 1037.815 shall include an Owner’s Manual that addresses the vehicle at the time of vehicle delivery that meets the following requirements. Manufacturers may provide a combined owner’s manual that addresses both the vehicle and powertrain.

3.2.1 Format. The owner’s manual must be provided as a physical copy, as a digital downloadable file online at the manufacturer’s website, via the on-board vehicle interface, or in another format approved by the Executive Officer at the time of vehicle certification. If the owner’s manual is not finalized at the time of vehicle certification, a draft copy may be provided so long as a final copy is provided before the first vehicle sale. The manufacturer must provide to the Executive Officer the owner’s manual, or access to the owner’s manual, upon request free of charge.

3.2.2 The owner’s manual must include instructions for the maintenance and use of the powertrain and vehicle by the owner.

3.2.3 The owner’s manual must describe minimum warranty provisions for the certification family.

3.2.4 The owner’s manual shall make available to the purchaser a current list or online reference of manufacturer-authorized repair and service locations capable of servicing, diagnosing, and repairing vehicles certified to these procedures. For physical copies, more-current vehicle repair and service network information may be provided as an attachment.

3.2.5 If mobile repair service is provided by the manufacturer in addition to or in lieu of physical service locations, the manufacturer shall provide a description of the services that can be performed in the field along with anticipated response times.

3.2.6 If a manufacturer provides or offers remote/wireless diagnostic and repair services, the applicability and limitations of this service type shall be clearly described.

3.3 Diagnostic and Repair Manual. The manufacturer must develop a physical or electronic copy of the diagnostic and repair manual for each vehicle model.
within a family (a certification family could have multiple powertrains). The
diagnostic and repair manual must describe how to interpret fault codes, remove
and install individual vehicle integration components, and include schematics of
the electrical, mechanical, and thermal management systems. If the same
diagnostic and repair manual is applicable to multiple vehicle/powertrain
configurations, the manufacturer shall indicate to which configurations each
diagnostic and repair manual is applicable.

3.3.1 The manufacturer must provide to the Executive Officer technical
service bulletins and updates to the diagnostic and repair manual upon request
free of charge.
3.3.2 The manufacturer must provide dealer-level diagnostic software and
access to the Executive Officer upon request free of charge.
3.3.3 The manufacturer must make the same diagnostic and repair manual
(including repair and troubleshooting procedures), technical service bulletins,
and diagnostic software used by their internal repair personnel available to
third-party repair facilities in California at a fair and reasonable price. The
manufacturer may require technical training for access.
3.3.4 The diagnostic and repair manual is not required to address
components of the powertrain if those components are addressed in the
powertrain diagnostic and repair manual, except for powertrain components
modified by, or impacted by modifications of, the vehicle manufacturer.
3.3.5 The diagnostic and repair manual must be included in the application for
certification, as a digital downloadable file, or in another format approved by the
Executive Officer upon request free of charge. If the diagnostic and repair
manual is not complete at the time of certification, a draft may be provided.

3.4 Fuel-Fired Heaters. Fuel fired heaters installed on vehicles certified in
accordance with these procedures must comply with all of the following:
3.4.1 Comply with Low Emission Vehicle II Program’s ULEV emission
standards for passenger cars and light-duty trucks less than 8,500 pounds
GVWR set forth in section 1961(a)(1), title 13, CCR; and
3.4.2 The heater is demonstrated to have zero fuel evaporative emissions
under any and all possible operational modes and conditions. Manufacturers
must include an evaluation of the conditions under which the fuel-fired heater
can be operated and attest that there are no conditions under which
evaporative emissions can exist. Diesel fuel-fired heaters shall be considered
compliant with the requirements in this section 3.4.2.
3.4.3 The test procedures for determining compliance with the emission
standards in this section 3.4 are set forth in section D.2.7 of 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,” as last amended
September 3, 2015, which is incorporated by reference in section 1962.2, title
13, CCR.

1037.120 Emission-related warranty requirements. October 25, 2016.
1. Subparagraphs (a) through (b)(1)(i). [No change.]
2. Amend subparagraph (b)(1)(ii) as follows: 5 years or 100,000 miles for Medium and Heavy HDV (except tires).
3. Subparagraphs (b)(1)(iii) through (e). [No change.]

1037.125 Maintenance instructions and allowable maintenance. October 25, 2016.


1. Subparagraphs (a) through (b)(7)(c)(5). [No change.]
2. Amend subparagraph (c)(6) as follows: Identify the emission control system. Use terms and abbreviations as described in Appendix III to this part or other applicable conventions.

(i) Phase 2 tractors are only required to have the following emission control systems identified, although additional emission control system abbreviations may be included on the label. The minimum required Phase 2 tractor emission control identifiers are:
   - IRT – Engine shutoff system
   - LRRA – Low rolling resistance tires (all) (If LRRA is identified on the label, LRRD and LRRS are not required.)
   - LRRD – Low rolling resistance tires (drive)
   - LRRS – Low rolling resistance tires (steer)
   - TPMS – Tire pressure monitoring system
   - ATI – Automatic tire inflation system
   - ATS – Aerodynamic side skirt and/or fuel tank fairing
   - ARF – Aerodynamic roof fairing
   - ARFR – Adjustable height aerodynamic roof fairing
   - TGR – Gap reducing tractor fairing

(ii) Phase 2 vocational vehicles are only required to have the following emission control systems identified, although additional emission control system abbreviations may be included on the label. The minimum required Phase 2 vocational vehicle emission control identifiers are:
   - IRT – Engine shutoff system
   - LRRA – Low rolling resistance tires (all) (If LRRA is identified on the label, LRRD and LRRS are not required.)
   - LRRD – Low rolling resistance tires (drive)
   - LRRS – Low rolling resistance tires (steer)
   - TPMS – Tire pressure monitoring system
   - ATI – Automatic tire inflation system

Date of Release: December 31, 2018
Date of Hearing: February 21, 2019
ATS – Aerodynamic side skirt and/or fuel tank fairing  
ARF – Aerodynamic roof fairing  
ARFR – Adjustable height aerodynamic roof fairing  
AFF – Aerodynamic front fairing  
AREF – Aerodynamic rear fairing  

3. Subparagraph (c)(7). [No change.]  

2.4. Amend subparagraph (b)(8)(c)(8) as follows: Beginning January 1, 2015, state: “THIS VEHICLE COMPLIES WITH CALIFORNIA REGULATIONS FOR [MODEL YEAR] HEAVY–DUTY VEHICLES.” It may also state that the vehicle conforms to any other applicable federal or Canadian emission standards for heavy-duty vehicles. For electric and fuel-cell vehicles certified pursuant to the Enhanced Electric and Fuel-Cell Vehicle Certification Procedures, also state “THIS VEHICLE ALSO COMPLIES WITH CALIFORNIA’S ENHANCED ELECTRIC AND FUEL-CELL VEHICLE CERTIFICATION PROCEDURES.”  

3.5. Subparagraphs (b)(9)(c)(9) through (e). [No change.]  

B. California Provisions.  

1. For electric and fuel-cell vehicles certified with a fuel-fired heater pursuant to the Enhanced Electric and Fuel-Cell Vehicle Certification Procedures, include the fuel-fired heater approval number (if applicable).


1. Amend subparagraph (a) as follows: Credit provisions for 2013 and earlier model year compliance. The provisions of this paragraph (a) apply to vehicles produced in the 2013 and earlier model years that have generated early credits with U.S. Environmental Protection Agency. For 2013 model year heavy-duty vehicles (or earlier model years for electric vehicles) that are certified to the greenhouse gas standards of this 40 CFR Part 1037, an equal amount of credit as given by the U.S. Environmental Protection Agency will be granted in the California ABT Program. The manufacturer must notify ARB of its intent to use this provision before submitting its application and must submit to ARB all data that it submitted to U.S. Environmental Protection Agency in accordance with the reporting requirements as required under 40 CFR §§1037.205, 1037.250, and 1037.730.

2. Subparagraphs (a)(1) through (m)(o). [No change.]  

3. Amend subparagraph (p) as follows: Credit multiplier for advanced technology.

   (1) If you generate credits from Phase 1 vehicles certified with advanced technology, you may multiply these credits by 1.50, except that you may not apply this multiplier in addition to the early-credit multiplier of paragraph (a) of this section.

   (2) If you generate credits from model year 2027 and earlier Phase 2 vehicles
certified with advanced technology, you may multiply these credits by 3.5 for PHEVs, 4.5 for electric vehicles, and 5.5 for fuel cell vehicles, unless you are required to produce the advanced technology vehicle by another ARB regulation. If you are required to produce the advanced technology vehicle by another ARB regulation, you may not multiply the credits generated by those vehicles by the ATC multipliers listed above. The Phase 2 ATC multiplier of 3.5 for PHEVs, inclusive of PHEVs with ePTO, is applicable only if the PHEV complies with both subparagraphs (p)(2)(i) and (ii) of this section:

(i) No increase in NOx emissions compared to an equivalent conventional vehicle tested in accordance with §1066.501.B, as modified by these test procedures.

(ii) All-electric range (AER) as specified in the table below, tested in accordance with §1066.501.B, as modified by these test procedures.

<table>
<thead>
<tr>
<th>Vehicle Model Year</th>
<th>AER (miles)</th>
<th>ATC Multiplier</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Slow-Charge(1)</td>
<td>Fast-Charge(2)</td>
</tr>
<tr>
<td>2017 - 2020</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2021 - 2023</td>
<td>10+</td>
<td>10+</td>
</tr>
<tr>
<td>2024 - 2026</td>
<td>20+</td>
<td>15+</td>
</tr>
<tr>
<td>2027+</td>
<td>35+</td>
<td>20+</td>
</tr>
</tbody>
</table>

Notes:

(1) Slow-charge refers to Level 1 and Level 2 chargers with electrical circuit rated up to 240 volts AC, up to 80 amps, and 19.2 kilowatts.

(2) Fast-charge compatible PHEVs must: 1) be capable of charging from 15 percent state-of-charge to 85 percent state-of-charge within one-half hour (0.5hr); and 2) demonstrate that typical operating time is at least 8 times (8x) typical charging time (i.e., a vehicle must be capable of operating for 8 minutes for each minute of charge time).

(3) If the PHEV AER is less than that specified in the AER column for the respective vehicle model year, an ATC multiplier of 1.5 would be applicable if the PHEV complies only with subparagraph (p)(2)(i) of this section.

4. Subparagraphs (q) through (aa). [No change.]

5. Amend subparagraph (t)(1) as follows: Glider kits and glider vehicles.

(1) Glider vehicles conforming to the requirements in this paragraph (t)(1) are exempt from the Phase 1 emission standards of this part 1037 prior to January 1, 2021. Engines in such vehicles (including vehicles produced after January 1, 2021) remain subject to the requirements of 40 CFR part 86 as it existed on October 25, 2016, which is incorporated by reference herein, applicable for the engines’ original model year, but not subject to the Phase 1 or Phase 2 standards of 40 CFR part 1036 as it existed on October 25, 2016, which is incorporated by reference herein, unless they were originally manufactured in model year 2014 or later. Only engines that are certified to the 2010 and newer model-year emission standards of title 13, CCR, section 1956.8 shall be used in such vehicles that qualify for the interim provision in this paragraph (t)(1).

6. Subparagraphs (t)(1)(i) through (t)(2). [No change.]
7. Delete subparagraph (t)(3).
8. Subparagraph (u) through (aa). [No change.]

Subpart C – Certifying Vehicle Families


1037.205 What must I include in my application? October 25, 2016.
1. Subparagraphs (a) through (q). [No change.]
2. Amend subparagraph (r) as follows: Unconditionally certify that all the vehicles in the vehicle family are built as described and comply with the requirements of this part, other referenced parts of the CFR, and title 17, CCR, sections 95660 through 95664.
3. Subparagraphs (s) through (v). [No change.]

B. California Provisions.
1. In your application, identify the engine or zero-emission powertrain families that will be used in the vehicle family, for vehicles produced and delivered for sale in California.

1037.211 Preliminary approval for manufacturers of aerodynamic devices. October 25, 2016.


A. Federal Provisions. [No change]

B. California Provisions.
1. If you certify a GHG urban bus to the Other bus CO₂ emission standard specified in §1037.105(h)(1), in order to demonstrate compliance in California you must do one of the following:
   1.1 Perform emission modeling using the Greenhouse gas Emissions Model (GEM), as described in §1037.520, to demonstrate that the GHG urban bus can meet the applicable CO₂ emission standard specified in §1037.105(b).
Simplified versions of GEM, as defined in §1037.520(a)(2)(ii), may not be used for this demonstration. If you wish to use emission credits to demonstrate that the GHG urban bus can meet the applicable CO₂ emission standard specified in §1037.105(b), the emission credits must be from the applicable averaging set, either §1037.740(a)(1), (2) or (3). You may not use emission credits generated from vehicles that are certified to the CO₂ emission standards in §1037.105(h) for this demonstration. Or

1.2 Produce and deliver the percentage of zero-emission GHG urban buses of the same averaging set, either §1037.740(a)(1), (2) or (3), for sale in California, as specified in the table below:

<table>
<thead>
<tr>
<th>Vehicle Model Year</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
<th>2028+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero-Emission GHG Urban Bus Production for each Vehicle Model Year*</td>
<td>0.49%</td>
<td>0.49%</td>
<td>0.49%</td>
<td>2.33%</td>
<td>2.33%</td>
<td>2.33%</td>
<td>1.64%</td>
<td>6.98%</td>
</tr>
</tbody>
</table>

* The computed number of zero-emission GHG urban buses shall be rounded to the next whole number.

1037.243 Demonstrating compliance with evaporative emission standards. [n/a; see “California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles” for California fuel evaporative emission standards.]


1. Amend subparagraph (a) as follows: (a) Within 90 days after the end of the model year, send the Executive Officer a report including the total U.S.-directed production volume (the total U.S.-directed production volume is its intended meaning in this subparagraph (a), and not the California-directed production volume as referenced in subsection 2. in the California Provisions of §1037.1) of vehicles you produced in each vehicle family during the model year (based on information available at the time of the report). For each vehicle, report vehicle identification number, vehicle configuration, and engine family, and identify the vehicle subfamily identifier. Report uncertified vehicles sold to secondary vehicle manufacturers. We may waive the reporting requirements of this paragraph (a) for small manufacturers.

2. Subparagraphs (b) through (e). [No change.]

B. California Provisions.

1. Vehicles certifying to the Enhanced Electric and Fuel-Cell Vehicle Certification Procedures shall keep records of the powertrain families installed into each vehicle for 3 years after the completion of the model year.
1037.255 What decisions may EPAARB make regarding my certificate of conformity? October 25, 2016.

Subpart D – Testing Production Vehicles and Engines

1037.301 Overview of measurements related to GEM inputs in a selective enforcement audit. October 25, 2016.
1037.305 Audit procedures for tractors—aerodynamic testing. October 25, 2016.
1037.315 Audit procedures related to powertrain testing. October 25, 2016.
1037.320 Audit procedures for axles and transmissions. October 25, 2016.

Subpart E – In-use Testing


Subpart F – Test and Modeling Procedures

  1. Subparagraphs (a) through (c). [No change.]
  2. Amend subparagraph (d) as follows: Use the applicable fuels specified in 40 CFR part 1065, as amended by the “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles,” and “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles,” to perform valid tests.
  3. Subparagraphs (d)(1) through (4)(h). [No change.]
1037.515 Determining CO2 emissions to show compliance for trailers. October 25, 2016.
1037.528 Coastdown procedures for calculating drag area (CdA). October 25, 2016.
1037.530 Wind-tunnel procedures for calculating drag area (CdA). October 25, 2016.
1037.532 Using computational fluid dynamics to calculate drag area (CdA). October 25, 2016.

C-21
Subpart G – Special Compliance Provisions

1037.601 What General compliance provisions apply to these vehicles? October 25, 2016.

1. Subparagraphs (a) through (b). [No change.]

2. Amend subparagraph (a)(1) as follows: Except as specifically allowed by this part or 40 CFR part 1068, it is a violation of §1068.101(a)(1) to introduce into commerce in California a tractor or vocational vehicle containing an engine not certified to the applicable requirements of this part and 40 CFR part 86. Further, it is a violation to introduce into commerce in California a Phase 1 tractor containing an engine not certified for use in tractors; or to introduce into commerce in California a vocational vehicle containing a light heavy-duty or medium heavy-duty engine not certified for use in vocational vehicles, subject to the penalty provisions set forth in Article 3 (commencing with section 42400) of Chapter 4 of Part 4 of, and Chapter 1.5 (commencing with Section 43025) of Part 5 of, Division 26 of the California Health and Safety Code. These prohibitions apply especially to the vehicle manufacturer. Note that this paragraph (a)(1) allows the use of heavy heavy-duty tractor engines in vocational vehicles.

3. Subparagraphs (a)(2) through (a)(4). [No change.]

4. Amend subparagraph (a)(5) as follows: The warranty-related prohibitions in title 13, CCR, sections 2035, 2036, 2037, 2039, 2040, 2041, and 2042, apply to manufacturers of new heavy-duty highway vehicles in addition to the prohibitions
described in 40 CFR §1068.101(b)(6).

5. Subparagraphs (a)(6) through (b). [No change.]

2.6. Amend subparagraph (c) as follows: The prohibitions of 40 CFR 86.1854 §1068.101 apply for vehicles subject to the requirements of this part. The actions prohibited under this provision include the introduction into commerce in California of a complete or incomplete vehicle subject to the standards of this part where the vehicle is not covered by a valid Executive Order or exemption.

3. Amend subparagraph (d) as follows: Except as specifically allowed by this part, the introduction into commerce in California of a tractor containing an engine not certified for use in tractors; or the introduction into commerce in California of a vocational vehicle containing a light heavy-duty or medium heavy-duty engine not certified for use in vocational vehicles is subject to the penalty provisions set forth in Article 3 (commencing with section 42400) of Chapter 4 of Part 4 of, and Chapter 1.5 (commencing with Section 43025) of Part 5 of, Division 26 of the California Health and Safety Code. This prohibition applies especially to the vehicle manufacturer.

4.7. Subparagraphs (d) through (ef). [No change.]

1037.605 Installing engines certified to alternate standards for specialty vehicles. October 25, 2016.

1037.610 Vehicles with innovative off-cycle technologies. October 25, 2016.

1. Subparagraphs (a) through (d). [No change.]

2. Amend subparagraph (e) as follows: We may seek public comment on your request. However, we will generally not seek public comment on credits or adjustments based on A to B chassis testing performed according to the duty-cycle testing requirements of this part or in-use testing performed according to paragraph (c) of this section.

3. Subparagraphs (f) through (g). [No change.]


A. Federal Provisions. [No change]

B. California Provisions

1. Enhanced Electric and Fuel-Cell Vehicle Certification Procedures. Electric vehicles and hydrogen fuel-cell vehicles may be certified to the Enhanced Electric and Fuel-Cell Vehicle Certification Procedures by meeting the requirements specified in all subparts. In addition, the vehicle manufacturer shall still be responsible for meeting all other applicable requirements for any electric of fuel-cell vehicle. The vehicle manufacturer shall be responsible for all vehicle integration components of the vehicle. This shall also include components related to integration of the powertrain into the vehicle.
1. Subparagraphs (a) through (d). [No change.]
2. Amend subparagraph (d)(1) as follows: Such test results are deemed under §1037.825 to be submissions to ARB.
3. Subparagraphs (d)(2) through (e). [No change.]
4. Amend subparagraph (f) as follows: ARB may require component manufacturers to provide information or take other actions. For example, ARB may require component manufacturers to test components they produce.


Special purpose tractors. October 25, 2016.

1. Amend the introductory sentence as follows: Except as specified in §1037.150, the requirements of this section apply beginning [Insert effective date of amendment for this rulemaking].
2. Subparagraphs (a) through (b). [No change.]
3. Amend subparagraph (c) as follows: The engine standards identified in paragraph (b) of this section do not apply for certain engines when used in glider kits. These engines remain subject to the standards to which they were previously certified. In order to qualify for the allowances in this paragraph (c), engines must be certified to the 2010 and newer model-year emission standards of title 13, CCR, section 1956.8.
4. Subparagraphs (c)(1) through (e). [No change.]

Variable vehicle speed limiters. October 25, 2016.

In-use compliance with family emission limits (FELs). October 25, 2016.

Tire manufacturers.

1. Amend subparagraph (a) as follows: General. Vehicle modifications during and after the useful life violate California Vehicle Code 27156 and title 13, CCR, 2220 et seq.
2. Subparagraphs (b) through (d). [No change.]


1. Subparagraphs (a) and (b). [No change.]
2. Delete subparagraph (c).
3. Subparagraph (d) through (e). [No change.]
A. Federal Provisions [No change.]

B. California Provisions

1. Additional provisions apply for automatic engine shutdown systems to comply with California’s Heavy-Duty Diesel Engine Idling Requirements, as contained in section 11.B.6. of the “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles.” However, a manufacturer may choose to comply with California’s Heavy-Duty Diesel Engine Idling Requirements via the Optional NOx Idling Emission Standard, as described in subsection 11.B.6.3, in which case the aforementioned additional California provisions for the automatic engine shutdown system would not be necessary for compliance.

1037.665 Production and in-use tractor testing. October 25, 2016.
1037.670 Optional CO2 emission standards for tractors at or above 120,000 pounds GCWR. October 25, 2016.

Subpart H – Averaging, Banking, and Trading for Certification

A. Federal Provisions. [No change.]
B. California Provisions.

1. You are required to retire any emission credits that are used to demonstrate that the GHG urban buses produced and delivered for sale in California can meet the applicable standard specified in §1037.105(b), as specified in the California Provisions of §1037.241. Identify any such credits in the reports described in §§1037.725 and 1037.730. Those credits may no longer be used by anyone to demonstrate compliance with any ARB/U.S. Environmental Protection Agency emission standards.

2. You may generate low-GWP credit for a vehicle that uses a qualifying low-GWP air conditioning refrigerant and that is produced and delivered for sale in California, if it meets the requirements in §1037.115 B.2., as modified by these test procedures. You may use this credit only within its vehicle averaging set.

3. You may generate with a 3.5 ATC multiplier for Phase 2 PHEVs, inclusive of PHEVs with ePTO, only if you demonstrate that the PHEVs do not emit increased NOx emissions compared to similar conventional vehicles pursuant to §1037.150(p)(2)(i), as modified by these procedures, and that the PHEVs comply with the all-electric range requirement pursuant to §1037.150(p)(2)(ii), as modified by these procedures. If the PHEVs only comply with the no-NOx increase requirement but not the all-electric range requirement, you may only generate with a 1.5 ATC multiplier. If the PHEVs do not comply with the no-NOx increase requirement, you may not generate an ATC.

Date of Release: December 31, 2018
Date of Hearing: February 21, 2019
If you certify PHEVs federally using the 3.5 multiplier for ATC but these PHEVs do not meet the requirements of §1037.150(p)(2)(i) and/or (ii), as modified by these procedures, you will generate an emission deficit based on the difference between federal and applicable California ATC calculations for PHEVs produced and delivered for sale in California, as applicable. You must identify in the reports, described in §§1037.725 and 1037.730, any ATC generated from PHEVs pursuant to §1037.150(p) and calculate any emission deficits for PHEVs produced and delivered for sale in California, as applicable.

1037.705 Generating and calculating emission credits. October 25, 2016.

A. Federal Provisions. [No change.]

B. California Provisions.

1. For every vehicle that is eligible for the low-GWP refrigerant credit according to 40 CFR 1037.115.B.2., modified by these test procedures, calculate the emission credit for each participating family or subfamily as follows, and round it to the nearest one-tenth of a Mg.

Low-GWP Refrigerant Credit (Mg) = Per Year Credit × Volume × Useful Life

Where:

- **Per Year Credit** = amount of credit a vehicle is eligible for every year of its useful life according to the Low-GWP Countdown Schedule of Per Year Credit table.
- **Volume** = volume of vehicles produced and delivered for sale in California of the vehicle subfamily.
- **Useful Life** = useful life of the vehicles, in years, as described in CCR, title 13, Section 2112.

If the Low-GWP Volume Fraction for the vehicle type and model year to which the credit-eligible vehicle belongs is less than 20%, the Per Year Credit shall be 0.56 Mg per vehicle per year, or 1.28% of the annual tailpipe CO₂ emissions allowed by the CO₂ standards for internal combustion vehicles of the vehicle subcategory and model year to which the credit-eligible vehicle belongs, whichever is less. When the Low-GWP Volume Fraction for the vehicle type and model year to which the credit-eligible vehicle belongs reaches or exceeds 20% for the first time, the above credit levels shall be allowed for that vehicle type for the subsequent four model years. After the subsequent four model years, the Per Year Credit shall be 0.31 Mg per vehicle per year, or 0.71% of the annual tailpipe CO₂ emissions allowed by the internal combustion engine CO₂ standard for the vehicle subcategory and model year to which the credit-eligible vehicle belongs, whichever is less. The countdown of the credit schedule is illustrated in the table below, where MY1 is the first model year for which the Low-GWP Volume Fraction for a particular vehicle type reaches
or exceeds 20%, and MY2 through MY6 and beyond are the consecutive model years subsequent to MY1.

| Low-GWP Countdown Schedule of Per Year Credit |
|---------------|---------------|---------------|---------------|---------------|---------------|
| MY1           | MY2           | MY3           | MY4           | MY5           | MY6+          |
| 0.56 Mg/veh./yr. | 0.56 Mg/veh./yr. | 0.56 Mg/veh./yr. | 0.56 Mg/veh./yr. | 0.56 Mg/veh./yr. | 0.31 Mg/veh./yr. |
| 1.28%          | 1.28%          | 1.28%          | 1.28%          | 1.28%          | 0.71%          |

Or

What must I include in my application for certification? October 25, 2016.

A. Federal Provisions. [No change.]

B. California Provisions.

1. If any of your vehicles are included in the California Provisions in §1037.701.B., as modified by these test procedures, you must provide information for the vehicle family or subfamily to the Executive Officer according to the Federal Provisions of this section, using projected volumes of vehicles produced and delivered for sale in California for the model year. If you project emission deficits for a family or subfamily, you may use either California credit and/or federal credit to offset the emission deficits, in which case the federal credit must be retired if used and may no longer be used by anyone to demonstrate compliance with any ARB/U.S. Environmental Protection Agency emission standards. Federal credits from vehicles produced and delivered for sale outside of California that do not meet either requirements of §§1037.241.B and 1037.150(p)(2)(i) and (ii), as modified by these test procedures, may not be used to offset the emission deficits. For PHEVs’ emission deficits due to the difference between federal and applicable California ATC calculations, as specified in §1037.701.B(3), you have the option to retire those federal credits in the amount of that difference or to otherwise offset those deficits. Those retired credits may no longer be used by anyone to demonstrate compliance with any ARB/U.S. Environmental Protection Agency emission standards.

ABT reports. October 25, 2016.

A. Federal Provisions. [No change.]

B. California Provisions.

1. If any of your vehicles are included in the California Provisions in §1037.701.B., as modified by these test procedures, you must provide reports for the vehicle family or subfamily to the Executive Officer according to the Federal Provisions of this section, using projected and actual volumes of vehicles produced and delivered for sale in California for the model year. Show your net balance of emission credits for these vehicle families. Federal credit may be used to offset any emission deficits, in which case the federal credit must be retired if used and may no longer be used by anyone to demonstrate compliance with any ARB/U.S. Environmental Protection Agency emission standards. Federal credits from vehicles produced and delivered for sale outside of California that do not meet either requirements of §§1037.241.B and 1037.150(p)(2)(i) and (ii), as modified by these test procedures, may not be used to offset the emission deficits. For PHEVs’ emission deficits due to the difference between federal and applicable California ATC calculations, as specified in §1037.701.B(3), you have the option to retire those federal credits in the amount of that difference or to otherwise offset those deficits. Those retired credits may no longer be used by anyone to demonstrate compliance with any ARB/U.S. Environmental Protection Agency emission standards.
Subpart I – Definitions and Other Reference Information


A. Federal Provisions. [All federal definitions apply, except as otherwise noted below.]

Amend “Vehicle service class” as follows: “Vehicle service class” means a vehicle’s weight class as specified in this definition. Note that, while vehicle service class is similar to primary intended service class for engines, they are not necessarily the same. For example, a medium heavy-duty vehicle may include a light heavy-duty engine. Note also that while spark-ignition engines do not have a primary intended service class, vehicles using spark-ignition engines have a vehicle service class.

(1) Light heavy-duty vehicles are those vehicles with GVWR below 19,500 pounds. Vehicles in this class include heavy-duty pickup trucks and vans, motor homes and other recreational vehicles, and some straight trucks with a single rear axle. Typical applications would include personal transportation, light-load commercial delivery, passenger service, agriculture, and construction.

(2) Medium heavy-duty vehicles are those vehicles with GVWR from 19,500 to 33,000 pounds. Vehicles in this class include school buses, straight trucks with a single rear axle, city tractors, and a variety of special purpose vehicles such as small dump trucks, and refuse trucks. Typical applications would include commercial short haul and intra-city delivery and pickup.

(3) Heavy heavy-duty vehicles are those vehicles with GVWR above 33,000 pounds. Vehicles in this class include tractors, GHG urban buses, and other heavy trucks.

B. California Provisions.

“2014 MY National Heavy-Duty Engine and Vehicle Greenhouse Gas Program” means the national program that applies to new 2014 and subsequent model heavy-
duty engines and vehicles, as adopted by the U.S. Environmental Protection Agency (76 Fed. Reg. 57106 (September 15, 2011)) and amended June 17, 2013, August 16, 2013, and September 12, 2013, as incorporated in and amended by these test procedures.

“Battery Pack” has the same definition as in “California Standards and Test Procedures for New 2021 and Subsequent Model Heavy-Duty Zero-Emission Powertrains,” which is incorporated by reference in section 1956.8, title 13, CCR. “Certification Family” or “Family” has the same definition as “vehicle family,” in the HD Phase 2 program except that no family shall include vehicles from multiple FELs and if a manufacturer opts to use own on-board strategy to quantify usable energy, different quantification strategies require different families.

“Certificate of Conformity” means an Executive Order certifying vehicles for sale in California.

“Certification” means relating to the process of obtaining an Executive Order for an enginevehicle family that complies with the emission standards and requirements in this part.

“Designated Compliance Officer” means the Executive Officer of the Air Resources Board or a designee of the Executive Officer.

“Designated Enforcement Officer” means the Executive Officer of the Air Resources Board or a designee of the Executive Officer.

“Energy Storage System” has the same definition as in “California Standards and Test Procedures for New 2021 and Subsequent Model Heavy-Duty Zero-Emission Powertrains,” which is incorporated by reference in section 1956.8, title 13, CCR.

“EPA” shall also mean Air Resources Board or Executive Officer of the Air Resources Board.

“Executive Officer” means the Executive Officer of the Air Resources Board or his or her authorized representative.

“Fuel-Cell Electric Vehicle” has the same definition as that in 40 CFR § 86.1803 01 amended on July 1, 2011, incorporated by reference herein.

“Fuel-Fired Heater” has the same definition as that in title 13, CCR § 2485.

“GHG Urban Bus” means a passenger-carrying vehicle with a load capacity of fifteen or more passengers and intended primarily for intracity operation, i.e., within the confines of a city or greater metropolitan area. GHG urban bus operation is characterized by short rides and frequent stops. To facilitate this type of operation, more than one set of quick-operating entrance and exit doors would normally be installed. Since fares are usually paid in cash or tokens, rather than purchased in advance in the form of tickets, GHG urban buses would normally have equipment installed for collection of fares. GHG urban buses are also typically characterized by the absence of equipment and facilities for long distance travel, e.g., rest rooms, large luggage compartments, and facilities for stowing carry-on luggage.

“Manufacturer” means any person who manufactures or assembles an engine, a vehicle (including a trailer or another incomplete vehicle), or piece of equipment for
sale in California or otherwise introduces a new engine vehicle into commerce in
California. This includes importers who import engine or vehicles for resale, entities
that manufacture gliders kits, and entities that assemble glider vehicles.

“Medium-duty engine” means any heavy-duty engine that is used to propel a
medium-duty vehicle.

“Medium-duty vehicle” means any heavy-duty low-emission, ultra-low-emission,
super-ultra-low-emission or zero-emission vehicle certified to the standards in title
passenger vehicles, having a manufacturer’s gross vehicle weight rating between
8,501 and 14,000 pounds.

“U.S. Environmental Protection Agency” means the United States Environmental
Protection Agency.

“Rated Energy Capacity” has the same definition as in “California Standards and
Test Procedures for New 2021 and Subsequent Model Heavy-Duty Zero-Emission
Powertrains,” which is incorporated by reference in section 1956.8, title 13, CCR.

“Usable Capacity” has the same definition as in “California Standards and Test
Procedures for New 2021 and Subsequent Model Heavy-Duty Zero-Emission
Powertrains,” which is incorporated by reference in section 1956.8, title 13, CCR.

“Vehicle integration component” means components of the vehicle that involve the
interfacing of the vehicle with the zero-emission powertrain and the transfer of power
from the powertrain to propel the vehicle. The vehicle integration components are
limited to the following components, if installed in the vehicle: drive shafts, propeller
shafts, torque converters, differentials, transmissions, gearboxes, axles, powertrain-
to-vehicle mounts, modifications of the vehicle suspension to accommodate the
powertrain, components that couple any of these components with one another, and
any components incorporated into the vehicle in order to comply with requirements
of certification to the Enhanced Electric and Fuel-Cell Vehicle Certification
Procedures.

“We (us, our)” means the Executive Officer and any authorized representatives.

“Zero-Emission Powertrain” or “Powertrain” has the same definition as “Zero-
section 91011, emissions data shall not be identified as confidential.

   1. Delete subparagraph (a) and replace as follows: You may request a hearing under certain circumstances, as described elsewhere in this part.
   2. Subparagraph (b). [No change.]
   3. Amend subparagraph (c) as follows: If we agree to hold a hearing, we will use the procedures specified in 17 CCR sections 60055.1 through 6055.43.

1037.825 Reporting and recordkeeping requirements. October 25, 2016.
   1. Subparagraphs (a) through (d). [No change.]
   2. Delete subparagraph (e).

Appendix I to Part 1037—Heavy-duty Transient Chassis Test Cycle

Appendix II to Part 1037—Power Take-Off Test Cycle

Appendix III to Part 1037—Emission Control Identifiers

Appendix IV to Part 1037—Heavy-Duty Grade Profile for Phase 2 Steady-State Test Cycles

Appendix V to Part 1037—Power Take-Off Utility Factors
PART 1066 – VEHICLE TESTING PROCEDURES

Subpart A – Applicability and General Provisions

1066.1 Applicability. April 28, 2014.

1066.2 Submitting information to EPAARB under this part. April 28, 2014.
   1. Subparagraph (a). [No change.]
   2. Delete subparagraph (b) and replace as follows: In the standard-setting part and in 40 CFR 1068.101, we describe your obligation to report truthful and complete information and the consequences of failing to meet this obligation. This obligation applies whether you submit this information directly to ARB or through someone else.
   3. Subparagraphs (c) through (d). [No change.]
   4. Amend subparagraph (e) as follows: See the provisions of title 17, CCR sections 91000 through 91022 for provisions related to confidential information. Note however that emission data is generally not eligible for confidential treatment.
   5. Amend subparagraph (f) as follows: Nothing in this part should be interpreted to limit our ability to verify that vehicles conform to the regulations.

1066.5 Overview of this part 1066 and its relationship to the standard-setting part. April 28, 2014.

1066.10 Other procedures. February 19, 2015.

1066.15 Overview of test procedures. April 28, 2014.

1066.20 Units of measure and overview of calculations. April 28, 2014.


Subpart B – Equipment, Measurement Instruments, Fuel, and Analytical Gas Specifications

   1. Subparagraph (a). [No change.]
   2. Amend subparagraph (b) as follows: The provisions of 40 CFR part 1065 specify engine-based procedures for measuring emissions. Except as specified otherwise in this part, the provisions of 40 CFR part 1065, as modified by the “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles,” and “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles,” apply for testing required by this part as follows:
   3. Subparagraphs (b)(1) through (c). [No change.]


1066.110 Equipment specifications for emission sampling systems. October 25, 2016.
1066.120 Measurement instruments. April 28, 2014.
1066.125 Data updating, recording, and control. February 19, 2015.
1066.150 Analyzer interference and quench verification limit. April 28, 2014.

Subpart C – Dynamometer Specifications

1066.201 Dynamometer overview. April 28, 2014.
1066.215 Summary of verification and calibration procedures for chassis dynamometers. April 28, 2014.
1066.245 Response time verification. October 25, 2016.

Subpart D – Coastdown

1066.305 Procedures for specifying road-load forces for motor vehicles at or below 14,000 pounds GVWR. October 25, 2016.
1066.310 Coastdown procedures for heavy-duty vehicles above 14,000 pounds GVWR. June 17, 2013. October 25, 2016.
1066.315 Dynamometer road-load setting. April 28, 2014.
Subpart E – Preparing Vehicles Preparation and Running an Exhaust Emission Test

1066.425 Engine starting and restarting.
1066.430 Performing emission tests. October 25, 2016.

Subpart F – Electric Vehicles and Hybrids Electric Vehicles

A. Federal Provisions. [No change.]
B. California provisions.
   1. A manufacturer may use the test procedures described in this subsection to test hybrid vehicles to demonstrate no increase in NOx emissions compared to a similar conventional vehicle pursuant to §1037.150(p)(2)(i), as modified by these procedures.
      1.1. Chassis Dynamometer. A manufacturer may use the test procedures pursuant to “California Certification and Installation Procedures for Medium and Heavy-Duty Vehicle Hybrid Conversion Systems,” which is incorporated by reference herein.
      1.2. Chassis Dynamometer – Hybrid with ePTO. A manufacturer may use the test procedures pursuant to the hybrid-PTO test procedures as specified in Title 40 Code of Federal Regulations, Part 1037.525. Additional requirements are as specified in “California Certification and Installation Procedures for Medium and Heavy-Duty Vehicle Hybrid Conversion Systems,” which is incorporated by reference herein.
      1.3. Portable Emission Measurement System (PEMS). A manufacturer may use the test procedures pursuant to “California Certification and Installation Procedures for Medium and Heavy-Duty Vehicle Hybrid Conversion Systems,” which is incorporated by reference herein.
      1.4. Powertrain testing. A manufacturer may use powertrain testing to test for NOx emissions and all electric range pursuant to §1037.550, as modified by these procedures.
      1.5. Alternate Duty Cycles. A manufacturer may propose, as part of its Hybrid Technology Emission Test Plan, an alternate duty cycle in lieu of the duty cycles referenced in subsections 1.1, 1.2, and 1.3 of this section, as described in “California Certification and Installation Procedures for Medium and Heavy-Duty...
Vehicle Hybrid Conversion Systems," which is incorporated by reference herein. The Executive Officer may approve an alternate duty cycle if he determines, based upon his engineering judgment and data provided by the applicant, that the proposed alternate test cycle more accurately represents the hybrid vehicle’s anticipated in-use activity by California fleets.


Subpart G – Calculations

1066.615 NOx intake-air humidity correction. October 25, 2016.
1066.630 PDP, SSV, and CFV flow rate calculations. October 25, 2016.
1066.695 Data requirements. October 25, 2016.

Subpart H – Cold Temperature Test Procedures [n/a]

Subpart I – Exhaust Emission Test Procedures for Motor Vehicles

1066.805 Road-load power, test weight, and inertia weight class determination. October 25, 2016.
1066.815 Exhaust emission test procedures for FTP testing. October 25, 2016.
1066.830 Supplemental Federal Test Procedures; overview. [n/a]
1066.831 Exhaust emission test procedures for aggressive driving. [n/a]
1066.835 Exhaust emission test procedure for SC03 emissions. [n/a]
1066.845 AC17 air conditioning efficiency test procedure. [n/a]

Subpart J – Evaporative Emission Test Procedures [n/a]
Subpart H—Subpart K – Definitions and Other Reference Material

   A. Federal Provisions. [No change.]
   B. California Provisions.
      “EPA” shall also mean Air Resources Board or Executive Officer of the Air
      Resources Board.

1066.7051005 Symbols, abbreviations, acronyms, and units of measure. October
      25, 2016.
   A. Federal Provisions. [No change.]
   B. California Provisions.
      ARB means Air Resources Board.

Subpart A – Applicability and Miscellaneous Provisions

1068.1 Does this part apply to me? October 25, 2016.

1. Subparagraph (a) to (a)(1). [No change.]

2. Amend subparagraph (a)(2) as follows: This part 1068 applies to heavy-duty motor vehicles, including trailers, and motor vehicle engines used in such vehicles, that are subject to the emission standards in title 17, CCR, sections 95660, 95661, 95662, 95663, and 95664.

3. Delete subparagraphs (a)(3) to (d).

1068.20 May ARB enter my facilities for inspections? October 25, 2016.

1. Delete subparagraph (a) and replace with: We may inspect your testing, manufacturing processes, storage facilities (including port facilities for imported engines and equipment or other relevant facilities), or records, as authorized by the California Health and Safety Code, to enforce the provisions of this chapter. Inspectors will have authorizing credentials and will usually limit inspections to normal operating hours.

2. Subparagraph (b). [No change.]

3. Delete subparagraph (c) and replace with: Any ARB Enforcement Officer must be furnished by those in charge of a facility being inspected with such reasonable assistance as may be necessary to discharge any function listed in this paragraph. Each applicant for or recipient of certification is required to cause those in charge of a facility operated for its benefit to furnish such reasonable assistance without charge to the ARB irrespective of whether or not the applicant controls the facility.

4. Delete subparagraph (d) and replace with: The duty to admit or cause to be admitted any ARB Enforcement Officer applies whether or not the applicant owns or controls the facility in question and applies both to domestic and foreign engine and vehicle manufacturers and facilities. The ARB will not attempt to make any inspections that it has been informed that local law forbids. However, if local law makes it impossible to insure the accuracy of data generated at a facility, no informed judgment that an engine or vehicle is certifiable or is covered by an Executive Order can properly be based on the data. It is the responsibility of the engine manufacturer or vehicle manufacturer to locate its testing and manufacturing facilities in jurisdictions where this situation will not arise.

A. **Federal Provisions.** [All federal definitions apply, except as otherwise noted below.]

Date of manufacture: Delete and replace with:

*Date of manufacture* means one of the following:

1. For engines, the date on which the crankshaft is installed in an engine block, with the following exception:
   
   .(i) Manufacturers may assign a date of manufacture at a point in the assembly process later than the date otherwise specified under this definition. For example, a manufacturer may use the build date printed on the label or stamped on the engine as the date of manufacture.

Engine: Delete

B. **California Provisions.**

“Administrator” means the Executive Officer of the Air Resources Board, or a designee of the Executive Officer.

“Certificate of Conformity” means an Executive Order certifying vehicles for sale in California.

“Certification” means relating to the process of obtaining an Executive Order for a vehicle family that complies with the emission standards and requirements in this part.

“Designated Compliance Officer” means the Executive Officer of the Air Resources Board or a designee of the Executive Officer.

“EPA” shall also mean Air Resources Board or Executive Officer of the Air Resources Board.

“Standard-setting part” means the articles of the California Code of Regulations that define emission standards for a particular vehicle.

“United States” in reference to vehicle sales or vehicles introduced into commerce means the vehicle sales or vehicles introduced into commerce in California.

“We (us, our)” means the Executive Officer and any authorized representatives.

1068.35 **Symbols, acronyms, and abbreviations.** October 8, 2008.

A. **Federal Provisions.** [No change.]

B. **California Provisions.**

ARB means Air Resources Board.

1068.45 **General labeling provisions.** October 25, 2016.
Subpart E – Selective Enforcement Auditing

1068.401 What is a selective enforcement audit? October 25, 2016.
1068.405 What is in a test order? October 25, 2016.
1068.420 How do I know when my engine family fails an SEA? October 25, 2016.
1068.425 What happens if one of my production-line engines/equipment exceeds the emission standards? October 25, 2016.
1068.430 What happens if a family fails an SEA? October 25, 2016.
1068.435 May I sell engines/equipment from a family with a suspended certificate of conformity? October 8, 2008.
1068.445 When may ARB revoke my certificate under this subpart and how may I sell these engines/equipment again? October 8, 2008.
1068.450 What records must I send to ARB? October 25, 2016.
1068.455 What records must I keep? October 8, 2008.