

## FINAL REGULATION ORDER

NOTE: This document is written in a style to indicate changes from the existing provisions. All existing language is indicated in plain text. All additions to language are indicated by underlined text. All deletions to language are indicated by ~~strikeout~~. Only those portions containing the suggested modifications from existing provisions are included. All other portions remain unchanged and are indicated either by the symbol "\*\*\*\*" or by "[No change]" for reference.

Amend sections 2401, 2403, 2404, 2405, 2406, 2408, and 2409; and adopt section 2408.1, of Article 1, Chapter 9, Division 3, Title 13, California Code of Regulations, to read as follows:

### **Chapter 9. Off-Road Vehicles and Engines Pollution Control Devices** **Article 1. Small Off-Road Engines**

#### **§ 2401. Definitions.**

(a) [No Change.]

(1) – (12) [No Change.]

(13) "Eight-hour workday" means the zero-emission small off-road equipment manufacturer specified operational sequence of a particular type of equipment over an eight-hour period. The operational sequence reflects periods of equipment use, and applicable battery recharging and exchanging.

[Renumber (13) – (34) to (14) – (35)]

(36) "Professional level" means the degree of equipment performance expected by commercial operators. For zero-emission small off-road equipment, the degree of performance is based on durability test power loading, supplied battery capacity, cutter speed, as applicable, and other performance requirements or parameters that are specific to a particular equipment type.

[Renumber (35) – (38) to (37) – (40)]

(41) "Standard battery package" means the manufacturer-specified combination of battery(ies) and battery charger(s) required for an individual unit of zero-emission equipment to perform one hour of continuous operation, allowing for battery exchanges, as applicable in order for designation as professional-level zero-emission equipment. The one-hour periods of continuous operation and battery exchanges are repeated in cycles over the course of an eight-hour workday.

[Renumber (39) – (47) to (42) – (50)]

(51) “Zero-emission equipment credits” means the amount of emission reductions generated by using zero-emission small off-road equipment in place of small spark-ignition off-road equipment. Zero-emission equipment credits are calculated pursuant § 2408.1 and approved by ARB. Electrically powered equipment that are powered exclusively through an electrical cord and require continuous external power generation for operation are not eligible for such credits.

(52) “Zero-emission equipment engine family” means the engine family for zero-emission small off-road equipment based on characteristics of the equipment, its emissions, and its power source, which may be an electric motor, and its energy storage device, which may be a battery.

[Renumber (48) to (53)]

\* \* \* \*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

### **§ 2403. Exhaust Emission Standards and Test Procedures – Small Off-Road Engines.**

(a) [No Change]

(b) (1) [No Change]

(2) Low-emitting Blue Sky Series engine requirements.

*Voluntary standards.* Engines may be designated “Blue Sky Series” engines by meeting:

(A) All applicable requirements of this Article, and

(B) The following voluntary exhaust emission standards, which apply to all certification and compliance testing. Blue Sky Series engines shall not be included in the averaging, banking, and trading program. Zero-emission small off-road equipment may certify to the Blue Sky Series emission standards. Manufacturers of zero-emission small off-road equipment are not required to perform emissions testing, but must file an application of certification and comply with the administrative requirements outlined in the 2005 and Later Test Procedures “California Exhaust Emission Standards and Test Procedures for 2005 and Later Small Off-Road Engines,” adopted July 26, 2004, and as last amended February 24, 2010, to certify their equipment for sale in California.

(3) In lieu of meeting the requirements of subsection 2403(b)(2)(B), manufacturers of zero-emission small off-road equipment may obtain zero-emission equipment credits as detailed in section 2408.1.

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Voluntary Emission Standards  
(grams per kilowatt-hour)

<i>Model Year</i>	<i>Displacement Category</i>	<i>Hydrocarbon plus Oxides of Nitrogen</i>	<i>Carbon Monoxide</i>	<i>Particulate *</i>
2005 and subsequent	<50 cc	25	536	2.0
	50 - 80 cc, inclusive	36	536	2.0
2007 and subsequent	>80 cc - <225 cc	5.0	549	
2008 and subsequent	≥225 cc	4.0	549	

\* Applicable to all two-stroke engines

(43) Evaporative emission requirements for small off-road engines are specified in Title 13, Chapter 15, Article 1.

(c) [No change.]

(d) The test procedures for determining compliance with the standards for exhaust emissions from new small off-road engines are set forth in "California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines," adopted March 20, 1992, and last amended July 26, 2004 or "California Exhaust Emission Standards and Test Procedures for 2005 and Later Small Off-Road Engines," adopted July 26, 2004, as applicable and as last amended February 24, 2010, which is incorporated herein by reference.

(e) Averaging. For new 2000 and subsequent model year small off-road engines, a manufacturer may comply with the standards established in paragraph (b), above, by choosing either to certify an engine family to the standards or to use the corporate average described below.

(1) For each model year, the corporate average value for a pollutant is defined by the following equation:

$$\frac{\sum_{j=1}^n (\text{FEL}_j)(\text{Sales}_j)(\text{Power}_j)(\text{Load Factor})(\text{EDP}_j) - \text{credits expended}}{\sum_{j=1}^n (\text{Sales}_j)(\text{Power}_j)(\text{Load Factor})(\text{EDP}_j)} = \text{AVG}$$

where

- n = the number of small off-road engine families.
- FEL = the Family emission level for an engine family.
- Sales<sub>j</sub> = eligible sales of engine family *j*.
- Power<sub>j</sub> = sales-weighted maximum modal power, in horsepower or kilowatt as applicable, of engine family *j*, or an alternative approved by the Executive Officer.
- EDP<sub>j</sub> = Emissions durability period of engine family *j*, in hours.
- AVG = For a given pollutant (HC+NO<sub>x</sub>, CO, or Particulate Matter), a manufacturer's corporate average of the exhaust emissions from those California small off-road engines subject to the California corporate average pollutant exhaust emission standard, as established by an Executive Order certifying the California production for the model year. Engines certified to voluntary standards of 2403 (b)(2) are not eligible for corporate averaging.
- Credits expended = HC+NO<sub>x</sub> or Particulate Matter credits, as defined in sections 2408 and 2409, that are expended by the manufacturer to adjust the corporate average. This term has no meaning for any pollutants other than HC+NO<sub>x</sub> and Particulate Matter.
- Load Factor = For Test Cycle A and Test Cycle B, the Load Factor = 47% (i.e., 0.47). For Test Cycle C, the Load Factor = 85% (i.e., 0.85). For approved alternate test procedures, the load factor must be calculated according to the Load Factor formula found in paragraph (f)(1) of section 2408.

(2) [No Change]

(3) [No Change]

(f) to (h) [No Change]

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

### FINAL REGULATION ORDER

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### Article 1. Small Off-Road Engines

Amend §§ 2403, 2404, and 2407, title 13, California Code of Regulations, to read as follows:

#### § 2403. Exhaust Emission Standards and Test Procedures—Small Off-Road Engines.

\* \* \* \* \*

(b)(2)(B) The following voluntary exhaust emission standards, which apply to all certification and compliance testing. Blue Sky Series engines shall not be included in the averaging, banking, and trading program. Zero-emission small off-road engines equipment may certify to the Blue Sky Series emission standards. Manufacturers of zero-emission small off-road equipment are not required to perform emissions testing, but must file an application of certification and comply with the administrative requirements outlined as applicable, in the “California Exhaust Emission Standards and Test Procedures for ~~2005-2012 and Later~~ Small Off-Road Engines,” adopted July 26, 2004, and as last amended ~~February 24, 2010~~ October 25, 2012; or, the collective “California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines; Engine-Testing Procedures (Part 1054),” adopted October 25, 2012; and, the “California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines; Engine-Testing Procedures (Part 1065),” adopted October 25, 2012, to certify their equipment for sale in California.

\* \* \* \* \*

(d) The test procedures for determining compliance with the standards for exhaust emissions from new small off-road engines are set forth as applicable, in the “California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines,” adopted March 20, 1992, and last amended July 26, 2004; ~~or the~~ “California Exhaust Emission Standards and Test Procedures for 2005-2012 and Later Small

Off-Road Engines," adopted July 26, 2004, ~~as applicable and as last amended February 24, 2010~~ October 25, 2012; or, the collective "California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines; Engine-Testing Procedures (Part 1054)," adopted October 25, 2012; and, the "California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines; Engine-Testing Procedures (Part 1065)," adopted October 25, 2012, which ~~is~~ are incorporated herein by reference.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

~~§ 2404. Emission Control Labels and Consumer Information - 1995 and Later Small Off-Road Engines.~~

~~\* \* \* \* \*~~

~~(c) Engine Label Content and Location.~~

~~\* \* \* \* \*~~

~~(4) The engine label must contain the following information:~~

~~(A) The label heading must read: "IMPORTANT ENGINE INFORMATION"; or "IMPORTANT EMISSION INFORMATION"; or "EMISSION CONTROL INFORMATION".~~

~~\* \* \* \* \*~~

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

~~§ 2407. New Engine Compliance and Production Line Testing - New Small Off-Road Engine Selection, Evaluation, and Enforcement Action.~~

~~\* \* \* \* \*~~

~~(a)(7) Engines must be randomly chosen from the selected engine family or subgroup. Each chosen engine must be tested as applicable, according to the "California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines" ("Emission Standards and Test Procedures"), adopted March 20, 1992, and last amended July 26, 2004; ~~or the~~ the "California Exhaust Emission Standards and Test Procedures for 2005-2012 and Later Small Off-Road Engines," adopted July 26, 2004, ~~and last amended October 25, 2012; or, the collective "California Exhaust Emission~~~~

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Amend Title 13, California Code of Regulations, § 2404, to read:

**§ 2404. Emission Control Labels and Consumer Information – 1995 and Later Small Off-Road Engines.**

(a) ~~Purpose.~~ Purpose. The Air Resources Board recognizes that certain emissions-critical or emissions-related parts must be properly identified and maintained in order for engines to meet the applicable emission standards. In addition, the Board recognizes that information regarding engines' emissions levels may influence consumer choice. These specifications require engine or equipment manufacturers to affix a label (or labels) on each production engine (or equipment, as applicable) to provide the engine or equipment owner and service mechanic with information necessary for the proper maintenance of these parts in customer use. These specifications further require engine or equipment manufacturers to make information regarding relative emissions levels available to potential ultimate purchasers. For engines used in auxiliary power systems which, in turn, are used to comply with the diesel-fueled commercial vehicle idling requirements of title 13, CCR, section 2485(c)(3)(A), additional labeling requirements for the engine or equipment manufacturers apply, as set forth in section 35.B.4 of the "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles," as incorporated by reference in title 13, CCR, section 1956.8(b).

(b) through (l) [No Change.]

NOTE: Authority cited: Sections 39600, 39601, 43013, 43017, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

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**§ 2404. Emission Control Labels and Consumer Information – 1995 and Later Small Off-Road Engines.**

\* \* \* \*

(m) Zero-Emission Equipment Label Content and Placement.

(1) A manufacturer of zero-emission small off-road equipment has the option to place a label on a piece of equipment, which has earned zero-emission equipment credits, to facilitate identification of such equipment by the ultimate purchaser that the equipment was certified as zero-emission small off-road equipment, and thereby meets the required professional-level specifications indicated in Table 1, subsection 2108.1(b)(4)(D), as applicable.

(A) Such label must read, "This is a professional-level, California-certified zero-emission [indicate equipment type]."

(B) Use of this option does not relieve a manufacturer of zero-emission small off-road equipment of the other label requirements.

(2) The manufacturer of zero-emission small off-road equipment must submit, with its certification application, a statement attesting that its label(s) comply with these requirements.

(3) Samples of all such labels used by a manufacturer of zero-emission small off-road equipment must be submitted to the Executive Officer within thirty days after the start of production.

\* \* \* \*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

~~**§ 2405. Defects Warranty Requirements for 1995 and Later Small Off-Road Engines.**~~

~~(a) [No Change]~~

~~(b) General Emissions Warranty Coverage. The manufacturer of each small off-road engine must warrant to the ultimate purchaser and each subsequent purchaser that the engine is~~

~~(1) Designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board pursuant to its authority in Chapters 1 and 2, Part 5, Division 26 of the Health and Safety Code; and~~



~~Off-Road Engines," adopted July 26, 2004, as applicable and as last amended February 24, 2019; or, the collective "California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines; Engine-Testing Procedures (Part 1054)," adopted October 25, 2012; and, the "California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines; Engine-Testing Procedures (Part 1065)," adopted October 25, 2012, which are incorporated herein by reference.~~

~~NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.~~

**§ 2404. Emission Control Labels and Consumer Information - 1995 and Later Small Off-Road Engines.**

\* \* \* \* \*

(c) Engine Label Content and Location.

\* \* \* \* \*

(4) The engine label must contain the following information:

(A) The label heading must read: "IMPORTANT ENGINE INFORMATION"; or "IMPORTANT EMISSION INFORMATION"; or "EMISSION CONTROL INFORMATION".

\* \* \* \* \*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

~~**§ 2407. New Engine Compliance and Production Line Testing—New Small Off-Road Engine Selection, Evaluation, and Enforcement Action.**~~

~~\* \* \* \* \*~~

~~(a)(7) Engines must be randomly chosen from the selected engine family or subgroup. Each chosen engine must be tested as applicable, according to the "California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines" ("Emission Standards and Test Procedures"), adopted March 20, 1992, and last amended July 26, 2004; or the "California Exhaust Emission Standards and Test Procedures for 2005-2012 and Later Small Off-Road Engines," adopted July 26, 2004, and last amended October 25, 2012; or, the collective "California Exhaust Emission~~

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~~§ 2404. Emission Control Labels and Consumer Information 1995 and Later Small Off-Road Engines.~~

~~\*\*\*\*~~

~~(m) Zero-Emission Equipment Label Content and Placement.~~

~~(1) A manufacturer of zero-emission small off-road equipment has the option to place a label on a piece of equipment, which has earned zero-emission equipment credits, to facilitate identification of such equipment by the ultimate purchaser that the equipment was certified as zero-emission small off-road equipment, and thereby meets the required professional-level specifications indicated in Table 1, subsection 2108.1(b)(4)(D), as applicable.~~

~~(A) Such label must read, "This is a professional-level, California-certified zero-emission [indicate equipment type]."~~

~~(B) Use of this option does not relieve a manufacturer of zero-emission small off-road equipment of the other label requirements.~~

~~(2) The manufacturer of zero-emission small off-road equipment must submit, with its certification application, a statement attesting that its label(s) comply with these requirements.~~

~~(3) Samples of all such labels used by a manufacturer of zero-emission small off-road equipment must be submitted to the Executive Officer within thirty days after the start of production.~~

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~~NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.~~

**§ 2405. Defects Warranty Requirements for 1995 and Later Small Off-Road Engines.**

(a) [No Change]

(b) General Emissions Warranty Coverage. The manufacturer of each small off-road engine must warrant to the ultimate purchaser and each subsequent purchaser that the engine is:

(1) Designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board pursuant to its authority in Chapters 1 and 2, Part 5, Division 26 of the Health and Safety Code; and

(2) Free from defects in materials and workmanship that cause the failure of a warranted part to be identical in all material respects to the part as described in the engine manufacturer's application for certification for a minimum period of two years.

\* \* \* \*

(h) Zero-Emission Equipment Warranty Requirements.

(1) The manufacturer of zero-emission small off-road equipment that wishes to obtain zero-emission equipment credits must warrant to the ultimate purchaser, and each subsequent purchaser, that the equipment, including batteries and battery chargers, as applicable, is:

(A) Designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board; and,

(B) Free from defects in materials and workmanship that cause the failure of a warranted part to be identical in all material respects to the part as described in the manufacturer of zero-emission small off-road equipment's application for certification for a minimum period of two years.

(2) A manufacturer of zero-emission small off-road equipment may establish contractual agreements with a battery supplier, as necessary, to satisfy the specified battery and battery charger warranty coverage over the required warranty period. The equipment manufacturer will remain ultimately liable for the warranty coverage.

\* \* \* \*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

**§ 2406. Emission Control System Warranty Statement.**

(a) [No Change]

(b) Warranty Contact Requirement

(1) Commencing with the 1995 calendar year, each manufacturer must furnish with each new engine a warranty statement that generally describes the obligations and rights of the manufacturer and owner under this article. Manufacturers must also include in the warranty statement a phone number the

consumer may use to obtain their nearest franchised United States service center.

(2) The service center phone number must be staffed with at least one English speaking contact. The contact must be able to respond to inquiries in real time or if the volume of calls precludes a real time response, within one business day.

(c) [No Change]

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

~~§ 2408. Emission Reduction Credits – Certification Averaging, Banking, and Trading Provisions.~~

~~(a) [No Change]~~

~~(b) General provisions.~~

~~(1) [No Change]~~

~~(2) An engine family may use the averaging, banking and trading provisions for HC+NO<sub>x</sub> and NMHC+NO<sub>x</sub> and Particulate Matter emissions if it is subject to regulation under this article with certain exceptions specified in paragraph (3) of this section. HC+NO<sub>x</sub> and Particulate Matter credits are interchangeable subject to the limitations on credit generation, credit usage, cross-class averaging and other provisions described in this section.~~

~~\* \* \* \*~~

~~(d) Banking.~~

~~(1) to (3) [No Change]~~

~~(4) Commencing with the 2009 model year, any previously banked certification emission credits and any new certification emission credits earned can be used for up to five years. In the sixth year, any unused certification credits will expire. (For example, if a 2009 model year engine family earns emission credits, those emission credits may be used or banked until the 2014 model year. Any remaining banked credits earned with the 2009 model year, will be invalid for use in the 2015 and subsequent model years.)~~

~~\* \* \* \*~~

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~~Off Road Engines," adopted July 26, 2004, as applicable and as last amended February 24, 2010 October 25, 2012; or, the collective "California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines; Engine-Testing Procedures (Part 1054)," adopted October 25, 2012; and, the "California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines; Engine-Testing Procedures (Part 1065)," adopted October 25, 2012, which isare incorporated herein by reference.~~

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

**§ 2404. Emission Control Labels and Consumer Information - 1995 and Later Small Off-Road Engines.**

\* \* \* \* \*

(c) Engine Label Content and Location.

\* \* \* \* \*

(4) The engine label must contain the following information:

(A) The label heading must read: "IMPORTANT ENGINE INFORMATION"; or "IMPORTANT EMISSION INFORMATION"; or "EMISSION CONTROL INFORMATION".

\* \* \* \* \*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

**§ 2407. New Engine Compliance and Production Line Testing—New Small Off-Road Engine Selection, Evaluation, and Enforcement Action.**

\* \* \* \* \*

(a)(7) Engines must be randomly chosen from the selected engine family or subgroup. Each chosen engine must be tested as applicable, according to the "California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines" ("Emission Standards and Test Procedures"), adopted March 20, 1992, and last amended July 26, 2004; or the "California Exhaust Emission Standards and Test Procedures for 2005-2012 and Later Small Off-Road Engines," adopted July 26, 2004, and last amended October 25, 2012; or, the collective "California Exhaust Emission

Standards and Test Procedures for New 2013 and Later Small Off-Road Engines; Engine-Testing Procedures (Part 1054),” adopted October 25, 2012; and, the “California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines; Engine-Testing Procedures (Part 1065),” adopted October 25, 2012—as applicable, to determine its emissions. Unique specialty hardware and personnel normally necessary to prepare the engine for performance of the test as set forth in the Procedures must be supplied by the engine manufacturer within seven days after the request for such specialty hardware or personnel. Failure to supply this unique specialty hardware or personnel may not be used by the engine manufacturer as a cause for invalidation of the subsequent tests.

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NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

~~consumer may use to obtain their nearest franchised United States service center.~~

~~(2) The service center phone number must be staffed with at least one English speaking contact. The contact must be able to respond to inquiries in real time or if the volume of calls precludes a real time response, within one business day.~~

(c) [No Change]

~~NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.~~

**§ 2408. Emission Reduction Credits – Certification Averaging, Banking, and Trading Provisions.**

(a) [No Change]

(b) General provisions.

(1) [No Change]

(2) An engine family may use the averaging, banking and trading provisions for HC+NO<sub>x</sub> and NMHC+NO<sub>x</sub> and Particulate Matter emissions if it is subject to regulation under this article with certain exceptions specified in paragraph (3) of this section. ~~HC+NO<sub>x</sub> and Particulate Matter credits are interchangeable subject to the limitations on credit generation, credit usage, cross-class averaging and other provisions described in this section.~~

\* \* \* \*

(d) Banking.

(1) to (3) [No Change]

(4) Commencing with the 2009 model year, any previously banked certification emission credits and any new certification emission credits earned can be used for up to five years. In the sixth year, any unused certification credits will expire. (For example, if a 2009 model year engine family earns emission credits, those emission credits may be used or banked until the 2014 model year. Any remaining banked credits earned with the 2009 model year, will be invalid for use in the 2015 and subsequent model years.)

\* \* \* \*

(f) Credit calculation and manufacturer compliance with emission standards.

(1) For each engine family, HC+NO<sub>x</sub> and Particulate Matter certification emission credits (positive or negative) are to be calculated according to the following equation and rounded to the nearest gram. Consistent units are to be used throughout the equation.

$$\text{Credits} = (\text{Standard} - \text{FEL}) \times \text{Sales} \times \text{Power} \times \text{EDP} \times \text{Load Factor}$$

Where:

Standard = the current and applicable small off-road engine HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) or Particulate Matter emission standard as determined in Section 2403.

FEL = the family emission limit for the engine family in grams per brake-horsepower hour or g/kW-hr as applicable.

Sales = eligible sales as defined in section 2401. Annual sales projections are used to project credit availability for initial certification. Actual sales volume is used in determining actual credits for end-of-year compliance determination.

Power = the sales weighted maximum modal power, in horsepower or kilowatts as applicable. This is determined by multiplying the maximum modal power of each configuration within the family by its eligible sales, summing across all configurations and dividing by the eligible sales of the entire family.

Manufacturers may use an alternative if approved by the Executive Officer (for example, maximum modal power of the test engine).

EDP = the Emissions Durability Period for which the engine family was certified in hours.

Load Factor = For Test Cycle A and Test Cycle B, the Load Factor = 47% (i.e., 0.47). For Test Cycle C, the Load Factor = 85% (i.e., 0.85). For approved alternate test procedures, the load factor must be calculated according to the following formula:

$$\sum_{i=1}^n (\% \text{MTT mode}_i) \times (\% \text{MTS mode}_i) \times (\text{WF mode}_i)$$

Where:

%MTT mode<sub>i</sub> = percent of the maximum torque for mode i

%MTS mode<sub>i</sub> = percent of the maximum engine rotational speed for mode i

WF mode<sub>i</sub> = the weighting factor for mode i

(2) [No Change]

(3) If, as a result of production line testing as required in section 2407, an engine family is determined to be in noncompliance, the



manufacturer may ~~raise its~~ recertify to a higher FEL for past and future production as necessary. Further, a manufacturer may carry a negative credit balance (known also as a credit deficit) for the subject class and model year forward to the next model year. The credit deficit may be no larger than that created by the nonconforming family. If the credit deficit still exists after the model year following the model year in which the nonconformity occurred, the manufacturer must obtain and apply credits to offset the remaining credit deficit at a rate of 1.2 grams for each gram of deficit within the next-second model year after the model year of the initial deficit. The provisions of this paragraph are subject to the limitations in paragraph (4) of this section.

(4) Regulations elsewhere in this section notwithstanding, if an engine manufacturer experiences two or more production line testing failures pursuant to the regulations in section 2407 of this article in a given model year, the manufacturer may ~~raise the FEL of~~ recertify previously produced engines to a higher FEL only to the extent that such engines represent no more than 10% of the manufacturer's total eligible sales for that model year. For any additional engines determined to be in noncompliance, the manufacturer must conduct offsetting projects approved in advance by the Executive Officer.

(5) If, as a result of production line testing under section 2407, a manufacturer desires to lower its FEL, it may do so subject to Executive Officer approval and demonstration that the family would meet the new FEL in the production line testing using the existing data. A manufacturer may lower their FEL at most once per model year.

(6) [No Change]

(g) Certification Using Credits.

(1) In the application for certification a manufacturer must:

\* \* \* \*

(E) 1. If the engine family is projected to generate negative emission credits, state specifically the source (manufacturer/engine family or reserved) and quantity of the credits necessary to offset the credit deficit according to projected production. Zero emission equipment credits can be used to compensate for negative certification emission credits, up to forty percent above the standard. If an engine family has emissions higher than forty percent above the standards, certification emission credits can be used to account for the remaining emission deficit.

\* \* \* \*

(i) End-of-year and final reports.

- 9 -

Date of Release of 45-Day Notice: October 3, 2008

Date of Board Hearing: November 21, 2008

Dates of 15-Day Notice Period: February 4, 2010 – February 19, 2010

Final Regulation Order, as adopted February 24, 2010, and corrected March 29, 2010

\* \* \* \*

(3) (A) End-of year reports must be submitted within 90 days of the end of the model year to: Chief, Mobile Source Operations Division, Air Resources Board, 95289480 Telstar Avenue, Suite 4, El Monte, CA 91731.

(B) Unless otherwise approved by the Executive Officer, final reports must be submitted within 270 days of the end of the model year to: Chief, Mobile Source Operations Division, Air Resources Board, 95289480 Telstar Avenue, Suite 4, El Monte, CA 91731.

\* \* \* \*

(7) If ARB or the manufacturer determines that a reporting error occurred on an end-of-year or final report previously submitted to ARB under this section, the manufacturer's credits and credit calculations must be recalculated. Erroneous positive credits will be void except as provided in paragraph (hg) of this section. Erroneous negative credit balances may be adjusted by ARB.

\* \* \* \*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

#### **§ 2408.1 Emission Reduction Credits – Zero-Emission Equipment Credits Averaging, Banking, and Trading Provisions.**

(a) Applicability. The requirements of section 2408.1 are applicable to all small off-road equipment produced in the 2010 and later model years. Equipment certified to the voluntary standards in subsection 2403(b)(2), or equipment that receive funding through any emission reduction programs, are not eligible for participation in the zero-emission equipment credit averaging, banking, and trading program. Participation in this program is voluntary, but if a manufacturer elects to participate, it must do so in compliance with the provisions set forth in section 2408.1. The provisions of section 2408.1 are limited to HC+NO<sub>x</sub> (or NMHC+NO<sub>x</sub>, as applicable) and Particulate Matter emissions.

(b) General provisions.

(1) Zero-emission equipment credits may be used to offset emissions for an engine family, if the engine family is either a carry-over engine family for which the original Executive Order was issued for the 2009 or earlier model year, or is certified to comply with applicable emissions standards for 2009 and subsequent model year small off-road engines.

(2) A manufacturer must only include in its calculation of zero-emission equipment credit generation, zero-emission small off-road equipment that are sold and used in California.

(3) For an engine family using zero-emission equipment credits to compensate for negative certification emission credits, a manufacturer may, at its option, include its entire production of that engine family in its calculation of credit usage for a given model year.

(4) A manufacturer of zero-emission small off-road equipment that wishes to generate zero emission equipment credits must certify zero-emission equipment engine families at Family Emission Limits (FEL) of zero grams per kilowatt-hour.

(A) A manufacturer of zero-emission small off-road equipment which certifies an engine family as a zero-emission equipment engine family may generate positive zero-emission equipment credits for averaging, banking, or trading, or a combination thereof.

(B) Except as noted in section 2408.1(b)(4)(C), an engine family certified as a zero-emission equipment engine family must meet the following durability requirements:

1. 300 hours for zero-emission small off-road equipment that functions and performs equivalently to equipment using spark-ignition engines with a displacement of less than or equal to 80cc,

2. 500 hours for zero-emission small off-road equipment that functions and performs equivalently to equipment using spark-ignition engines with a displacement between 80cc and 225cc.

(C) An engine family that is certified as a zero-emission equipment engine family, but cannot achieve the full durability period, may generate 75 percent of the zero-emission equipment credits if the zero-emission equipment engine family can meet a minimum of 75 percent up to 99 percent of the durability period. The amount of zero-emission credits would be calculated as 75 percent of the result obtained using the equation in section 2408.1(f). This allowance will remain in effect through the 2012 model year, after which all zero-emission small off-road equipment will be required to meet the full durability requirement specified in subsection 2408.1(b)(4)(B).

(D) Minimum professional-level requirements for zero-emission small off-road equipment.

1. An engine family certified as a zero-emission equipment engine family must be able to operate continuously, allowing for any

battery exchanges, for a minimum of one hour and meet the minimum specifications indicated in Table 1.

Table 1. Minimum Professional Level Requirements For Zero-Emission Equipment Eligibility.

<u>Product Type</u>	<u>Durability Test Power Load</u>	<u>Minimum Supplied Battery Capacity (Using a maximum of four individual batteries)</u>	<u>Minimum Cutter Speed</u>	<u>Other Performance Requirements or Parameters</u>
<u>Chainsaw</u>	<u>0.6 kW</u>	<u>295 Wh</u>	<u>8,000 revolutions/min (rpm)</u>	<u>Minimum 12-inch bar length (305 millimeter (mm))</u>
<u>Trimmer/ Brushcutter</u>	<u>0.5 kW</u>	<u>295 Wh</u>	<u>Minimum tip speed of 20,000 feet/min(102 meters/sec) with double line extension and line diameter of 0.080 inch (2mm)</u>	<u>Minimum cutting swath of 12 inch (305mm)</u>
<u>Hedge Clipper</u>	<u>0.4 kW</u>	<u>180 Wh</u>	<u>1,400 strokes/min</u>	<ul style="list-style-type: none"> <li>• <u>Minimum 20-inch (508mm) cutter length</u></li> <li>• <u>Double reciprocating</u></li> <li>• <u>Minimum 0.709 inch (18mm) tooth opening</u></li> </ul>

<u>Blower (Handheld)</u>	<u>See "Other Performance Requirements or Parameters"</u>	<u>395 Wh</u>	<u>=</u>	<ul style="list-style-type: none"> <li>• <u>Exit velocity multiplied by volume (measured at the discharge pipe at the same time) shall be 47,000 miles-ft<sup>3</sup>/hour-min. (3,564 meter-meter<sup>3</sup>/hour-min.)</u></li> <li>• <u>The blower rating must be based on a measurement with single discharge pipe using the American National Standards Institute (ANSI) B175.2 test procedure.</u></li> </ul>
<u>Blower (Backpack)</u>	<u>See "Other Performance Requirements or Parameters"</u>	<u>790 Wh</u>	<u>=</u>	<ul style="list-style-type: none"> <li>• <u>Exit velocity multiplied by volume (measured at the discharge pipe at the same time) shall be 68,000 miles-ft<sup>3</sup>/hour-min. (4,760 meter-meter<sup>3</sup>/hour-min)</u></li> <li>• <u>The blower rating must be</u></li> </ul>

				<u>based on a measurement with single discharge pipe using the ANSI B175.2 test procedure.</u>
<u>Edger</u>	<u>0.5 kW</u>	<u>295 Wh</u>	<u>6,500 rpm</u>	=
<u>Split Boom System</u>	<u>0.5 kW</u>	<u>295 Wh</u>	<u>6,500 rpm</u>	=
<u>Walk-Behind Lawnmower</u>	<u>3.0 kW</u>	<u>1,400 Wh</u>	=	<ul style="list-style-type: none"> <li>• <u>Minimum battery capacity to operate one hour over a five-mode duty cycle (with no idle mode) at 3,060 rpm</u></li> <li>• <u>A minimum cutting width of 21 inch, and the maximum speed defined by the ANSI B71.1 blade tip speed safety requirements.</u></li> </ul>

2. Durability testing must be performed in an equipment configuration that is representative of actual operation of the equipment by the end user (i.e., using standard battery package cycling).

3. The minimum battery durability/life cycle is based on the maximum durability power specified and the equivalent engine duty cycle (i.e., handheld equipment is 85 percent at 100 percent load rated speed, and

15 percent at minimum load idle speed; a walk-behind lawn mower is a five-mode test cycle [without an idle mode] at 3,060 rpm).

(E) In order to generate zero-emission equipment credits, manufacturers of battery-powered zero-emission small off-road equipment must provide the ultimate purchaser with a standard battery package, as defined in section 2401.

(F) 1. A manufacturer of zero-emission small off-road equipment must include in the certification application, a description of an operational sequence over the eight-hour workday for the applicable zero-emission equipment engine family.

2. Total time for battery exchanges during an eight-hour workday for an engine family certified as a zero-emission equipment engine family must not exceed the total refueling time for that of an equivalently performing professional-level gasoline-powered piece of equipment during an eight-hour period of operation.

(G) Manufacturers must demonstrate compliance under the averaging, banking, and trading provisions for a particular model year within 270 days after the end of the model year.

(H) 1. Batteries in an equipment manufacturer's original standard battery package must be identified with unique part numbers that differ from the part numbers of any applicable replacement batteries.

2. Replacement batteries cannot be used to generate zero-emission equipment credits.

(c) Averaging.

(1) Fifty percent of negative credits from engine families with FELs above the applicable emission standard may be offset by positive zero-emission equipment credits, as allowed under the provisions of section 2408.1. The remaining negative credits must be offset by positive certification emission credits. Averaging of credits in this manner is used to determine compliance under subsection 2408(f)(2).

(2) Subject to the limitations above, zero-emission equipment credits used in averaging for a given model year may be obtained from zero-emission equipment credits banked in previous model years, or zero-emission equipment credits of previous model years obtained through trading.

(3) Zero-emission equipment credits generated from zero-emission small off-road equipment that performs equivalently to professional-level spark-

ignition engine powered equipment, with a displacement of 80cc or less, may only be used to offset emissions from other gasoline-powered equipment with a displacement of 80cc or less.

(4) Zero-emission equipment credits generated from zero-emission small off-road equipment that performs equivalently to spark-ignition engine powered equipment, with a displacement between 80cc and 225cc, may only be used to offset emissions from other gasoline-powered equipment with a displacement between 80cc and 225cc.

(d) Banking.

(1) Beginning with the 2010 model year, a manufacturer of zero-emission small off-road equipment that meets the zero-emission equipment credit requirements may bank credits for that engine family in the model year of certification for use in future years in averaging and trading.

(2) A manufacturer of zero-emission small off-road equipment may bank zero-emission equipment credits only after the end of the model year and after ARB has reviewed the manufacturer's end-of-year reports. During the model year, and before submittal of the end-of-year report, credits originally designated in the certification process for banking will be considered reserved, and may be re-designated for trading in the end-of-year report and final report.

(3) Zero-emission equipment credits may be banked for up to five years.

(4) Unused zero-emission equipment credits after five years will expire and may no longer be used toward offsetting negative certification emission credits from other engine families.

(e) Trading

(1) Zero-emission equipment credits for trading can be obtained from zero-emission equipment credits banked in previous model years.

(2) Traded zero-emission equipment credits can be used for averaging or banking for up to five years from the time of zero-emission equipment credit generation.

(f) Credit calculation and manufacturer compliance with emission standards. For each engine family, HC+NO<sub>x</sub> and Particulate Matter zero-emission equipment credits are to be calculated according to the following equation and rounded to the nearest gram. Consistent units are to be used throughout the equation.



Zero-Emission Equipment Credits = Exhaust Standard x Sales x Power x EDP x Load Factor

Where:

Exhaust Standard = the current and applicable small off-road engine HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>), or Particulate Matter, exhaust emission standard, expressed in grams per kilowatt-hour (g/kW-hr), as determined in section 2403, based on the engine displacement of equivalently performing, professional level, gasoline-powered equipment.

Sales = eligible sales as defined in section 2401. Annual sales projections are used to project credit availability for initial certification. Actual sales volume is used in determining actual credits for end-of-year compliance determination.

Power = the product of the battery capacity delivered in one hour and the motor efficiency, expressed in kilowatts (kW). The motor efficiency is a declared value from the motor manufacturer.

Battery capacity = the total amount of electrical energy available in the equipment's standard battery package, expressed in Watt-hours (Wh).

EDP = the Emissions Durability Period for which the engine family was certified, expressed in hours (hr).

Load Factor = For Test Cycle A and Test Cycle B, the Load Factor = 47 percent (i.e., 0.47). For Test Cycle C, the Load Factor = 85 percent (i.e., 0.85). For alternate test procedures, a manufacturer must submit for approval an alternative method for calculating the load factor.

(g) Certification Using Zero-Emission Equipment Credits.

(1) In the application for certification, a manufacturer using zero-emission equipment credits must:

(A) Submit a statement that the equipment for which certification is requested will not, to the best of the manufacturer's belief, cause the manufacturer to be in noncompliance, under subsection 2408(f)(2), when accounting for the total amount of credits used for all of the manufacturer's applicable engine families.

(B) Indicate the projected number of zero-emission equipment credits generated/required for this engine family, the projected applicable eligible sales volume, and the values required to calculate zero-emission equipment credits as given in subsection 2408.1(f).

(C) Indicate that the zero-emission equipment credits used came from the same displacement category as those needed for the engine family.

(D) Submit calculations in accordance with subsection 2408.1(f) of the projected zero-emission equipment credits based on production projections for each engine family.

(E) Specify the recipient (manufacturer/engine family or reserved) and quantity of the zero-emission equipment credits used (whether they are banked, traded, or to be used to offset a deficit).

(2) The manufacturer of zero-emission small off-road equipment may supply the information required in subsections 2408.1(g)(1)(C), 2408.1(g)(1)(D), and 2408.1(g)(1)(E), by use of an electronic spreadsheet detailing the manufacturer's annual production plans, and the zero-emission equipment credits generated by each zero-emission equipment engine family.

(3) All Executive Orders issued are conditional upon manufacturer compliance with the provisions of this section 2408.1 both during and after the model year of production.

(4) Failure to comply with all provisions of this section 2408.1 will be considered to be a failure to satisfy the conditions upon which the Executive Order was issued, and the Executive Order may be determined to be void *ab initio*.

(5) The manufacturer bears the burden of establishing to the satisfaction of the Executive Officer that the conditions upon which the Executive Order was issued were satisfied or waived.

(h) Maintenance of records.

(1) The manufacturer of zero-emission small off-road equipment must establish, maintain, and retain the following adequately organized and indexed records for each engine family:

(A) ARB engine family identification code,

(B) Family Emission Limit (FEL),

(C) Maximum equivalent modal power for each configuration sold or an alternative approved by the Executive Officer,

(D) Projected sales volume for the model year,

(E) Records appropriate to establish the quantities of equipment that constitute eligible sales for each power rating for each FEL, and

(F) Records of standard battery package sales per equipment sales, if batteries were sold separately from the equipment.

(2) Any manufacturer of zero-emission small off-road equipment participating in trading reserved zero-emission equipment credits must maintain the following records on a quarterly basis for each such engine family:

(A) The engine family,

(B) The actual quarterly and cumulative applicable production/sales volume,

(C) The values required to calculate zero-emission equipment credits as given in subsection 2408.1(f),

(D) The resulting number of zero-emission equipment credits generated, and

(E) How and where zero-emission equipment credit surpluses are dispersed.

(3) The manufacturer must retain all records required to be maintained under this section 2408.1 for a period of eight years from the due date for the end-of-year report. Records may be retained as hard copy or reduced to microfilm, diskettes, or other media, depending on the manufacturer's record retention procedure.

(4) Nothing in this section 2408.1 limits the Executive Officer's discretion in requiring the manufacturer to retain additional records or submit information not specifically required by this section 2408.1.

(5) Pursuant to a request made by the Executive Officer, the manufacturer must submit to the Executive Officer the information that the manufacturer is required to retain.

(6) ARB may void *ab initio* the Executive Order for an engine family for which the manufacturer fails to retain the records required in this section 2408.1 or to provide such information to the Executive Officer upon request.

(i) End-of-year and final reports.

(1) End-of-year and final reports must indicate the engine family, the actual sales volume, the values required to calculate zero-emission equipment

credits as given in subsection 2408.1(f), and the number of zero-emission equipment credits generated/required. Manufacturers of zero-emission small off-road equipment must also submit how and where zero-emission equipment credit surpluses were dispersed (or are to be banked). Copies of contracts related to zero-emission equipment credit trading must be included or supplied by the broker, if applicable. The report must include a calculation of zero-emission equipment credit balances to show that the zero-emission equipment credit summation for each class of engines is equal to or greater than zero.

(2) The calculation of eligible sales, as defined in section 2401, for end-of-year and final reports, must be based on the location of the point of first retail sale (for example, retail customer or dealer), which is also called the final product purchase location. Upon advance written request, the Executive Officer will consider other methods to track equipment and batteries (if sold separately) for credit calculation purposes, such as shipments to distributors of products intended for sale in California, that provide high levels of confidence that eligible sales are accurately counted.

(3) End-of-year report and final report submissions.

(A) End-of-year reports must be submitted within 90 days of the end of the model year to: Chief, Mobile Source Operations Division, Air Resources Board, 9480 Telstar Avenue, Suite 4, El Monte, CA 91731.

(B) Unless otherwise approved by the Executive Officer, final reports must be submitted within 270 days of the end of the model year to: Chief, Mobile Source Operations Division, Air Resources Board, 9480 Telstar Avenue, Suite 4, El Monte, CA 91731.

(4) A manufacturer of zero-emission small off-road equipment that generates zero-emission equipment credits only for banking and that fails to submit end-of-year reports in the applicable specified time period (90 days after the end of the model year) may not use the zero-emission equipment credits until such reports are received and reviewed by ARB. Use of projected zero-emission equipment credits pending ARB review is not permitted in these circumstances.

(5) Errors discovered by either ARB or the manufacturer in the end-of-year report, including errors in zero-emission equipment credit calculation, may be corrected in the final report.

(6) If ARB or the manufacturer determines that a reporting error occurred in an end-of-year or final report previously submitted to ARB under this section 2408.1, the manufacturer's zero-emission equipment credits and credit calculations must be recalculated. Erroneous zero-emission equipment credits will be void except as provided in subsection 2408.1(g).

(7) If within 270 days of the end of the model year, an ARB review reveals a reporting error in the manufacturer's favor (that is, resulting in an increased zero-emission equipment credit balance), or if the manufacturer discovers such an error within 270 days of the end of the model year, ARB will restore the zero-emission equipment credits for use by the manufacturer.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150, 43151, 43152, 43153, 43154, 43205.5 and 43210, 43210.5, 43211, and 43212, Health and Safety Code.

**§ 2409. Emission Reduction Credits – Production Credit Program for New Engines.**

(a) Applicability. The 1998 to 2009 model year ~~and later~~ small off-road engines subject to the provisions of this article are eligible to participate in the production emission credit program described in this section for HC +NO<sub>x</sub> (or NMHC+NO<sub>x</sub>, as applicable) and Particulate Matter emissions. Previously banked production emission credits may continue to be used until exhausted through calendar year 2010 but production credits generated after model year 2009 will not be accepted into the production credit program.

(b) General provisions.

(1) The production credit program for eligible small off-road engines is described in this section. Participation in this program is voluntary.

(2) Any 2000 to 2009 model year ~~or later~~ engine family subject to the provisions of this article is eligible to participate in the production credit program described in this section. Any 1998 or 1999 model year engine family subject to the provisions of this article is eligible to participate in the production emissions credit program described in this section provided it conforms ~~with~~ to the requirements of section 2403.

\* \* \* \*

(5) Positive credits generated in a given model year may be used in that model year and/or in any subsequent model year. Positive credit generation may continue through the 2009 model year.

(6) All production credits will retain full value through year 2010. In model year 2011, all production emission credit balances will expire.

(c) [No Change]

(d) Banking.

\* \* \* \*

(3) As mentioned in paragraph (b)(6) of this section, production credits banked pursuant to this section will expire as of the 2011 model year and will no longer be available for use in averaging or trading.

\* \* \* \*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

## FINAL REGULATION ORDER

NOTE: This document is written in a style to indicate changes from the existing provisions. All existing language is indicated by plain text. All additions to language are indicated by underlined text. All deletions to language are indicated by ~~strikeout~~. Only those portions containing the suggested modifications from existing provisions are included. All other portions remain unchanged and are indicated by the symbol “\* \* \* \* \*” for reference.

Amend sections 2111, 2112, 2411, 2412, 2413, and 2415, title 13 California Code of Regulations, and the incorporated California Exhaust Emission Standards and Test Procedures for 1997 and Later Off-Highway Recreational Vehicles, to read as follows:

### ~~§ 2111. Applicability.~~

(a) These procedures shall apply to:

(1) California-certified 1982 and subsequent model-year passenger cars, light-duty trucks, medium-duty vehicles, heavy-duty vehicles, motorcycles, California-certified 1997 and subsequent model-year off-road motorcycles and all-terrain vehicles, and 2007 and subsequent model-year off-road sport vehicles, off-road utility vehicles, and sand cars, including those federally certified vehicles which are sold in California pursuant to Health and Safety Code 43102,

\* \* \* \* \*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018 and 43105, Health and Safety Code.

Reference: Sections 43000, 43009.5, 43013, 43018, 43101, 43104, 43105, 43106, 43107, and 43204-43205.5, Health and Safety Code.

### ~~§ 2112. Definitions.~~

\* \* \* \* \*

(l)(12) For 1997 and subsequent model year off-road motorcycles, all-terrain vehicles, and for 2007 and subsequent model year off-road sport vehicles, off-road utility vehicles, sand cars, and engines used in such vehicles, a period of use of five years or 10,000 kilometers (6,250 miles), whichever first occurs.

\* \* \* \* \*

~~NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43104 and 43105 and 43806, Health and Safety Code; and Section 28114, Vehicle Code.~~

~~Reference: Sections 39002, 39003, 39500, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43107, 43202, 43204-43205.5, 43206, 43210, 43211, 43212, 43213 and 43806, Health and Safety Code; and Section 28114, Vehicle Code.~~

**§ 2411. Definitions.**

(a) The definitions in Section 1900(b), Chapter 1, Division 3, Title 13 of the California Code of Regulations, apply with the following additions:

(1) "All-Terrain Vehicle (ATV)" means any ~~motorized~~ off-highway motor vehicle 50 inches (1270 mm) or less in overall width, that has all of the following features and characteristics: designed to travel on four or more low pressure tires, having a single seat designed to be straddled by the operator and or a single seat designed to be straddled by the operator and a seat for no more than one passenger, having handlebars for steering control, and intended for use by a single operator and no passengers. The vehicle is designed to carry not more than 350 pounds (160 kg) payload, excluding the operator, and is powered by an internal combustion engine. Width shall be exclusive of accessories and optional equipment. A golf cart, off-road sport vehicle, off-road utility vehicle, or sand car is not, for purposes of this regulation, to be classified as an all-terrain vehicle.

\* \* \* \* \*

(13) "Off-Highway Recreational Vehicle Engines" or "Engines" are identified as: two-stroke or four-stroke, air-cooled, liquid-cooled, gasoline, diesel, or alternate-fuel powered engines or electric motors that are designed for powering off-road recreational vehicles and engines included in, ~~but not limited to use in,~~ the following: off-road motorcycles, all-terrain vehicles, off-road sport vehicles, off-road utility vehicles, sand cars, and golf carts. All engines and equipment that fall within the scope of the preemption of Section 209(e)(1)(A) of the Federal Clean Air Act, as amended, and as defined by regulation of the Environmental Protection Agency, are specifically not included within this category.

\* \* \* \* \*

(17) "Off-Road Sport Vehicle" means any off-highway motor vehicle that has all of the following features and characteristics: designed to travel on four wheels, having bench or bucket seating for one or more persons, having a steering wheel



for steering control, designed for operation over rough terrain, having a rear payload not exceeding 600 pounds, having an internal combustion engine with a displacement less than or equal to one liter, and is capable of speeds 25 miles per hour or more. Vehicles otherwise meeting the definition for sand cars but powered by an engine with a displacement less than or equal to one liter are considered off-road sport vehicles.

(18) "Off-Road Utility Vehicle" means any off-highway motor vehicle that has all of the following features and characteristics: designed to travel on four or more wheels, having bench or bucket seating for two or more persons, having a steering wheel for steering control, designed for operation over rough terrain, having an internal combustion engine with a displacement less than or equal to one liter, having a maximum brake power less than or equal to 30 kilowatts, capable of speeds 25 miles per hour or more, and having either 1) a rear payload of 350 pounds or more, or 2) seating for six or more passengers.

(19) "Sand Car" means any off-highway motor vehicle that has all of the following features and characteristics: designed to travel on four wheels, having bench or bucket seating for one or more persons, having a steering wheel for steering control, designed primarily for operation over sand dunes, and is powered by an internal combustion engine with a displacement greater than one liter. Vehicles otherwise meeting the criteria in the previous sentence that are powered by an engine with a displacement less than or equal to one liter are considered off-road sport vehicles.

(17)(20) . . . .

(18)(21) . . . .

(19)(22) . . . .

(20)(23) . . . .

(21)(24) . . . .

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, and 43107, Health and Safety Code.

Reference: Sections 43013, 43018, 43101, and 43107, Health and Safety Code.

## FINAL REGULATION ORDER

NOTE: This document is written in a style to indicate changes from the existing provisions. All existing language is indicated by plain text. All additions to language are indicated by underlined text. All deletions to language are indicated by ~~strikeout~~. Only those portions containing the suggested modifications from existing provisions are included. All other portions remain unchanged and are indicated by the symbol “\* \* \* \*” for reference.

Amend sections 2111, 2112, 2411, 2412, 2413, and 2415, title 13 California Code of Regulations, and the incorporated California Exhaust Emission Standards and Test Procedures for 1997 and Later Off-Highway Recreational Vehicles, to read as follows:

**§ 2412. Emission Standards and Test Procedures – New Off-Highway Recreational Vehicles and Engines.**

(a) This section applies to all off-highway recreational vehicles and engines used in such vehicles produced on or after January 1, 1997.

(b) For purposes of certification in California, manufacturers must comply with the following exhaust and evaporative emissions from new off-highway recreational vehicles and engines that are sold, leased, used, or introduced into commerce in California.

(1) Exhaust emissions must not exceed:

### Emission Standards

<i>Vehicle &amp; Model Year</i>	<i>Hydro-carbon</i>	<i>Oxides of Nitrogen</i>	<i>Carbon Monoxide</i>	<i>Particulate Matter<sup>1</sup></i>
Off-Road Motorcycles and All-Terrain Vehicles with Engines Greater Than 90 cc <sup>3</sup> —1997 and Later (g/km) <sup>4</sup>	1.2 <sup>2</sup>	-	15.0	-
Off-Road motorcycles and All-Terrain Vehicles with Engines 90 cc or Less —1999 and Later (g/km)	1.2 <sup>2</sup>	-	15.0	-
All-Terrain Vehicle Option —1997 and Later	Shall comply with exhaust emission standards equivalent to the off-road motorcycle and all-terrain vehicle standard using the utility test procedures set forth in CCR, Title 13, section 2403, and the incorporated document "California Exhaust Emission Standards and Test Procedures for 1995 and Later Small Off-Road Engines," which is hereby incorporated by reference herein. <sup>5</sup>			
Golf Carts in Federal Ozone Non-Attainment Areas —1997 and Later	ZERO	ZERO	ZERO	ZERO
Off-Road Motorcycle and All-Terrain Vehicle Option: 1997 and Later Vehicles with Engines Greater Than 90 cc, and 1999 and Later Vehicles with Engines 90 cc or Less	Vehicles and engines that do not meet the emissions standards noted above may be certified subject to the use restrictions described in subsection (f) below.			
	<ol style="list-style-type: none"> <li>1. — Applicable to diesel and two-stroke spark ignited engines only.</li> <li>2. — Compliance with the 1.2 grams per kilometer HC standard to be applied as a "corporate average" shall be determined as provided in subsection (d). Each engine family shall have only one applicable standard.</li> <li>3. — Cubic centimeter.</li> <li>4. — Grams per kilometer.</li> <li>5. — Compliance with the equivalent all-terrain vehicle HC standard to be applied as a "corporate average" shall be determined as provided in subsection (d). Each engine family shall have only one applicable standard.</li> </ol>			

Exhaust Emission Standards Based on  
Chassis-Based Testing

<u>Vehicle &amp; Model Year</u>	<u>Hydro-carbon (HC)</u>	<u>Oxides of Nitrogen (NO<sub>x</sub>)</u>	<u>Carbon Monoxide (CO)</u>	<u>Particulate Matter<sup>(4)</sup></u>
<u>Off-Road Motorcycles and All-Terrain Vehicles with Engines Greater Than 90 cc<sup>(1)</sup> 1997 and Later (g/km)<sup>(2)</sup></u>	<u>1.2<sup>(3)</sup></u>	=	<u>15.0</u>	=
<u>Off-Road motorcycles and All-Terrain Vehicles with Engines 90 cc or Less 1999 and Later (g/km)</u>	<u>1.2<sup>(3)</sup></u>	=	<u>15.0</u>	=
<u>Off-Road Motorcycle and All-Terrain Vehicle Option: 1997 and Later Vehicles with Engines Greater Than 90 cc, and 1999 and Later Vehicles with Engines 90 cc or Less</u>	<u>Vehicles and engines that do not meet the emissions standards noted above may be certified subject to the use restrictions described in subsection (f) below.</u>			
<u>Off-Road Sport Vehicles and Off-Road Utility Vehicles 2007 and Later (g/km)</u>	<u>1.2<sup>(3)</sup></u>	=	<u>15.0</u>	=
<u>Sand Cars 2007 and Later (g/km)</u>	<u>1.2<sup>(3)</sup></u>	=	<u>15.0</u>	=
<u>Golf Carts in Federal Ozone Non-Attainment Areas 1997 and Later</u>	<u>ZERO</u>	<u>ZERO</u>	<u>ZERO</u>	<u>ZERO</u>

1. Cubic centimeters.
2. Grams per kilometer.
3. Compliance with the 1.2 grams per kilometer HC standard to be applied as a "corporate average" shall be determined as provided in subsection (d). Each engine family shall have only one applicable standard.
4. Applicable to diesel and two-stroke spark ignited engines only.

Emission Standards Based on  
Optional Engine-Based Testing<sup>(1)</sup>

<u>Vehicle &amp; Model Year</u>	<u>Hydrocarbon plus Oxides of Nitrogen (HC+NO<sub>x</sub>)</u>	<u>Carbon Monoxide (CO)</u>	<u>Particulate Matter<sup>(5)</sup></u>
<u>All-Terrain Vehicles with engines less than 225 cc<sup>(2)</sup> 1997 and Later (g/kW-hr)<sup>(3)</sup></u>	<u>16.1<sup>(4)</sup></u>	<u>400</u>	=
<u>All Terrain Vehicles with engines greater than or equal to 225 cc 1997 and Later (g/kW-hr)</u>	<u>13.4<sup>(4)</sup></u>	<u>400</u>	=
<u>Off-Road Sport Vehicles and Off-Road Utility Vehicles  2007 and Later (g/kW-hr)</u>	<u>12.0<sup>(4)</sup></u>	<u>400</u>	=
<u>Sand Cars  2007 and Later (g/kW-hr)</u>	<u>13.4<sup>(4)</sup></u>	<u>400</u>	=

1. All-Terrain Vehicles, Off-Road Sport Vehicles, Off-Road Utility Vehicles, and Sand Cars may use the utility test procedures set forth in the "California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines," as incorporated by reference in CCR, title 13, section 2403(d). The test cycle is limited to the 6-mode Test Cycle A only.
2. Cubic centimeters.
3. Grams per kilowatt-hour.
4. Compliance with the optional HC+NO<sub>x</sub> standard to be applied as a "corporate average" shall be determined as provided in subsection (d). Each engine family shall have only one applicable standard.
5. Applicable to diesel and two-stroke spark ignited engines only.

(2) Evaporative emissions. With the exception of vehicles certified solely with compression-ignition engines, evaporative emissions must not exceed:

Evaporative Emissions

<u>Vehicle &amp; Model Year</u>	<u>Emission Component</u>	<u>Permeation Standard</u>	<u>Test Temperature</u>
<u>ALL Off-Highway Recreational Vehicles</u> <u>2008 and Later</u> <u>g/m<sup>2</sup>/day<sup>(1)</sup></u>	<u>Fuel Tank Permeation</u>	<u>1.5</u>	<u>28 °C (82 °F)</u>
	<u>Hose Permeation</u>	<u>15.0</u>	<u>23 °C (73 °F)</u>

1. Grams per square meter per day.

(c)(1) The test procedures for determining certification and compliance with the standards for exhaust and evaporative emissions from new off-road motorcycles, all-terrain vehicles, and golf carts off-highway recreational vehicles are set forth in "California Exhaust Emission Standards and Test Procedures for 1997 and Later Off-Highway Recreational Vehicles and Engines," adopted November 23, 1994, and last amended ~~October 22, 1999~~ August 15, 2007, which are hereby incorporated by reference herein and which in turn incorporate by reference Subparts E and F, of Part 86, and Subparts A, B, C, F and I of Part 1051, Title 40, Code of Federal Regulations. Manufacturers of the following are not required to perform emissions testing, but must file an application of certification and comply with the administrative requirements outlined in the procedures to certify their vehicles for sale in California:

A) Golf carts.

B) Off-road motorcycles and all-terrain vehicles, and engines used in such vehicles, as described in subsection (f) below.

(2) The test procedures for determining certification and compliance with the standards for exhaust emissions from all-terrain vehicle, off-road sport vehicle, off-road utility vehicle, and sand car engines (those engines utilizing the engine-based optional standards noted in (b) above) are set forth in "California Exhaust Emission Standards and Test Procedures for 1995 and Later 2004 Small Off-Road Engines," adopted March 20, 1992, and last amended ~~March 23, 1999~~ July 26, 2004.

(d)(1) For chassis-based testing, Compliance with a standard to be applied as a "corporate average" shall be determined as follows:

$$\frac{\sum_{j=1}^n (PROD)_{jx} (STD)_{jx}}{\sum_{j=1}^n (PROD)_{jx}} = STD_{ca}$$

n = ~~Off-road motorcycle and all-terrain~~Off-highway recreational vehicle engine families.

PROD<sub>jx</sub> = Number of units in engine family j produced for sale in California in model year x.

STD<sub>jx</sub> = The manufacturer designated HC exhaust emission standard for engine family j in model year x, which shall be determined by the manufacturer subject to the following conditions: (1) no individual engine family exhaust emission standard shall exceed 2.5 g/km, and (2) no engine family designation or engine family exhaust emission standard shall be amended in a model year after the engine family is certified for the model year, and (3) prior to sale or offering for sale in California, each engine family shall be certified in accordance with "California Exhaust Emissions Standards and Test Procedures for 1997 and Later Off-highway Recreational Vehicles and Engines" adopted November 23, 1994, and shall be required to meet the manufacturer's designated HC exhaust emission standard as a condition of the certification Executive Order. Prior to certification the manufacturer shall also submit estimated production volumes for each engine family to be offered for sale in California.

STD<sub>ca</sub> = A manufacturer's corporate average HC exhaust emissions from those California ~~off-road motorcycles and all-terrain~~ off-highway recreational vehicles subject to the California corporate average HC exhaust emissions standard, as established by an Executive Order certifying the California production for the model year. This order must be obtained prior to the issuance of certification Executive Orders for individual engine families for the model year and shall include but not be limited to the following requirements in subsection (e) below:

(2) For the optional engine-based testing, compliance with a standard to be applied as a "corporate average" shall be determined as follows:

$$\sum_{j=1}^n \frac{(FEL_j)(Sales_j)(Power_j)(Load Factor)(EDP_j)}{(Sales_j)(Power_j)(Load Factor)(EDP_j)} = STD_{ca}$$

where

n = the number of small off-road engine families.

FEL = the Family Emission Level for an engine family.

Sales<sub>j</sub> = the eligible sales of engine family *j*.



Power<sub>j</sub> = the sales-weighted maximum modal power (in kilowatts) of engine family *j*, or an alternative approved by the Executive Officer.

EDP<sub>j</sub> = the Emissions Durability Period of engine family *j*.

Load Factor = the Load Factor is 47% (i.e., 0.47).

STD<sub>ca</sub> = A manufacturer's corporate average HC+NO<sub>x</sub> exhaust emissions from those California off-highway recreational vehicles subject to the California corporate average HC+NO<sub>x</sub> exhaust emissions standard, as established by an Executive Order certifying the California production for the model year. This order must be obtained prior to the issuance of certification Executive Orders for individual engine families for the model year and shall include but not be limited to the following requirements in subsection (e) below:

(e)(1) During the manufacturer's production year, for each vehicle produced for sale in California, the manufacturer must provide the following information to the Executive Officer within 30 days after the last day in each calendar quarter:

(i A) vehicle identification numbers and an explanation of the identification code if applicable;

(ii B) model number and engine size of vehicle;

(iii C) the total number of vehicles marketed and produced for sale in California and their applicable designated emissions standards.

(2) The manufacturer's average HC or HC+NO<sub>x</sub> exhaust emissions, as applicable, shall meet the corporate average standard at the end of the manufacturer's production for the model year.

(3) Production and sale of vehicles which result in noncompliance with the California standard for the model year shall cause a manufacturer to be subject to civil penalties, according to applicable provisions of the Health and Safety Code. All excess emissions resulting from non-compliance with the California standard shall be made up in the following model year.

(4) For a period of up to one year following the end of the model year, for each model the manufacturer shall submit California sales and registration data as it becomes available.

~~(e) — As an option to the standards set forth in subsection (b) above, exhaust emissions from 1997 and later all-terrain vehicle engines must not exceed the equivalent to the off-road motorcycle and all-terrain vehicle standard using the utility test procedures set forth in "California Exhaust Emission~~

~~Standards and Test Procedures for 1995 and Later Small Off-Road Engines," adopted March 20, 1992, and last amended March 23, 1999, which is hereby incorporated by reference herein.~~

(f) Off-road motorcycles and ATVs, and engines used in such vehicles, that do not meet the emissions standards in subsection (b) above may operate only during certain periods of time at certain off-highway vehicle (OHV) riding areas. Section 2415 of this Article lists these California OHV riding areas and their associated riding seasons for off-highway recreational vehicles that are subject to use restrictions.

(g)(1) On or after January 1, 1997, no new engines greater than 90 cc may be produced for sale to replace off-road motorcycles, all-terrain vehicles and engines used in such vehicles, unless those engines comply with the emission control standards in effect at the time of replacement.

(2) On or after January 1, 1997, manufacturers may not produce for sale in federal ozone nonattainment areas of California new, non-zero emission engines for golf carts.

(3) On or after January 1, 1999, no new engines 90 cc or less may be produced for sale to replace off-road motorcycle and all-terrain vehicle engines, unless those engines comply with the emission control standards in effect at the time of replacement.

(4) On or after January 1, 2007, no new engines may be produced for sale to replace engines in off-road sport vehicles, off-road utility vehicles, or sand cars, unless those engines comply with the emission control standards in effect at the time of replacement.

(h) ~~The Executive Officer may find that any off-road motorcycles, all-terrain off-highway recreational vehicles or engines used in such vehicles certified to comply with California emission standards and test procedures for on-road or other off-road applications are in compliance with these regulations.~~

(i) No crankcase emissions shall be discharged into the ambient atmosphere from the following vehicles, or from engines used in such vehicles:

(1) 1997 and later off-road motorcycles, all-terrain vehicles, and golf carts;

(2) 2007 and later off-road sport vehicles, off-road utility vehicles, and sand cars.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, and 43107, Health and Safety Code.

Reference: Sections 43013, 43018, 43102, 43104 and 43107, Health and Safety Code.

**PART 14**

**FINAL REGULATION ORDER**

**New Off-Highway Recreational Vehicles and Engines**

**Title 13, California Code of Regulations**

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## FINAL REGULATION ORDER

Note: This document is written in a style to indicate changes from the existing provisions. All existing regulatory language is indicated by plain type. All additions to the regulatory language are indicated by underlined type. All deletions to the regulatory language are indicated by ~~strikeout~~. Only those portions containing modifications from existing provisions are included. All other portions remain unchanged and are indicated by the symbol [ \* \* \* \* ] for reference.

### Article 3. Off-Highway Recreational Vehicles and Engines

Amend § 2412, title 13, California Code of Regulations, to read as follows:

#### § 2412. Emission Standards and Test Procedures – New Off-Highway Recreational Vehicles and Engines.

\* \* \* \* \*

(c)(1) The test procedures for determining certification and compliance with the standards for exhaust and evaporative emissions from new off-highway recreational vehicles are set forth in “California Exhaust Emission Standards and Test Procedures for 1997 and Later Off-Highway Recreational Vehicles and Engines,” adopted November ~~23~~22, 1994, and last amended ~~August 15, 2007~~October 25, 2012, which are hereby incorporated by reference ~~herein~~ and which in turn incorporate by reference Subparts E and F of Part 86, and Subparts A, B, C, F, and I of Part 1051, Title 40, Code of Federal Regulations. Manufacturers of the following are not required to perform emissions testing, but must file an application of certification and comply with the administrative requirements outlined in the procedures to certify their vehicles for sale in California:

(A) Golf carts.

(B) Off-road motorcycles and all-terrain vehicles, and engines used in such vehicles, as described in subsection (f) below.

(2) The test procedures for determining certification and compliance with the standards for exhaust emissions from all-terrain vehicle, off-road sport vehicle, off-road utility vehicle, and sand car engines (those engines utilizing the engine-based optional standards noted in (b) above) are set forth in “California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines,” adopted March 20, 1992, and as last amended July 26, 2004, which is hereby incorporated by reference. For 2013 and later model years, the test fuel requirements for engines utilizing such optional standards are specified in §1065.701, of the “California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines; Engine-Testing

Procedures (Part 1065),” adopted October 25, 2012, which is hereby incorporated by reference.

(d)(1) For chassis-based testing, compliance with a standard to be applied as a “corporate average” shall be determined as follows:

\* \* \* \* \*

STD<sub>jx</sub> = The manufacturer designated HC exhaust emission standard for engine family j in model year x, which shall be determined by the manufacturer subject to the following conditions: (1) no individual engine family exhaust emission standard shall exceed 2.5 g/km, and (2) no engine family designation or engine family exhaust emission standard shall be amended in a model year after the engine family is certified for the model year, and (3) prior to sale or offering for sale in California, each engine family shall be certified in accordance with “California Exhaust Emissions Standards and Test Procedures for 1997 and Later Off-highway Recreational Vehicles and Engines” adopted November 2322, 1994 and as last amended October 25, 2012, and shall be required to meet the manufacturer’s designated HC exhaust emission standard as a condition of the certification Executive Order. Prior to certification the manufacturer shall also submit estimated production volumes for each engine family to be offered for sale in California.

\* \* \* \* \*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, and 43107, Health and Safety Code.  
Reference: Sections 43013, 43018, 43102, 43104, and 43107, Health and Safety Code.

## FINAL REGULATION ORDER

NOTE: This document is written in a style to indicate changes from the existing provisions. All existing language is indicated by plain text. All additions to language are indicated by underlined text. All deletions to language are indicated by ~~strikeout~~. Only those portions containing the suggested modifications from existing provisions are included. All other portions remain unchanged and are indicated by the symbol "\*\*\*\*" for reference.

Amend sections 2111, 2112, 2411, 2412, 2413, and 2415, title 13 California Code of Regulations, and the incorporated California Exhaust Emission Standards and Test Procedures for 1997 and Later Off-Highway Recreational Vehicles, to read as follows:

## **§ 2413. Emission Control Labels – New Off-Highway Recreational Vehicles.**

(a) Purpose. The Air Resources Board recognizes that certain emissions-critical or emissions-related parts must be properly identified and maintained in order for off-highway recreational vehicles, and engines used in such vehicles, to comply with the applicable emission standards. The purpose of this section is to require off-highway recreational vehicle engine manufacturers to attach a label (or labels) on each production vehicle (or engine) in order to provide vehicle owners and service mechanics with information necessary for the proper maintenance of these vehicles and engines in customer use.

### (b) Applicability

(1) All off-road motorcycles, all-terrain vehicles off-highway recreational vehicles, and engines used in such vehicles, except those certified according to section 2412(f), produced on or after January 1, 1997, for sale, lease, use or introduction into commerce in California, shall comply with these labeling requirements of Title 13, California Code of Regulations, Chapter 1, Article 2, Section 1965, and the incorporated "California Motor Vehicle Emission Control and Smog Index Label Specifications," adopted March 1, 1978, as last amended June 24, 1996 (as corrected September 20, 1996), and which are hereby incorporated by reference herein. Any reference to motorcycles in the incorporated documents applies to off-road motorcycles, all-terrain vehicles, and engines used in such vehicles.

(2) Any off-road motorcycle, all-terrain vehicle, and engines used in such vehicles, that are exempt from exhaust emission standards pursuant to title 13 of the California Code of Regulations shall also be exempt from the requirements of this section.

(3) The responsibility for compliance with this section rests with the manufacturer who has been granted certification in order to offer these vehicles and engines for sale in California.

### (c) Label Content and Location

(1) A tune-up label made of a permanent material shall be welded, riveted or otherwise permanently attached to an area on the off-highway recreational vehicle or engine in such a manner that the label will be readily visible to the average person after the engine installation.

(2) In selecting an acceptable location, the manufacturer shall consider the possibility of accidental damage (e.g., possibility of tools or sharp instruments coming in contact with the label). Each label shall be affixed in such a manner



that it cannot be removed without destroying or defacing the label, and shall not be affixed to any part that is likely to be replaced during the vehicle's useful life.

(3) The tune-up label shall be in the English language, and use block letters and numerals, which shall be of a color that contrasts with the background color of the label.

(4) The tune-up label shall contain the following information:

(A) A label heading that shall read: "Vehicle Emission Control Information."

(B) The complete corporate name and trademark of the manufacturer.

(C) Engine family name and engine displacement (in cubic centimeters).

(D) Identification of the Exhaust Emission Control System Abbreviations may be used and shall conform to the nomenclature and abbreviations found in the Society of Automotive Engineers' document J1930, which is incorporated by reference in section 1977, title 13, CCR, entitled "Electrical/Electronic Systems Diagnostic Terms, Definitions, Abbreviations, and Acronyms."

(E) The tune-up specifications and adjustments recommended by the manufacturer, including, if applicable: valve lash, ignition timing, idle air fuel mixture setting procedure and value (e.g., CO, idle speed drop), and high idle speed. These specifications shall indicate the proper transmission position during tune-up and what accessories, if any, should be in operation, and what systems, if any (e.g., vacuum advance, air pump), should be disconnected during the tune-up. Any tune-up specifications or adjustment instructions that appear on labels shall be sufficiently clear and complete so as to preclude the need for a mechanic or vehicle owner to consult other references in order to correctly perform the adjustments. The manufacturer shall include the single statement: "No other adjustments needed," in lieu of any tune-up adjustment instruction, when the manufacturer does not recommend a tune-up specification or an adjustment.

(F) Any specific fuel or engine lubricant requirements (e.g., research octane number, engine lubricant type, etc.).

(G) An unconditional statement of compliance with the appropriate model-year California regulations. For example, "This (specify off-road motorcycle, all-terrain vehicle, off-road sport vehicle, off-road utility vehicle, sand car, or engine, as applicable) conforms to California regulations applicable to (specify applicable model year) model-year new (specify off-road motorcycles, all-terrain vehicles, off-road sport vehicles, off-road utility vehicles, sand cars, or engines, as applicable). The statement shall also include the phrase, "is certified to (specify applicable HC standard in grams per kilometer) HC engine family

exhaust emission standard in California" or the phrase "is certified to (specify applicable HC+NO<sub>x</sub> standard in grams per kilowatt-hour) HC+NO<sub>x</sub> engine family exhaust emission standard in California."

(H) Statements such as those in (G) shall not appear on labels placed on off-highway recreational vehicles or engines that do not comply with all applicable California regulations.

(5) A manufacturer may elect to use a supplemental label when the original label lacks sufficient space to include all the required information. A supplemental label shall conform to all of the specifications as the original label. The original label shall be indicated as "1 of 2" and the supplemental label shall be indicated as "2 of 2" whenever a supplemental label is utilized.

(6) The provisions of this section shall not prevent a manufacturer from also reciting on the label that such off-highway recreational vehicle or engine conforms to any applicable federal emission standards for new off-road motorcycles, all-terrain vehicles, off-road utility vehicles or engines used in such vehicles, or any other information that such manufacturer deems necessary for, or useful to, the proper operation and satisfactory maintenance of such off-highway vehicles or engines.

(7) As used in this Section 2413(c), readily visible to the average person means that the label shall be readable from a distance of 18 inches (46 centimeters) without any obstructions from vehicle or engine parts (including all manufacturer available optional equipment) except for flexible parts (e.g., vacuum hoses, ignition wires) that can be moved out of the way without disconnection. Alternatively, information required by these specifications to be printed on the label shall be no smaller than 8 point type size (2 millimeters in height) provided that no vehicle or engine parts (including all manufacturer available optional equipment), except for flexible parts, obstruct the label.

(8) The labels and any adhesives used shall be designed to withstand, for the off-highway recreational vehicle's total expected life, typical off-highway recreational vehicle environmental conditions at the location where a label has been attached. Typical off-highway recreational vehicle environmental conditions include, but are not limited to, exposure to engine fuels, lubricants and coolants (e.g., gasoline, motor oil, brake fluids, ethylene glycol), engine operating temperatures, steam cleaning, and paints or paint solvents. The manufacturer must submit, with its certification application, a statement attesting that its labels comply with this requirement.

(9) The manufacturer must obtain approval from the Executive Officer for all emission control label formats and locations prior to certification. Approval of the specific tune-up specifications and adjustments is not required; however, the format for all such specifications and adjustments, if any, is subject to review. If

the Executive Officer finds that the information on the label is vague or subject to misinterpretation, or that the location does not comply with these specifications, the Executive Officer may require that the label or its location be modified accordingly.

(10) Samples of all actual production emission control labels used within an engine family shall be submitted to the Executive Officer of the state Air Resources Board within thirty days after the start of production.

(11) The Executive Officer may approve alternate label locations or may, upon request and when the Executive Officer determines warranted, waive or modify one or more of the label content requirements, provided that the intent of this section is satisfied.

(12) If the Executive Officer finds any off-highway recreational vehicle or engine manufacturer using emission control labels that are different from those approved or that do not substantially comply with the readability or durability requirements set forth in this section, the Executive Officer may invoke section 2109, title 13, California Code of Regulations.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43105, and 43107, Health and Safety Code.

Reference: Sections 43013, 43018, 43102, 43105, and 43107, Health and Safety Code.

# **Final Regulation Order**

**Off-Highway Recreational Vehicles: Evaporative Emission  
Control**

**Title 13, California Code of Regulations**

**§§ 2416, 2417, 2418, 2419, 2419.1, 2419.2, 2419.3, and 2419.4**

**California Air Resources Board  
Monitoring and Laboratory Division**

## **FINAL REGULATION ORDER**

Adopt new sections 2416, 2417, 2418, 2419, 2419.1, 2419.2, 2419.3, and 2419.4 in Article 3, Chapter 9, Division 3, title 13, California Code of Regulations, to read as follows:

Note: The entire text below is new language proposed to be added to the California Code of Regulations.

### **Chapter 9. Off-Road Vehicles and Engines Pollution Control Devices**

#### **Article 3. Off-Highway Recreational Vehicles and Engines**

##### **§ 2416. Applicability.**

(a) (1) This Article applies to all new model year 2018 or later off-highway recreational vehicles (OHRV) for sale, lease, use, or offered for sale, lease or use, or otherwise introduced into commerce in California (hereinafter collectively referred to as “sold or offered for sale”).

(2) New OHRVs, subject to any of the standards set forth in Article 3, must be certified by the Air Resources Board and covered by an Executive Order of Certification pursuant to section 2419.4 of this Article before being sold or offered for sale in California.

(b) The following OHRVs are exempt from the requirements of this regulation:

(1) OHRVs certified solely to operate on diesel fuel,

(2) Snowmobiles,

(3) Zero emission vehicles, except when optionally certified to generate advanced fuel system credits, pursuant to section 2419.4, and

(4) OHRVs certified as meeting Cal. Code Regs., tit. 13 § 2412(f).

(c) Each part of this Article is severable, and in the event that any part of this chapter or Article is held to be invalid the remainder of this Article continues in full force and effect.

(d) This Article includes provisions for certification, labeling requirements, emissions standard enforcement, recall, and use restrictions.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43105, 43107, 43205.5, 43210, and 43824, Health and Safety Code. Reference: Sections 43013, 43018, 43105, 43106, 43107, 43205, 43205.5, 43210, and 43824, Health and Safety Code. Section 27156, California Vehicle Code.

## **§ 2417. Definitions.**

(a) The definitions in Cal. Code Regs., tit.13, § 1900(b), apply as well as the following additions:

- (1) "Abuse" as defined in Cal. Code Regs., tit.13, § 2441(a).
- (2) "All-Terrain Vehicle (ATV)" as defined in Cal. Code Regs., tit.13, § 2411(a).
- (3) "Auxiliary Emission Control Device" as defined in Cal. Code Regs., tit.13, § 2701(a).
- (4) "Compliance Testing" as defined in Cal. Code Regs., tit.13, § 2421(a).
- (5) "Component Executive Order of Certification" means an Executive Order of Certification issued by the Executive Officer for an evaporative emission component.
- (6) "Conventional Tool" is any of the following: a blade or Phillips screwdriver, open-end or box wrench, adjustable wrench, standard hexagonal socket, hands, pliers, or Torx bit.
- (7) "Diurnal Emissions" means evaporative emissions resulting from the daily cycling of ambient temperatures and include resting losses and permeation emissions, as measured according to test procedures incorporated in this Article.
- (8) "Emission Control System" as defined in Cal. Code Regs., tit.13, § 2411(a).
- (9) "End of the Assembly-Line" as defined in Cal. Code Regs., tit.13, § 2411(a).
- (10) "Evaporative Emissions Control Component Manufacturer" means the manufacturer of an evaporative emissions control component applying for or holding a Component Executive Order of Certification.
- (11) "Evaporative Emissions" as defined in Cal. Code Regs., tit.13, § 2752(a).
- (12) "Evaporative Emissions Control Component" means components that control evaporative hydrocarbon emissions from the fuel system. Evaporative emission components include, but are not limited to, low permeation fuel tanks, low permeation fuel hoses, carbon canisters, pressure relief valves, fuel-injection, and carburetors.
- (13) "Evaporative Family" as defined in Cal. Code Regs., tit.13, § 2752(a).

- (14) "Evaporative Family Emissions Limit (EFEL)" is defined as the numerical value selected by the manufacturer to serve in the advanced fuel system credit program. The EFEL serves as the evaporative family's emission standard for emission compliance efforts. If the manufacturer does not declare an EFEL for an evaporative family, the applicable emissions standard must be treated as that evaporative family's EFEL for the purposes of any provision in this Article. In addition, the EFEL must be set in increments of 0.025 grams per test.
- (15) "Executive Order of Certification" as defined in Cal. Code Regs., tit.13, § 2752(a).
- (16) "Fuel Injection" is defined as any mechanical or electrical fuel system in which pressurized fuel is sprayed or injected, only when the engine is starting or running, into the intake system or cylinder of an internal combustion engine.
- (17) "Golf Cart" as defined in Cal. Code Regs., tit.13, § 2411(a).
- (18) "Independent Laboratory" is defined as a laboratory that is not owned, operated, or affiliated with the applicant seeking an Executive Order of Certification of Component Executive Order of Certification.
- (19) "Manufacturer" as defined in Cal. Code Regs., tit.13, § 2411(a).
- (20) "Nominal Capacity" as defined in Cal. Code Regs., tit. 13, § 2752(a).
- (21) "Nonconformity" or "Noncompliance" as defined in Cal. Code Regs., tit.13, § 2112(h).
- (22) "Off-Highway Recreational Vehicle (OHRV)" means any vehicle powered by an off-highway recreational vehicle engine.
- (23) "Off-Highway Recreational Vehicle Engines" or "Engines" as defined in Cal. Code Regs., tit. 13, § 2411(a).
- (24) "Off-Road Motorcycle" as defined in Cal. Code Regs., tit. 13, § 2411(a).
- (25) "Off-Road Sport Vehicle" as defined in Cal. Code Regs., tit. 13, § 2411(a).
- (26) "Off-Road Utility Vehicle" as defined in Cal. Code Regs., tit. 13, § 2411(a).
- (27) "Owner" as defined in Cal. Code Regs., tit.13, § 2180.1(a).

- (28) “Permeation Emissions” or “Permeation” means evaporative emissions that result from reactive organic gas molecules penetrating through the walls of fuel system components and evaporating on outside surfaces. Permeation emissions are a component of diurnal emissions.
- (29) “SAE J1737” means Society of Automotive Engineers *Test Procedure to Determine the Hydrocarbon Losses from Fuel Tubes, Hoses, Fittings, and Fuel Line Assemblies by Recirculation* (May 2013), which is incorporated by reference herein.
- (30) “Sand Car” as defined in Cal. Code Regs., tit. 13, § 2411(a).
- (31) “Scheduled Maintenance” as defined in Cal. Code Regs., tit.13, § 2411(a).
- (32) “Small Volume Off-Highway Recreational Vehicle Manufacturer” means any off-highway recreational vehicle manufacturer with three-year average California sales less than or equal to a total of 50 new off-highway recreational vehicles per model year in California.
- (33) “Tampering” means removing, modifying, or disconnecting emissions-related parts, or, as it applies to emission control related labels, in a manner that voids equipment certification.
- (34) “Total Organic Gases” or “TOG” means all gases containing carbon, except carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.
- (35) “TP-902” means “Test Procedure for Determining Diurnal Evaporative Emissions from Small Off-Road Engines and Equipment,” adopted July 26, 2004, which is incorporated by reference herein.
- (36) “TP-933” means “Test Procedure for Determining Evaporative Emissions from Off-Highway Recreational Vehicles,” adopted November 5, 2014, which is incorporated by reference herein.
- (37) “Vehicle or Engine Manufacturer” as defined in Cal. Code Regs., tit.13, § 2035(c).
- (38) “Warranty Period” as defined in Cal. Code Regs., tit.13, § 2035(c).
- (39) “Warranty Station” as defined in Cal. Code Regs., tit.13, § 2035(c).
- (40) “Zero Emission Vehicle” or “Electric Motorcycle” as defined in Cal. Code Regs., tit.13, § 2411(a).



NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43105, 43107, 43205.5, 43210, and 43824, Health and Safety Code. Reference: Sections 43013, 43018, 43105, 43106, 43107, 43205, 43205.5, 43210, and 43824, Health and Safety Code. Section 27156, California Vehicle Code.

**§ 2418. Evaporative Emission Standards and Test Procedures.**

(a) Manufacturers of OHRVs must comply with the following evaporative emission standards for new OHRVs sold or offered for sale in California.

(1) Evaporative emissions from an OHRV may not exceed the following limitations:

(A) The applicable emission standards outlined in Table 1 for either the 72 hour diurnal standard or the steady state diurnal standard. All OHRVs certified to the emission standards below are presumed to demonstrate compliance with federal permeation standards specified in Cal. Code Regs., tit.13, § 2412(b)(2).

**Table 1**

<i>Vehicle and Model Year</i>	<i>Required Tests</i>	<i>72-Hour Diurnal Standard<sup>(1)</sup></i>	<i>Steady State Diurnal Standard<sup>(2)</sup></i>
OHRVs 2018 and later model years	Diurnal	1 gram TOG/day	1 gram TOG/day
	Fuel System Leakage Tip Test	No visible liquid leakage	

(1) Highest 24-hour diurnal test result over three consecutive 24-hour diurnal test periods.

(2) 24-hour diurnal test result plus calculated vented emissions.

(B) All-Terrain Vehicle (ATV) Filler Neck Compatibility Standard.

Beginning with model year 2018, ATVs with fuel tanks that are re-designed to be geometrically different from fuel tanks of 2017 and earlier model years, and have a nominal capacity of greater than 3.5 gallons, must meet the filler pipe sealing surface requirements of Figure 1 of the International Standards Organization 13331:1995(E), published June 1, 1995, which is incorporated by reference herein. Perpendicularly down from the mating surface there must be a minimum of 120 mm (90 mm for nozzle, 5 mm for bellows compression, and 25 mm for extra space fuel flow) to the bottom of the tank.

(2) Zero emission vehicles must produce zero fuel evaporative emissions under any and all possible operational modes and conditions and are, therefore, not required to perform evaporative emissions testing to certify in accordance with section 2419.4.

(b) Small Volume OHRV Manufacturer Design-Based Standard.

(1) In lieu of certifying to the emission standards in subdivision (a), a small volume OHRV manufacturer may certify OHRVs to the design-based standards set out in Table 2. If a Small Volume OHRV Manufacturer elects to certify under this subdivision, they must perform a tip-test as specified in subdivision (a)(1).

**Table 2**

<i>Effective Date Model Year</i>	<i>Fuel Tank Permeation Grams/m<sup>2</sup>/day</i>	<i>Fuel Hose Permeation Grams/m<sup>2</sup>/day</i>	<i>Carbon Canister Working Capacity Grams/Liter of Nominal Fuel Tank Volume</i>	<i>Fuel Injection</i>
2018 and later model years	1.5 @ 28°C (82°F) <sup>(1)</sup>	5.0 @ 35°C (95°F)	1.0 <sup>(2)</sup>	Required

(1) Fuel tank permeation standards specified in Cal. Code Regs., tit.13, § 2412(b)(2).

(2) The carbon canister must be actively purged during engine operation.

(c) The test procedures for determining compliance with the standards in subdivision (a) and (b) are as follows:

(1) The test procedure used for subdivision (a) is TP-933.

(2) The test procedures used for subdivision (b) are specified in subdivisions (A), (B), and (C) below:

(A) Fuel hose permeation, as set forth in SAE J1737, as amended May 14, 2013, using the test fuel specified in TP-933.

(B) Fuel tank permeation, as set forth in Part 1060.520, Title 40, Code of Federal Regulations, as amended on April 30, 2010, and incorporated by reference herein.

(C) The carbon canister, as set forth in TP-902.

(d) Phase-in Schedule.

(1) For model years 2018 through 2021, OHRV manufacturers may phase-in evaporative emission standards specified in subdivision (a) so that 75 percent of all OHRVs sold in model years 2018 through 2021 are compliant with the requirements in section 2419.4, or;

(2) The weighted average of compliant OHRVs must be greater than 75 percent and can include early compliant model year 2017 OHRVs in the model year (MY) 2018 calculation so that:  $(MY2017\%control + MY2018\%control) \times 0.4 + MY2019\%control \times 0.3 + MY2020\%control \times 0.2 + MY2021\%control \times 0.1 > 75\%$  and percent compliance cannot decrease.

(3) All 2018 through 2021 model year OHRVs that are not subject to these standards pursuant to the phase-in schedule must comply with the evaporative permeation requirements for 2008 and later model year OHRVs, as described in Cal. Code Regs., tit.13, § 2412(b)(2).

(4) The percentage of OHRV fleet averaged across model years 2018 through 2021 must be used to determine compliance with this requirement.

(5) For the purpose of calculating the fleet average, an OHRV manufacturer must use the percentage of OHRVs sold or offered for sale in California for model years 2018 through 2021. An OHRV manufacturer may calculate this average percentage using the projected sales for these model years in lieu of actual sales.

(6) Any OHRV manufacturer that participates in the phase-in period must comply with the administrative requirements in section 2419.4(d).

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43105, 43107, 43205.5, 43210, and 43824, Health and Safety Code. Reference: Sections 43013, 43018, 43105, 43106, 43107, 43205, 43205.5, 43210, and 43824, Health and Safety Code. Section 27156, California Vehicle Code.

**§ 2419. Evaporative Emission Control Labels—New Off-Highway Recreational Vehicles.**

(a) Purpose. An evaporative emissions label (or labels) must be affixed to every certified OHRV to provide proper vehicle identification and maintenance information for emissions-related parts. The maintenance information on the label may be omitted if such information is included in the owner's manual.

(b) The OHRV manufacturer applying for an Executive Order of Certification must comply with this section.

(c) OHRV Evaporative Emissions Label: Content and Requirements.

(1) An evaporative emissions label made of a permanent material must be welded, riveted or otherwise permanently attached to an area on the OHRV in such a manner that the label will be readily visible to the average person with the engine installed.

(A) The label must be readable from a distance of 18 inches (46 centimeters) without any obstructions from vehicle or engine parts (including all OHRV manufacturer available optional equipment) except for flexible parts (e.g., vacuum hoses, ignition wires) that can be moved out of the way without disconnection.

(B) Specifications to be printed on the label must be no smaller than 8 point type size (2 millimeters in height).

(2) In selecting an acceptable location, the OHRV manufacturer must consider the possibility of accidental damage (e.g., possibility of tools or sharp instruments coming in contact with the label). Each label must be affixed in such a manner that it cannot be removed without destroying or defacing the label, and must not be affixed to any part that is likely to be replaced during the OHRV's useful life.

(3) The evaporative emissions label must be in the English language, and use block letters and numerals, which must be of a color that contrasts with the background color of the label.

(4) The evaporative emissions label must contain the following information:

(A) A label heading that must read: "Vehicle Evaporative Emission Control Information."

(B) The complete corporate name and trademark of the OHRV manufacturer.

(C) Evaporative family name and model name.

(D) Identification of the Evaporative Emission Control System. Abbreviations may be used and must conform to the nomenclature and abbreviations found in the Society of Automotive Engineers' procedure J1930, "Electrical/Electronic Systems Diagnostic Terms, Definitions, Abbreviations and Acronyms," October 2008, which is incorporated by reference herein.

(E) The tune-up specifications and adjustments recommended by the OHRV manufacturer. These specifications must indicate the proper transmission position during tune-up and what accessories, if any, should be in operation, and what systems, if any (e.g., vacuum advance, air pump), should be disconnected during the tune-up. Any tune-up specifications or adjustment instructions that appear on labels must be sufficiently clear and complete so as to preclude the need for a mechanic or OHRV owner to consult other references in order to correctly perform the adjustments. The OHRV manufacturer must include the single statement: "No other adjustments needed" in lieu of any tune-up adjustment instruction when the OHRV manufacturer does not recommend a tune-up specification or an adjustment.

(F) An unconditional statement of compliance with the appropriate model year California regulations. For example, "This (specify off-road motorcycle, all-terrain vehicle, off-road sport vehicle, off-road utility vehicle, or sand car, as applicable) conforms to California evaporative emissions regulations applicable to (specify applicable model year) model-year new (specify off-road motorcycles, all-terrain vehicles, off-road sport vehicles, off-road utility vehicles, or sand cars, as applicable)." The statement must also include the phrase, "is certified to (specify applicable TOG designated standard in grams per day) evaporative emission standard in California" or "is certified to meet the applicable small volume evaporative emissions standards in California."

(G) Statements such as those in (F) must not appear on labels placed on OHRVs that do not comply with all applicable California regulations.

(5) An OHRV manufacturer may elect to use a supplemental label when the original label lacks sufficient space to include all the required information. A supplemental label must conform to all of the specifications as the original label. The original label must be indicated as "1 of 2" and the supplemental label must be indicated as "2 of 2" whenever a supplemental label is utilized.

(6) The provisions of this section must not prevent an OHRV manufacturer from also reciting on the label that such OHRV complies with any applicable federal emission standards for new OHRVs, or any other information that an OHRV manufacturer deems necessary for, or useful to, the proper operation and satisfactory maintenance of such OHRVs.

(7) The labels and any adhesives used must be designed to withstand, for the OHRV's total useful life, typical OHRV environmental conditions at the location where a label has been attached. Typical OHRV environmental conditions include, but are not limited to, exposure to engine fuels, lubricants and coolants (e.g., gasoline, motor oil, brake fluids, ethylene glycol), engine operating temperatures, steam cleaning, and paints or paint solvents. The

OHRV manufacturer must submit, with its application for an Executive Order of Certification, a statement attesting that its labels comply with this requirement.

(8) Approval of Emission Control Label.

(A) The OHRV manufacturer must obtain approval from the Executive Officer for all evaporative emission control label formats and locations prior to certification. Approval of the specific tune-up specifications and adjustments is not required; however, the format for all such specifications and adjustments, if any, is subject to review. If the Executive Officer finds that the information on the label is vague or subject to misinterpretation or that the location does not comply with these specifications, the Executive Officer may require that the label or its location be modified accordingly.

(B) Samples of all actual production emission control labels used within an evaporative family must be submitted to the Executive Officer of the Air Resources Board within 30 days after the start of production.

(C) The Executive Officer may approve alternate label locations or may, upon request and when the Executive Officer determines warranted, waive or modify one or more of the label content requirements, provided that the intent of this section is satisfied.

(D) If the Executive Officer finds any OHRV using evaporative emission control labels that are different from those approved or that do not substantially comply with the readability or durability requirements set forth in this section, the Executive Officer may invoke section 2419.3.

(d) Integrated Exhaust and Evaporative Emissions Control Label.

(1) An OHRV manufacturer may use an integrated exhaust and evaporative emissions control label for OHRVs certified to the provisions of this Article, subject to approval of the label format, content, and location by the Executive Officer as set forth in subdivision (c)(8), and subject to exhaust emissions labeling requirements as set forth in Cal. Code Regs., tit.13, § 2413.

(e) Evaporative Emissions Control Component Label Content and Requirements.

(1) The evaporative emissions control component label information must be written in the English language.

(2) The evaporative emissions control component must be labeled with the approved Component Executive Order of Certification number or identifying characters (e.g., symbol, image, letters, EO number, model number, manufacturing part number, or combination thereof). The evaporative

emissions control component label must be described in the Component Executive Order of Certification application.

(3) The label must be readable from a distance of 18 inches (46 centimeters) if the component is removed from the evaporative emission system and inspected.

(4) The labels and any adhesives used must be designed to withstand, for the evaporative emissions control component's total useful life, typical component environmental conditions at the location where a label has been attached. Typical evaporative emissions control component environmental conditions include, but are not limited to, exposure to engine fuels, lubricants and coolants (e.g., gasoline, motor oil, brake fluids, ethylene glycol), engine operating temperatures, steam cleaning, and paints or paint solvents. The evaporative emissions control component manufacturer must submit, with its application for a Component Executive Order of Certification, a statement attesting that its labels comply with this requirement.

(5) If the Executive Officer finds any evaporative emissions control emission component with an emission control label that is different from those approved, or that does not substantially comply with the readability or durability requirements set forth in this section, the Executive Officer may suspend or revoke the Component Executive Order of Certification.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43105, 43107, 43205.5, 43210, and 43824, Health and Safety Code. Reference: Sections 43013, 43018, 43105, 43106, 43107, 43205, 43205.5, 43210, and 43824, Health and Safety Code. Section 27156, California Vehicle Code.

### **§ 2419.1. Defect Warranty Requirements for Evaporative Emissions Control Systems of 2018 and Later Model Year Off-Highway Recreational Vehicles.**

(a) The warranty period must begin on the date the OHRV is delivered to an ultimate purchaser.

(b) General Emissions Warranty Coverage.

The manufacturer of an OHRV must warrant to the ultimate purchaser and each subsequent purchaser that the OHRV is:

(1) Designed, built, and equipped so as to conform, at the time of sale, with all applicable laws, rules and regulations; and

(2) Free from defects in materials and workmanship that may cause the failure of a warranted part. All replacement parts must be identical in all material respects to that part as described in the OHRV manufacturer's Executive Order of Certification application.

(c) Warranty Period.

The warranty period applicable to this section is 30 months, or 2500 miles, or 250 hours, whichever comes first, except for "high-priced" warranty parts, which are covered for 60 months, or 5000 miles, or 500 hours, whichever comes first.

(1) Each OHRV manufacturer must identify in its Executive Order of Certification application the "high-priced" warranted parts which are:

(A) OHRV parts included on the Air Resources Board "Emissions Warranty Parts List," dated December 14, 1978, as last amended on February 22, 1985, and incorporated herein by reference, and;

(B) Have an individual replacement cost at the time of certification exceeding the cost limit defined in subdivision (c)(3).

(2) The replacement cost must be the retail cost to an OHRV owner and include the cost of the part, labor, and standard diagnosis. The costs must be those of the highest-cost metropolitan area of California.

(3) The cost limit must be calculated using the following equation:

$$\text{Cost limit}_n = \$200 \times (\text{CPI}_{n-2} / \text{CPI}_{2016})$$

Where,

- Cost limit<sub>n</sub> = the cost limit for the applicable model year of the OHRV rounded to the nearest ten dollars
- n = model year of the new OHRVs
- n-2 = calendar year two years prior to the model year of the new OHRVs
- CPI = annual average nationwide urban consumer price index for a calendar year published by the United States Bureau of Labor Statistics

(4) The cost limit may be revised annually by the Executive Officer. The highest-cost metropolitan area in California must be identified by the Executive Officer for use in this section. If a manufacturer seeks certification of an OHRV before the applicable annual average CPI is available, the cost limit must be calculated using the average of the monthly nationwide urban CPI figures for the most recent 12 month period for which figures have been published by the United States Bureau of Labor Statistics.



(5) Each OHRV manufacturer must submit to the Executive Officer the documentation used to identify the "high-priced" warranted parts required in this section. The documentation must include the estimated retail parts costs, labor rates in dollars per hour, and the labor hours necessary to diagnose and replace the parts.

(6) The Executive Officer may reject or require modification of the OHRV manufacturer's list of "high-priced" warranted parts to ensure that such list includes all emission-related parts whose replacement cost exceeds the cost limit defined in subdivision (c)(3).

(d) Subject to the conditions and exclusions of subdivision (i), the warranty on emissions-related parts must function as follows:

(1) Any warranted part which is not scheduled for replacement as part of maintenance in the written instructions pursuant to subdivision (e) must be warranted for the warranty period defined in subdivision (c). If any such part fails during the warranty period, it must be repaired or replaced by the OHRV manufacturer according to subdivision (d)(4). Any such part repaired or replaced under warranty must be fully warranted.

(2) Any warranted part which is scheduled only for regular inspection in the written instructions required by subdivision (e) must be warranted for the warranty period defined in subdivision (c). A statement in such written instructions to the effect of "repair or replace as necessary" must not reduce the period of warranty coverage. Any such part repaired or replaced under warranty must be warranted for the remaining warranty period.

(3) Any warranted part which is scheduled for replacement as part of maintenance in the written instructions pursuant to subdivision (e) must be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails before the first scheduled replacement point, the part must be repaired or replaced by the OHRV manufacturer according to subdivision (d)(4). Any such part repaired or replaced under warranty must be warranted for the remainder of the period prior to the first scheduled replacement point for the part.

(4) Repair or replacement of any warranted part under the warranty provisions of this Article must be performed at no charge to the OHRV owner, at a warranty station, except in the case of a temporary repair when a warranted part or a warranty station is not reasonably available to the OHRV owner. In the event a temporary repair is permitted according to subdivision (d)(8), repairs may be performed at any available service establishment, or by the owner, using any replacement part. The OHRV manufacturer must reimburse the owner for his or her expenses including diagnostic charges for such temporary repair or replacement, not to exceed the OHRV

manufacturer's suggested retail price for all warranted parts replaced and labor charges based on the OHRV manufacturer's recommended time allowance for the warranty repair and the geographically appropriate hourly labor rate.

(5) Notwithstanding the provisions of subdivision (d)(4), warranty services or repairs must be provided at all manufacturer dealerships that are owned by the manufacturer or franchised to service the subject OHRVs.

(6) The OHRV owner must not be charged for diagnostic labor which leads to the determination that a warranted part is, in fact, defective, provided that such diagnostic work is performed at a warranty station.

(7) The OHRV manufacturer is liable for damages to other vehicle components proximately caused by a failure, under warranty, of any warranted part.

(8) Throughout the OHRV's warranty period defined in subdivision (c), the OHRV manufacturer must maintain a supply of warranted parts sufficient to meet the expected demand for such parts. The lack of availability of such parts or the incompleteness of repairs within a reasonable time period, not to exceed 30 days from the time the OHRV is initially presented to the warranty station for repair, will qualify the need for a temporary repair for purposes of subdivision (d)(4).

(9) Any replacement part designated by an OHRV manufacturer may be used in warranty repairs provided without charge to the OHRV owner. Such use will not reduce the warranty obligations of the OHRV manufacturer, except that the OHRV manufacturer will not be liable under the provisions of this Article for repair or replacement of any replacement part which is not a warranted part (except as provided under subdivision (d)(7)).

(10) Any add-on or modified part exempted by the Air Resources Board from the prohibitions of section 27156 of the California Vehicle Code may be used on an OHRV. Such use, in and of itself, will not be grounds for disallowing a warranty claim made under the provisions of this Article. The OHRV manufacturer is not liable under the provisions of this Article to warrant failures of warranted parts caused by the use of an add-on or modified part(s) unless such part(s) are also warranted.

(11) Upon a request of the Executive Officer, the OHRV manufacturer must provide any documents that describe the manufacturer's warranty procedures or policies.

(12) Any replacement part must not reduce the effectiveness of the OHRV emission control system. An OHRV manufacturer must demonstrate that the

applicable emission standards are being met when the replacement part(s) are installed on the OHRV. The demonstration of equivalence to applicable emission standards can be achieved through replacing the part(s) with the evaporative emissions control components the OHRV evaporative family was certified with; or, if unavailable, alternative parts may be installed if the OHRV manufacturer can provide test data to verify the evaporative control system meets, at least, the OHRV EFEL.

(e) Commencing with the 2018 model year, each manufacturer must furnish with each new OHRV written instructions for the maintenance and use of the OHRV by the owner.

(f) Commencing with the 2018 model year, the manufacturer must furnish with each new OHRV, a list of the warranted parts installed on that vehicle. The list must include those parts included on the Air Resources Board "Emissions Warranty Parts List," incorporated by reference in subdivision (c)(1)(A).

(g) Each OHRV manufacturer must submit the documents required by subdivisions (e) and (f) with the OHRV manufacturer's preliminary Executive Order of Certification application for approval by the Executive Officer. The Executive Officer may disapprove or require modification of the OHRV manufacturer's list of warranted parts to ensure that each such list is of proper scope. The Executive Officer may also disapprove or require modification of any of the documents required by subdivision (e). Approval by the Executive Officer of the documents required by subdivisions (e) and (f) is a condition of certification.

(h) Notwithstanding subdivision (f), the Executive Officer may delete any part from an OHRV manufacturer's list of warranted parts if the OHRV manufacturer demonstrates to the Executive Officer that:

(1) Failure of such part will not increase the emissions of any OHRV on which it is installed, and

(2) Any deterioration of drivability or performance which results from failure of the part could not be corrected by adjustments or modifications to other OHRV components.

(i) Exclusions.

The repair or replacement of any warranted part otherwise eligible for warranty coverage under subdivision (d), is excluded from such warranty coverage if the OHRV manufacturer can provide evidence to the Executive Officer, to the Executive Officer's satisfaction, that the OHRV has been abused, neglected, improperly maintained, or had unapproved modifications and that such abuse, neglect, improper maintenance, or unapproved modification, was the direct cause of the need for the repair or replacement of the part.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43105, 43107, 43205.5, 43210, and 43824, Health and Safety Code. Reference: Sections 43013, 43018, 43105, 43106, 43107, 43205, 43205.5, 43210, and 43824, Health and Safety Code. Section 27156, California Vehicle Code.

## **§ 2419.2. Evaporative Emissions Control System Warranty Statement.**

(a) An OHRV manufacturer must furnish a copy of the following statement with each new 2018 and later model year OHRV, using those portions of the statement applicable to the OHRV, unless otherwise authorized by the Executive Officer. The warranty statement must generally describe the obligations and rights of OHRV manufacturers and owners under the provisions of this Article.

### **CALIFORNIA EVAPORATIVE EMISSIONS CONTROL WARRANTY STATEMENT**

#### **YOUR WARRANTY RIGHTS AND OBLIGATIONS**

The California Air Resources Board (and OHRV manufacturer's name, optional) is pleased to explain the evaporative emissions control system warranty on your (model year) (OHRV). In California, new off-highway recreational vehicles must be designed, built, and equipped to meet the State's stringent anti-smog standards. (OHRV manufacturer's name) must warrant the evaporative emissions control system on your (OHRV) for the periods of time listed below provided there has been no abuse, neglect, improper maintenance, or unapproved modification of your (OHRV).

Your evaporative emissions control system may include parts such as the carburetor or fuel-injection system, fuel tank, fuel hoses, carbon canister, and engine computer. Also included may be hoses, belts, connectors and other evaporative emissions-related assemblies. Where a warrantable condition exists, (OHRV manufacturer's name) will repair your (OHRV) at no cost to you including diagnosis, parts and labor.

#### **OHRV MANUFACTURER'S WARRANTY COVERAGE:**

[For 2018 and later model year OHRVs.]

The warranty period for this OHRV is 30 months, or 2500 miles, or 250 hours, whichever comes first, except for "high-priced" warranty parts, which are covered for 60 months, or 5000 miles, or 500 hours, whichever comes first.

If any evaporative emissions-related part on your (OHRV) is defective the part will be repaired or replaced by (OHRV manufacturer's name).

## OWNER'S WARRANTY RESPONSIBILITIES:

As the (OHRV) owner you are responsible for the performance of the required maintenance listed in your owner's manual. (OHRV manufacturer's name) recommends that you retain all receipts covering maintenance on your (OHRV), but (OHRV manufacturer's name) cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of a scheduled maintenance.

As an owner you are responsible for presenting your (OHRV) to a(n) (OHRV manufacturer's name) dealer as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

As an (OHRV) owner, you should also be aware that (OHRV manufacturer's name) may deny you warranty coverage if your (OHRV) or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

If you have any questions regarding your warranty rights and responsibilities, you should contact (Insert chosen OHRV manufacturer's contact) at 1-XXX-XXXX or the California Air Resources Board at 9528 Telstar Avenue, El Monte, CA 91731.

(b) Each OHRV manufacturer must submit the documents required by this section with the Executive Order of Certification application for approval by the Executive Officer. The Executive Officer may reject or require modification of the documents to the extent the submitted documents do not satisfy the requirements of this section. Approval by the Executive Officer of the documents required by this section must be a condition of certification. The Executive Officer must approve or disapprove the documents required by this section within 90 days of the date such documents are received from the OHRV manufacturer. Any disapproval must be accompanied by a statement of the reasons therefore. In the event of disapproval the OHRV manufacturer may petition the Board to review the decision of the Executive Officer.

NOTE: Authority cited: Sections 39600, 39601, and 43824, Health and Safety Code. Reference: Sections 43106, 43205, and 43824, Health and Safety Code. Section 27156, California Vehicle Code.

### **§ 2419.3. New Off-Highway Recreational Vehicle Evaporative Emission Standards, Enforcement and Recall Provisions, Warranty, Quality Audit, and New Engine Testing.**

Commencing with model year 2018, an OHRV is subject to Cal. Code Regs., tit.13, Chapter 2, Articles 2.1-2.3 including Appendix A to Article 2.1."California In-Use Vehicle Emission-Related Recall Procedures, Enforcement Test

Procedures, and Failure Reporting Procedures for 1982 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, Heavy-Duty Vehicles and Engines, Motorcycles, 1997 and Subsequent Model-Year Off-Road Motorcycles and All-Terrain Vehicles, 2000 and Subsequent Model-Year Off-Road Compression-Ignition Engines, and 2008 and Subsequent Model-Year Spark-Ignition Sterndrive/Inboard Marine Engines."

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43105, 43107, 43205.5, 43210, and 43824, Health and Safety Code. Reference: Sections 43013, 43018, 43105, 43106, 43107, 43205.5, 43210, and 43824, Health and Safety Code. Section 27156, California Vehicle Code.

#### **§ 2419.4. Evaporative Emissions Control System Testing and Certification Requirement.**

(a) Requirement to Comply with All Other Applicable Codes and Regulations.

Certification or approval of any equipment or evaporative emissions control system by the Executive Officer does not exempt the equipment or evaporative emissions control system from compliance with other laws, rules or regulations including state and federal safety codes and regulations.

(b) Certification Requirements.

(1) OHRV Manufacturer Certification Requirements.

For model years 2018 and later, OHRVs must be tested with the entire evaporative emissions control system as a complete vehicle. To obtain an Executive Order of Certification, an OHRV manufacturer must demonstrate compliance with one of the following two options: option one—comply with subparagraph (A) and subparagraphs (C) through (F) below, option two—comply with subparagraph (B) and subparagraphs (C) through (F) below.

(A) Perform OHRV testing in accordance with section 2418(c). Measured emissions must be at or below the applicable evaporative emissions standards listed in section 2418(a) unless certifying as a zero emissions vehicle.

(B) Evaporative families that do not meet the evaporative emissions standards outlined above must comply by offsetting any shortfall with evaporative emissions credits generated with the same model year as specified in subdivision (c).

(C) Comply with all administrative requirements in subdivision (d).

(D) Meet the applicable warranty requirements of sections 2419.1 and 2419.2.

(E) Meet the evaporative emissions control labeling requirements of section 2419.

(F) Submit an Executive Order of Certification application as described in subdivision (4) to the Emissions Compliance, Automotive Regulations and Science Division Chief, Air Resources Board.

(2) Small Volume OHRV Manufacturer Design-Based Certification Requirements.

In order to facilitate OHRV design-based certification, small volume OHRV manufacturers may reference Component Executive Order of Certification numbers in their design-based Executive Order of Certification application or provide test results. The Air Resources Board (ARB) will certify emissions-related parts relating to fuel hoses, fuel tanks, and venting control devices to the emission standards in section 2418(b) by issuing Component Executive Orders of Certification. Evaporative emissions control component manufacturers may obtain a Component Executive Order of Certification through the process outlined in subdivision (3). To obtain an OHRV Executive Order of Certification for the design-based evaporative emissions standard a small volume OHRV manufacturer must demonstrate compliance with paragraphs (A) through (F) below.

(A) Have measured emissions at or below the emission standards listed in section 2418(b) in accordance with the testing requirements in section 2418(c) or reference Component Executive Order of Certification numbers of approved evaporative emissions control components.

(B) Comply with all administrative requirements in subdivision (d).

(C) Meet the applicable warranty requirements of sections 2419.1 and 2419.2.

(D) Meet the evaporative emissions control labeling requirements of section 2419.

(E) Complete the installation as directed by the fuel hose, fuel tank, and carbon canister component or other venting evaporative emissions control component manufacturer and verify adherence to specifications contained within the referenced Component Executive Order of Certification.

(F) Submit a design-based Executive Order of Certification application, as described in subdivision (4) to the Emissions Compliance, Automotive Regulations and Science Division Chief, Air Resources Board.

(3) Evaporative Emissions Control Component Manufacturer Certification Requirements.

To obtain a Component Executive Order of Certification, an evaporative emissions control component manufacturer must demonstrate compliance with paragraphs (A) through (D) below:

(A) Have measured evaporative emissions at or below the emission standards listed in section 2418(b) in accordance with the testing requirements in section 2418(c).

(B) Comply with all administrative requirements in subdivision (d)(2).

(C) Meet the evaporative emissions control component labeling requirements of section 2419(e).

(D) Submit a Component Executive Order of Certification application in writing as described in subdivision (5) to: Chief, Monitoring and Laboratory Division, Air Resources Board, P.O. Box 2815, Sacramento, California 95812.

(4) Application for an Executive Order of Certification.

An application for an evaporative emissions control Executive Order of Certification must be submitted in the English language by the OHRV manufacturer. Where possible, an OHRV manufacturer may submit a combined application for both exhaust emissions control certification, as set forth in Cal. Code Regs., tit.13, § 2412, and evaporative emissions control certification, as set forth in this section, as long as the requirements for both are fulfilled. The application for an evaporative emissions control Executive Order of Certification must describe all OHRVs in each evaporative family for which the certification is requested. Any changes to the Executive Order of Certification application must be updated and corrected by amendment. The Executive Order of Certification application must be signed under penalty of perjury by an authorized representative of the OHRV manufacturer. The Executive Order of Certification application submitted by the OHRV manufacturer must include items described in paragraphs (A) through (H) and paragraphs (I) or (J) below:

(A) Identification and description of the OHRVs covered by the Executive Order of Certification application and a description of the engine, evaporative emission control system, and fuel system components. This must include a detailed description of each auxiliary emission control



device. Transmission gear ratios, overall drive ratios, and vehicle mass (or masses) must also be included.

(B) The range of available fuel and ignition system adjustments.

(C) Projected California sales data sufficient to enable the Executive Officer to select a test fleet representative of the OHRVs for which certification is requested.

(D) A statement attesting that the test equipment meets the requirements set forth in TP-933, or if different, a description of the test equipment used for determining compliance with the applicable emission standards and the test fuel and engine lubricant proposed to be used in the test OHRVs for certification.

(E) A statement specifying the service accumulation procedures used follows subdivision 1 or 2 below:

1. The service accumulation procedure is the same as used for exhaust emissions testing set forth in Cal. Code Regs., tit.13, § 2410 et seq., and the requirements in TP-933; or,

2. A description of the proposed service accumulation procedure used to age the test OHRV or evaporative emission control system to its useful life and a description of the proposed scheduled maintenance.

(F) A statement of recommended periodic and anticipated maintenance and procedures necessary to assure that, in operation, the OHRVs covered by an Executive Order of Certification conform to the regulation. The statement must include the fuels and lubricants recommended for use by the ultimate purchaser, a description of the program for training of personnel on maintenance requirements, and the equipment required to perform this maintenance.

(G) A statement attesting that the evaporative emissions control label is designed to withstand the OHRV's total useful life and a description of the label as specified in section 2419. The description may be a scaled copy or blueprint of the label. The Executive Order of Certification application must specify the location where the label is to be affixed on the OHRV.

(H) A copy of the evaporative emissions control warranty that is provided to the ultimate purchaser as specified in sections 2419.1 and 2419.2.

(I) For complete OHRV certification to the standards specified in section 2418(a) the Executive Order of Certification application must include a description of the evaporative emission controls and applicable test data and a statement declaring that all test OHRVs for which data was submitted were tested using the appropriate test procedure and conform to the provisions of this Article. If such statements cannot be made with

respect to any test OHRV, the OHRV must be identified, and all pertinent test data relating thereto must be supplied.

1. The test data must include laboratory test reports, name and address of test laboratory, a description of the test, test dates and mileages, test fuel specification, and test results. The test data must include invalid and/or voided tests and the reason such tests are invalid or void.

2. Include a statement that the deterioration factors are determined in the same manner as the exhaust emissions deterioration factors with the exception that evaporative emissions deterioration factors are additive or include a description of the deterioration factor calculation. Additive deterioration factors computed to be less than 0.000 must be 0.000.

3. The certification level may be equal to or greater than the emissions level of the certification test. The certification level must be specified.

4. Calculations showing any over compliance or under compliance. For evaporative families that under comply, calculations must be submitted showing how the shortfall will be made up using credits as specified in subdivision (c).

(J) For small volume OHRV manufacturer design-based certification as specified in 2418(b) the Executive Order of Certification application must include the approved Component Executive Order of Certification number(s) for the fuel tank, fuel hose, and carbon canister evaporative emissions control components certified to the emissions standards listed in Table 2 of section 2418(b). Optionally, small volume OHRV manufacturers can supply compliant test results for the fuel tank, fuel hose, and carbon canister evaporative emissions control components showing that they meet the requirements listed in Table 2 of section 2418(b) when tested following the test procedures listed in section 2418(c)(2). The small volume OHRV manufacturer must document all evaporative emissions control-related parts installed on the OHRV. If the evaporative emissions control design-based standards are amended in Table 2 of section 2418(b), only Component Executive Orders of Certification that comply with the amended standard(s) may be used by small volume OHRV manufacturers after the amended standards become effective.

(5) Application for a Component Executive Order of Certification.

An application for a Component Executive Order of Certification must be submitted in the English language by the evaporative emissions control component manufacturer. Any changes to the Component Executive Order of Certification application must be updated and corrected by amendment.

The Component Executive Order of Certification application must be signed under penalty of perjury by an authorized representative of the evaporative emissions control component manufacturer. The Component Executive Order of Certification application submitted by the evaporative emissions control component manufacturer must include items described in paragraphs (A) through (F) below:

(A) The Executive Order of Certification application must include data demonstrating that the evaporative emissions component meets the applicable standards in Table 2 of section 2418(b).

(B) A statement attesting that the test equipment meets the requirements set forth in section 2418(c) and a description of the test equipment used for determining compliance with applicable emission standards.

(C) The applicant must include the data generated by an independent laboratory from at least five representative samples of the evaporative emissions control component. All five representative samples of the evaporative emissions control components must be tested using the approved test procedures as specified in 2418(c)(2). All information, including proprietary data submitted by an evaporative emission control component manufacturer pursuant to this section, will be handled in accordance with the disclosure of public records procedures specified in Cal. Code Regs., tit.17, § 91000-§ 91022.

(D) The test data must include laboratory test reports, the name and address of the test laboratory, test dates, a description of the evaporative emission control technology, and test fuel specification. The test data must include invalid and/or voided tests and the reason such tests are invalid or void.

(E) A statement attesting that the evaporative emissions control label is designed to withstand the component's total useful life and a description of the label as specified in section 2419(e). The description may be a scaled copy or blueprint of the label.

(F) The evaporative emissions control component manufacturer must submit a sample of the evaporative emission control component for which the certification application has been submitted.

(6) Approval and Disapproval of Executive Orders of Certification.

(A) Within 30 days of receipt of the Executive Order of Certification application the Executive Officer must determine whether an application is complete. If no determination is made the Executive Order of Certification application is deemed to be incomplete. If an application is deemed incomplete the Executive Officer will notify the applicant of the

determination, and the basis therefore, in writing within 30 days of the application being deemed incomplete.

(B) Within 90 days after an application has been deemed complete, the Executive Officer will notify the applicant of his or her intent to approve or disapprove an Executive Order of Certification. The Executive Officer will review the test reports and data submitted, including data from tests requested or conducted by the Executive Officer, data obtained during an inspection, and any other pertinent data or information. If the Executive Officer determines that a test OHRV does not meet the requirements of sections 2416, 2417, 2418, 2419, 2419.1, 2419.2, 2419.3, or 2419.4, or any of the incorporated test procedures, the Executive Officer will notify the applicant in writing and set forth the reason(s) for the determination. If approved, an Executive Order of Certification will be issued by the Executive Officer. The applicant and the Executive Officer may mutually agree to a longer time for reaching a decision. An applicant may submit additional supporting documentation before a decision has been reached.

(C) The Executive Officer may disapprove in whole or in part an Executive Order of Certification application for any failure to meet regulatory requirements including, but not limited to, emission results exceeding the applicable standards, incompleteness, inaccuracy, inappropriate proposed mileage accumulation procedures, maintenance, test equipment, label content or location, fuel or lubricant, and incorporation of defeat devices in OHRV(s) described by the application. Within 30 days of a decision to disapprove, the Executive Officer will notify the applicant in writing and set forth the reasons for such disapproval.

(D) Within 30 days of receiving the notice of intent to disapprove, the OHRV manufacturer may choose to proceed with option 1 or 2 below. If no communication is received from the OHRV manufacturer within 30 days, the Executive Officer will formally disapprove the Executive Order of Certification application.

1. Option 1-Request a hearing.
2. Option 2-Repair the test OHRV and demonstrate by retesting that it meets applicable evaporative emissions standards.
3. Option 3-Replace the test OHRV and demonstrate by testing, in accordance with the requirements of this regulation, that it meets applicable evaporative emissions standards.

(E) An Executive Order of Certification will be issued for a period not to exceed one model year. The Executive Order of Certification will set forth such terms and conditions, as necessary, to assure that any new OHRV(s) covered by the Executive Order of Certification will meet the provisions of this Article.

(F) If the Executive Officer determines that an evaporative emissions control component for which a Component Executive Order of Certification has been issued no longer meets the applicable emission standard the Executive Officer may suspend or revoke the Component Executive Order of Certification in accordance with subdivision (g). In such a case any pre-existing Executive Order of Certification for an OHRV that references the suspended or revoked Component Executive Order of Certification will remain valid.

(7) Approval and Disapproval of Component Executive Orders of Certification.

(A) Within 30 days of receipt of the Component Executive Order of Certification application the Executive Officer must determine whether the application is complete. If no determination is made the Component Executive Order of Certification application is deemed to be incomplete. If an application is deemed incomplete, the Executive Officer will notify the applicant of the determination, and the basis therefore, in writing within 30 days.

(B) Within 90 days after an application has been deemed complete the Executive Officer will notify the applicant of his or her intent to approve or disapprove the Component Executive Order of Certification. The Executive Officer will review the test reports and data submitted by the evaporative emissions control component manufacturer, including data from tests requested or conducted by the Executive Officer, data obtained during an inspection, and any other pertinent data or information. If the Executive Officer determines that an evaporative emissions control component does not meet the requirements of sections 2416, 2417, 2418, 2419, 2419.3, or 2419.4, or any of the incorporated test procedures, the Executive Officer will notify the applicant in writing and set forth the reason(s) for the determination. If approved, a Component Executive Order of Certification will be issued by the Executive Officer. The applicant and the Executive Officer may mutually agree to a longer time for reaching a decision. An applicant may submit additional supporting documentation before a decision has been reached.

(C) The Executive Officer may disapprove in whole or in part an application for a Component Executive Order of Certification for any failure to meet regulatory requirements including, but not limited to, evaporative emissions results exceeding the applicable standards, incompleteness, inaccuracy, inappropriate preconditioning, test equipment, label content or location, and test fuel described by the application. Within 30 days of a decision to disapprove, the Executive Officer will notify the applicant in writing and set forth the reasons for such disapproval.

(D) Within 30 days upon receipt of a disapproval notice, the evaporative emissions control component manufacturer may request a hearing with the Executive Officer.

(E) A Component Executive Order of Certification is valid until suspended or revoked by the Executive Officer or upon request of the evaporative emissions control component manufacturer.

(F) If the Executive Officer determines that an evaporative emissions control component for which an approval has been issued no longer meets the applicable standards, the Executive Officer may suspend or revoke the Component Executive Order of Certification following provisions in subdivision (g).

(c) Advanced Fuel System Credits.

(1) An OHRV manufacturer is eligible to use advanced fuel system credits to certify OHRV evaporative families with the following requirements:

(A) OHRV(s) must be tested to the diurnal standards in section 2418(a) or must be certified as a zero-emissions vehicle.

(B) In order to generate credits, zero emission vehicles must follow the administrative requirements in subdivision (d) to obtain an Executive Order of Certification.

(C) Certified zero emission vehicles will be awarded a 0.75 TOG diurnal credit by the Air Resources Board.

(D) Advanced fuel system credits may only be applied to emissions families of the same model year.

(E) An OHRV manufacturer may not sell or trade advanced fuel system credits.

(F) No evaporative family can be certified for sale in California that emits over 300 percent of the diurnal standard in section 2418(a).

(G) Results are to be calculated with consistent arithmetic units and rounded to the nearest tenth of a gram.

(H) Zero emission golf carts are not eligible to participate.

(I) An OHRV manufacturer must offset TOG debits with TOG credits for each model year, so that the sum of total TOG credits is greater than or equal to the sum of TOG debits.

(2) For each model year, an OHRV manufacturer electing to certify with credits must calculate TOG credits and debits separately for each evaporative family. For each evaporative family the OHRV manufacturer must subtract the diurnal EFEL from the diurnal standard in section 2418(a). A negative result is a TOG debit. A positive result is a TOG credit. For certified zero emission vehicles the TOG credit is 0.75 g TOG/day for each vehicle certified. The result, or per zero emission vehicle credit, is multiplied by the number of projected sales for each evaporative family for the model year to calculate the total TOG credits or debits.

(3) The OHRV manufacturer bears the burden of establishing, to the satisfaction of the Executive Officer, that the conditions upon which the Executive Order of Certification was issued were satisfied. Evaporative family certification based on credits may be revoked based on review of end-of-year reports, follow-up audits, actual sales volumes, and any other verification steps considered appropriate by the Executive Officer. If any evaporative family is found to exceed the OHRV EFEL all vehicles sold under that Executive Order of Certification will be considered non-compliant with this regulation.

(d) Administrative Requirements.

(1) Maintenance of Records for OHRV Manufacturers.

(A) The OHRV manufacturer must establish, maintain, and retain the following organized records for each evaporative family:

1. ARB evaporative family identification code,
2. Model number and engine size,
3. Make and model name,
4. Projected sales volume for the model year,
5. Certification test results,
6. Actual sales volume for the model year,
7. Phase-in calculation, and
8. Advanced fuel system credit calculations.

(B) For the purpose of this Article, actual sales are defined as shipments to distributors of OHRV(s) sold or offered for sale in California. The OHRV manufacturer must submit California actual sales data as it becomes available for each model sold or offered for sale in California, but no later than 90 days after the end of the model year.

(C) The OHRV manufacturer must retain all records required to be maintained under this section for a period of eight years from the due date for the end-of-model year report. Records may be retained as a hard copy, on CD-ROM, diskettes, and on other electronic storage media depending on the OHRV manufacturer's record retention procedure provided that in every case all information contained in the hard copy is retained. An OHRV manufacturer must submit all information requested by the Executive Officer within 30 days of the date of such request.

(D) The Executive Officer may revoke or suspend the Executive Order of Certification for an evaporative family for which the OHRV manufacturer fails to retain the records required in this section or fails to provide such information to the Executive Officer upon request. No new Executive Orders of Certification will be issued to the OHRV manufacturer until the requested records are made available, or the Executive Officer approves an OHRV manufacturer's or evaporative emissions control component manufacturer's submitted plan addressing why the records were unavailable and steps being taken to ensure future records will be available upon request.

(2) Maintenance of Records for Evaporative Emissions Control Component Manufacturers.

(A) The evaporative emissions control component manufacturer must establish, maintain, and retain the following organized records for each evaporative emissions control component certified:

1. Certification test results,
2. List of OHRV manufacturers that reference the evaporative emissions control component in their certification application, and
3. A copy of all the information and documents provided with the application for Component Executive Order of Certification.

(B) The evaporative emissions control component manufacturer must retain all evaporative emission control components used for testing to generate certification or durability data for as long as the Component Executive Order of Certification remains valid.

(C) Records may be retained as a hard copy, on CD-ROM, diskettes, and on other electronic storage media depending on the evaporative



emissions control component manufacturer's record retention procedure provided that in every case all information contained in the hard copy is retained. An evaporative emissions control component manufacturer must submit all information requested by the Executive Officer within 30 days of the date of such request.

(D) The Executive Officer may revoke or suspend the Component Executive Order of Certification for an evaporative emission control component for which the manufacturer fails to retain the records required in this section or fails to provide such information to the Executive Officer upon request. No new Executive Orders of Certification will be issued to the evaporative emissions control component manufacturer until the requested records are made available and/or the Executive Officer approves an evaporative emissions control component manufacturer submitted plan addressing why the records were unavailable and steps being taken to ensure future records will be available upon request.

(e) Final Report.

(1) All manufacturers that certify OHRV(s) to subdivision (c) must generate a final report for each evaporative family that includes the OHRV projected sales volume, actual sales volume, and EFELs. Additionally, the following items must be included in the final report:

(A) Manufacturers that certify OHRV(s) using advanced fuel system credits, described in subdivision (c), must include a calculation to show that the total TOG credits are equal to or greater than the TOG debits.

(B) At the end of the four year phase-in period OHRV manufacturers must submit a calculation to show at least 75 percent compliance with evaporative emissions standards over the 4-year period as described in section 2418(d).

(2) Unless otherwise approved by the Executive Officer, final reports must be submitted within 90 days of the end of the model year to: Chief, Emissions Compliance, Automotive Regulations and Science Division, Air Resources Board, 9528 Telstar Avenue, El Monte, CA 91731.

(3) Failure by an OHRV manufacturer to submit any final reports in the specified time for any OHRV(s) subject to regulation under this section is a violation.

(f) Evaporative Testing Requirements.

(1) Compliance Test Procedures.

(A) The Executive Officer may order an OHRV manufacturer or evaporative emissions control component manufacturer to make available for compliance testing and/or inspection one OHRV or evaporative

emission component. Unless otherwise directed by the Executive Officer, the OHRV or evaporative emissions control component must be delivered to: Chief, Emissions Compliance, Automotive Regulations and Science Division, Haagen-Smit Laboratory, Air Resources Board, 9528 Telstar Avenue, El Monte, CA 91731. The OHRV or evaporative emissions control component must be selected at random from sources specified by the Executive Officer according to a method approved by the Executive Officer which, insofar as practical, must exclude an OHRV or evaporative emissions control component that would result in an unreasonable disruption of the manufacturer's distribution system.

(B) Air Resources Board personnel must have access to OHRV or evaporative emissions control component assembly plants or distribution facilities for the purposes of OHRV selection and testing. Scheduling of access must be arranged with the representative designated in the application for an Executive Order of Certification or a Component Executive Order of Certification.

(C) All testing must be conducted in accordance with the applicable model year evaporative emission test procedures or evaporative emissions control component test procedures. Any evaporative emission control system parameters must be set to values or positions that are within the range available to the ultimate purchaser as determined by the Executive Officer. No break-in or modifications, adjustments, or special preparation or maintenance will be allowed on OHRV(s) chosen for compliance testing.

(D) Correction of damage or maladjustment that may reasonably be found to have resulted from shipment of the OHRV(s) is permitted only after an initial test of the OHRV(s) unless the damage prevents the test from being completed safely. The OHRV manufacturer may then make a request to the Executive Officer that the shipping damage be repaired, and if the Executive Officer concurs the OHRV(s) may be retested, and the original test results may be replaced by the after-repair test results.

(E) The OHRV(s) must be randomly chosen from the selected evaporative families according to the criteria specified herein.

1. The OHRV(s) must be representative of the OHRV manufacturer's California sales.
2. The OHRV(s) will be selected from the end of the assembly line.
3. The selected OHRV(s) must pass a visual inspection test to verify the OHRV has the appropriate evaporative emissions control systems as documented in the approved Executive Order of Certification for the evaporative family.

(F) Any OHRV(s) scheduled for compliance testing must be selected, tested, and evaluated in accordance with TP-933, adopted November 5, 2014. The evaporative family will be deemed to have failed the compliance testing if the measured evaporative emissions are above the applicable EFEL. Any evaporative emissions control component(s) subject to compliance testing must be selected, tested, and evaluated in accordance with the test procedure found in 2418(c)(2). The evaporative emissions control component will be deemed to have failed the compliance testing if the measured evaporative emissions are above the applicable standard.

(G) If the OHRV(s) selected for inspection fails the requirements of this section, or fails to conform to the labeling requirements of section 2419, the Executive Officer will notify the OHRV manufacturer or evaporative emissions control component manufacturer in accordance with subdivision (f)(2).

## (2) Notification of Failure.

If compliance testing identifies an OHRV or evaporative emissions control component that does not meet the evaporative emissions standards set out in section 2418, or that does not conform to the certification requirements in subdivision (b), the Executive Officer will notify the OHRV manufacturer or evaporative emissions control component manufacturer. The Executive Officer will also notify the OHRV manufacturer or evaporative emissions control component manufacturer that the Executive Order of Certification may be suspended or revoked. The OHRV manufacturer or evaporative emissions control component manufacturer has 30 calendar days in which to notify the Executive Officer of their intent to provide additional information and/or independent test results for five tanks, engines, or equipment that document compliance of the evaporative family or evaporative emissions control component. The Executive Officer will consider all relevant information provided by the OHRV manufacturer or evaporative emissions control component manufacturer and other interested parties, including, but not limited to, corrective actions applied to the noncompliant evaporative family or evaporative emissions control component.

## (g) Suspension and Revocation of Executive Orders of Certification and Component Executive Orders of Certification.

(1) The Executive Officer may not revoke or suspend the Executive Order of Certification or Component Executive Order of Certification without considering any information provided by the OHRV manufacturer or evaporative emissions control component manufacturer related to the certification requirements contained in subdivision (b).

(2) If the results of the compliance testing indicate that the failed OHRV(s) of a particular evaporative family or the failed evaporative emissions control component is produced at one plant, the Executive Officer may suspend the Executive Order of Certification or Component Executive Order of Certification with respect to the OHRV(s) or evaporative emissions control components manufactured at that plant only.

(3) Notwithstanding the foregoing, the Executive Officer may suspend an OHRV's Executive Order of Certification or Component Executive Order of Certification effective upon written notice to the OHRV manufacturer or evaporative emissions control component manufacturer if the Executive Officer finds that:

(A) The OHRV manufacturer or evaporative emission control component manufacturer has refused to comply with any of the applicable requirements for certification of this section; or

(B) The OHRV manufacturer or evaporative emissions control component manufacturer has submitted false or incomplete information in any report or information provided to the Executive Officer under this section; or

(C) The OHRV manufacturer or evaporative emissions control component manufacturer has rendered inaccurate any test data submitted under this section; or

(D) ARB personnel have been denied the opportunity to conduct activities authorized under this section by the OHRV manufacturer or evaporative emissions control component manufacturer.

(4) The Executive Officer may revoke an Executive Order of Certification for an evaporative family after the Executive Order of Certification has been suspended pursuant to subdivision (f)(1) or (f)(2) if the proposed remedy for the nonconformity, as reported by the OHRV manufacturer to the Executive Officer, is one requiring a design change or changes to the evaporative emission control system as described in the Executive Order of Certification application of the affected evaporative family.

(5) Once an Executive Order of Certification or Component Executive Order of Certification has been suspended pursuant to subdivision (f), the OHRV manufacturer or evaporative emissions control component manufacturer must take the following actions before the Executive Officer will consider reinstating the Executive Order of Certification:

(A) Submit a written report to the Executive Officer that identifies the reason for the noncompliance of the OHRV(s) or evaporative emissions control component, describes the proposed remedy, including a description of any proposed quality control and/or quality assurance measures to be taken by the OHRV manufacturer or evaporative emissions control component manufacturer to prevent future occurrences of the problem, and states the date on which the remedies will be implemented; and

(B) Demonstrate that the evaporative family for which the Executive Order of Certification, or the evaporative emissions control component for which a Component Executive Order of Certification has been issued, has been suspended does in fact comply with the regulations of this part by testing an OHRV. The results must meet the criteria required for certification in subdivision (b).

(6) Once the Executive Order of Certification has been revoked for an evaporative family or evaporative emissions control component, and if the OHRV manufacturer or evaporative emissions control component manufacturer desires to continue introduction into commerce of a modified version of that evaporative family or evaporative emissions control component then the OHRV manufacturer or evaporative emissions control component manufacturer must, after implementing the change or changes intended to remedy the nonconformity, demonstrate that the modified evaporative family or evaporative emissions control component does in fact conform to the applicable evaporative emissions standards of section 2418. Conformity can be demonstrated by having five OHRVs from the modified evaporative family or five evaporative emissions control components tested following the test procedures in section 2418(c). Testing may be waived by the Executive Officer based on an OHRV manufacturer-submitted engineering evaluation that shows the change or changes do not affect evaporative emissions.

(h) Tampering/Tamper Resistance.

(1) Manufacturers must design OHRV evaporative emissions control systems in such a way that they are resistant to tampering or removal.

(2) Any canister used to capture evaporative emissions from an off-road motorcycle must be mounted so it does not protrude from the OHRV such that it is prone to damage in a tip over.

(3) If the canister installed on an off-road motorcycle is outside what would otherwise be the cross-sectional profile of the OHRV (with the hoods closed and cargo boxes in the position required for operation), or if the canister installed on an OHRV, except off-road motorcycles, is visible to someone standing next to the OHRV when the OHRV is completely assembled then the

canister must be mounted such that non-conventional tools are required to remove it and the vapor line connections to the canister. Otherwise, fasteners requiring conventional tools may be used.

(4) The evaporative system must be designed in such a way that tampering/disassembling is not needed to conduct normal functions. Normal functions include routine maintenance and refueling of the OHRV.

(5) OHRV owners are responsible for confirming all add-on or modified parts installed on OHRVs are compliant with evaporative emissions standards.

(6) OHRV manufacturers must publish the following statement in the owner's manual to inform OHRV owners of California regulations that prohibit tampering with emission control systems: "An add-on or modified part must be compliant with applicable ARB evaporative emission control standards. A violation of this requirement is punishable by civil and/or criminal punishment."

(7) OHRV manufacturers must include an OHRV tampering statement for all new OHRVs certified to the provisions of this Article informing OHRV owners of laws that prohibit tampering. This may be accomplished by including the appropriate tampering statement on a tag attached to the OHRV or by printing the appropriate tampering statement on the front cover of the owner's manual.

(A) The OHRV tampering statement text must be printed in the English language and use block letters and numerals, which must be of a color that contrasts with the background.

(B) The OHRV tampering statement text must be large enough to be clearly legible.

(C) The OHRV tampering statement must include a warning statement that reads "The removal or modification of evaporative emission-related parts on this OHRV is illegal. Violators may be subject to civil and/or criminal penalties as provided under California and federal law."

(D) If a removable tag is used, the OHRV tampering statement must be fastened in a way that it is destroyed upon removal. The tag must also include an additional statement that reads "This tag may not be removed under penalty of law except by the vehicle owner."

(8) Any tampering, removal or modifications of the evaporative emissions control system is prohibited under Part 1068.101(b)(1), Title 40, Code of Federal Regulations.

(A) Peace officers are given the authority to enforce illegal vehicle tampering by section 27156 of the California Vehicle Code.

(B) Section 27156 of the California Vehicle Code prohibits the installation of any add-on or modified emission-related part on any pollution-controlled OHRV unless the part has been exempted by the Executive Officer. The Executive Officer will exempt an OHRV part from the prohibition of

California Vehicle Code section 27156 if the part is found to do either of the following:

1. Not reduce the effectiveness of any required evaporative emissions control device on the OHRV, or
2. Demonstrate that the applicable evaporative emissions standards are being met when the part(s) are properly installed on the OHRV. Sale or installation of any aftermarket part or parts which could potentially affect the evaporative emissions control system is prohibited in California without an ARB approved Anti-Tampering Exemption as stated in Cal. Code Regs., tit.13, § 2470 through 2476.

(i) Inspection.

Subject to the provision of this Article the Executive Officer or an authorized representative of the Executive Officer, may, as deemed necessary to ensure compliance with this Article, periodically inspect any facility which sells or offers for sale or manufactures OHRVs, sells or offers for sale or manufactures engines or sells or offers for sale or manufactures evaporative emissions control components, technology, or systems. Failure of an OHRV manufacturer or evaporative emissions control component manufacturer, distributor, retailer or other person subject to this Article to allow access for inspection purposes may be grounds for suspension or revocation of an Executive Order of Certification.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43105, 43107, 43205.5, 43210, and 43824, Health and Safety Code. Reference: Section 43013, 43018, 43105, 43106, 43106, 43205, 43205.5, 43210, and 43824, Health and Safety Code. Section 27156, California Vehicle Code.

## FINAL REGULATION ORDER

Note: This document is printed in a style to indicate changes from the existing provisions. All existing language is indicated by plain type. All additions to language are indicated by underlined text. All deletions to language are indicated by ~~strikeout~~. Only those portions containing the suggested modifications from the existing provisions are included. All other portions remain unchanged and are indicated by the symbol “\* \* \* \*” for reference.

Amend Article 4, Chapter 9, Division 3, Title 13, California Code of Regulations (CCR), including recently adopted section 2425.1, to read as follows:

### Chapter 9. Off-Road Vehicles and Engines Pollution Control Devices

#### Article 4. ~~Heavy-Duty Off-Road~~ Compression-Ignition Diesel-Cycle Engines and Equipment

##### § 2420. Applicability.

(a)(1) This article shall be applicable to new heavy-duty off-road compression-ignition engines, including all heavy-duty off-road alternate-fueled compression-ignition engines, including those engines derived from existing diesel cycle engines (hereinafter all such engines shall be referred to as compression-ignition engines), produced on or after January 1, 1996, and all other new 2000 model year and later off-road compression-ignition engines, with the exception of all engines and equipment that fall within the scope of the preemption of Section 209(e)(1)(~~A~~) of the Federal Clean Air Act (42 U.S.C. 7543(e)(1)(~~A~~)) and as defined by regulation of the U.S. Environmental Protection Agency.

(2) For any engine that is not a distinctly compression-ignition engine nor derived from such, the Executive Officer shall determine whether the engine shall be subject to these regulations, taking into consideration the relative similarity of the engine's torque-speed characteristics with those of compression-ignition engines.

(3) Every new off-road compression-ignition engine that is manufactured for sale, sold, offered for sale, introduced or delivered for introduction into commerce, or imported into California and that is subject to any of the standards prescribed in this article and documents incorporated by reference therein, is required to be certified for



use and sale by the manufacturer through the Air Resources Board and covered by an Executive Order, issued pursuant to Chapter 9, Article 4, Section 2423.

(b) Each part of this article shall be deemed severable, and in the event that any part of this chapter or article is held to be invalid, the remainder shall continue in full force and effect.

(c) This article and documents incorporated by reference herein, include provisions for certification, labeling requirements, warranty, in-use compliance testing, quality-audit testing, and certification testing.

(d)(1) For purposes of this article, military tactical vehicles or equipment means vehicles or equipment owned by the U.S. Department of Defense and/or the U.S. military services and used in combat, combat support, combat service support, tactical or relief operations, or training for such operations.

(2) This article shall not apply to engines used in off-road military tactical vehicles or equipment which have been exempted from regulations under the federal national security exemption, 40 CFR, Subpart J, Section 89.908. It shall also not apply to those vehicles and equipment covered by the definition of military tactical vehicle that are commercially available and for which a federal certificate of conformity has been issued under 40 CFR Part 89, subpart B.

(3) On January 1, 1997, the U.S. Department of Defense shall submit to the ARB a list of all vehicle and equipment types that are exempted under the above provisions and which are located in the State of California. If any additional vehicle and equipment types are added to the list during the previous 12 months, the U.S. Department of Defense shall update the list and submit it to the ARB by January 1 of the following year.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102, 43104 and 43105, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5, and 43210-43212, Health and Safety Code.

## FINAL REGULATION ORDER

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Amend Article 4, Chapter 9, Division 3, Title 13, California Code of Regulations (CCR), including recently adopted section 2425.1, to read as follows:

### Chapter 9. Off-Road Vehicles and Engines Pollution Control Devices

#### Article 4. ~~Heavy-Duty Off-Road~~ Compression-Ignition Diesel Cycle Engines and Equipment

## § 2421. Definitions.

(a) The definitions in Section 1900(b), Chapter 3, Title 13 of the California Code of Regulations, shall apply with the following additions:

(1) "1996-1999 Heavy-Duty Test Procedures" means the document entitled "California Exhaust Emission Standards and Test Procedures for New 1996-1999 Heavy-Duty Off-Road Compression-Ignition Engines, Part I-A," which includes the standards and test procedures applicable to 1996-1999 heavy-duty off-road compression-ignition engines, as adopted May 12, 1993, and as amended January 28, 2000. This document is incorporated by reference herein.

(2) "1996-1999 Smoke Test Procedures" means the document entitled "California Smoke Test Procedures for New 1996-1999 Off-Road Compression-Ignition Engines, Part III," which includes the standards and test procedures applicable to 1996-1999 heavy-duty off-road compression-ignition engines, as adopted May 12, 1993, and as amended January 28, 2000. This document is incorporated by reference herein.

(3) "2000 ~~and Later~~Plus Limited Test Procedures" means the document entitled "California Exhaust Emission Standards and Test Procedures for New 2000 and Later Tier 1, Tier 2, and Tier 3 Off-Road Compression-Ignition Engines, Part I-B," which includes the standards and test procedures applicable to 2000 and later off-road compression-ignition engines, as adopted January 28, 2000, and as amended October 20, 2005. This document is incorporated by reference herein.

(4) "2008 and Later Test Procedures" means the document titled "California Exhaust Emission Standards and Test Procedures for New 2008 and Later Tier 4 Off-Road Compression-Ignition Engines," which includes the standards and test procedures applicable to 2008 and later off-road compression-ignition engines, as adopted October 20, 2005. This document is incorporated by reference herein.

(5) "Adjustable parameter" means any device, system, or element of design that is capable of being adjusted manually (even if difficult to access), and which may affect emissions or engine performance during emission testing or normal in-use operation. This includes, but is not limited to, parameters related to injection timing and fueling rate. A parameter that is difficult to access may be excluded upon request to the Executive Officer if the parameter cannot be adjusted to a degree that affects emissions without significantly degrading engine performance, or if demonstrated that it will not be adjusted in a way that affects emissions during in-use operation.

(46) "Alternate fuel" means any fuel that will reduce non-methane hydrocarbons (on a reactivity-adjusted basis), NOx, CO, and the potential risk associated with toxic air contaminants as compared to gasoline or diesel fuel and would not result in increased deterioration of the engine. Alternate fuels include, but are not limited to, methanol, ethanol, liquefied petroleum gas, compressed natural gas, and electricity.

(57) "ARB Enforcement Officer" means any officer or employee of the Air Resources Board so designated in writing by the Executive Officer (or by his designee).

(68) "Assembly-line tests" are those tests or inspections that are performed on or at the end of the assembly line.

(9) "Auxiliary emission-control device" means any element of design that senses temperature, motive speed, engine speed, transmission gear, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any part of the emission-control system.

(710) "Blue Sky Series engine" means an off-road compression-ignition engine meeting the requirements of Section 2423(b)(4).

(811) "Calendar year" is defined as the twelve-month period commencing on January 1 through December 31.

(912) "Certification" means, with respect to new off-road compression-ignition engines, the obtaining of an Executive Order for an engine family complying with the off-road compression-ignition engine emission standards and requirements specified in this article.

(13) "Certified configuration" or "certified emissions configuration" means the assembled state of an engine that is equipped with a complete set of emission-related components and systems that are equivalent from an emissions standpoint (i.e., tolerances, calibrations, and specifications) to those components and systems that (A) were originally installed on the engine when it was issued an Executive Order, (B) have been approved by the engine manufacturer to supersede any of the original emission-related components and systems for that engine, or (C) are direct replacement parts equaling or exceeding the emissions-related performance of the original or superseded components and systems.

~~(40)~~(14) "Compression-ignition engine" means a type of engine with operating characteristics significantly similar to the theoretical Diesel combustion cycle. The non-use of a throttle to regulate intake flow for controlling power during normal operation is indicative of a compression-ignition engine. A compression-ignition engine may be petroleum-fueled (i.e., diesel-fueled) or alternate-fueled. All engines and equipment that fall within the scope of the preemption of Section 209(e)(1)~~(A)~~ of the Federal Clean Air Act (42 U.S.C. 7543(e)(1))~~(A)~~ and as defined by regulation of the Environmental Protection Agency, are specifically not included within this category.

~~(44)~~(15) "Constant-speed engine" means (A) for engines subject to the 2000 and Later Plus Limited Test Procedures, an off-road compression-ignition engine that is governed to operate only at rated speed, or (B) for engines subject to the 2008 and Later Test Procedures, an off-road compression-ignition engine certified to operate only at constant speed. Constant-speed operation means engine operation with a governor

that controls the operator input to maintain an engine at a reference speed, even under changing load. For example, an isochronous governor changes reference speed temporarily during a load change, then returns the engine to its original reference speed after the engine stabilizes. Isochronous governors typically allow speed changes up to 1.0 %. Another example is a speed-droop governor, which has a fixed reference speed at zero load and allows the reference speed to decrease as load increases. With speed-droop governors, speed typically decreases (3 to 10) % below the reference speed at zero load, such that the minimum reference speed occurs near the engine's point of maximum power.

~~(12)~~(16) "Crankcase emissions" means airborne substances emitted into the atmosphere from any portion of the engine crankcase ventilation or lubrication system.

~~(13)~~(17) "Compliance testing" means ARB directed emissions tests and inspections of a reasonable number of production engines and/or vehicles that are offered for sale, or manufactured for sale, in California in order to verify compliance with the applicable certification emission standards. The emissions tests may be conducted at ARB or contracted out facilities or at the manufacturer's facility. The testing will be done at the expense of the manufacturer.

~~(14)~~(18) "Confirmatory testing" means ARB directed emissions tests and inspections of the test engines and/or test vehicles used by the manufacturer to obtain test data for submittal with the certification application. The emissions tests may be conducted at ARB or contracted out facilities or at the manufacturer's facility. The testing will be done at the expense of the manufacturer.

~~(15)~~(19) "Dealer" means that person or entity engaged in the selling of new off-road compression-ignition engines, vehicles or equipment to ultimate purchasers.

(20) "Deterioration factor" means the relationship between emissions at the end of useful life and emissions at the low-hour test point, expressed in one of the following ways, whichever is applicable: (A) For multiplicative deterioration factors, the ratio of emissions at the end of useful life to emissions at the low-hour test point; (B) For additive deterioration factors, the difference between emissions at the end of useful life and emissions at the low-hour test point.

~~(16)~~(21) "Diesel cycle engine" means a type of engine with operating characteristics significantly similar to the theoretical diesel combustion cycle. The primary means of controlling power output in a diesel cycle engine is by limiting the amount of fuel that is injected into the combustion chambers of the engine. A diesel cycle engine may be petroleum-fueled (i.e., diesel-fueled) or alternate-fueled.

~~(17)~~(22) "Emission control system" includes any component, group of components, or engine modification that controls or causes the reduction of substances emitted from an engine.

~~(18)~~(23) "End of assembly line" is defined as that place where the final inspection test or quality-audit test is performed.

~~(19)~~(24) "Engine manufacturer" or "manufacturer" means any person who is engaged in the manufacturing or assembling of new off-road engines or the importing of new off-road engines for resale and who has been granted certification, or any person who acts for and is under the control of a manufacturer in connection with the distribution of new off-road engines. "Engine manufacturer" or "manufacturer" does not include a dealer who receives new off-road engines for sale in commerce.

~~(20)~~(25) "Exhaust emissions" means substances emitted into the atmosphere from any opening downstream from the exhaust port of an off-highway engine.

~~(21)~~(26) "Family emission limit" (FEL) means an emission level that is declared by the manufacturer to serve in lieu of an emission standard for certification purposes and for the averaging, banking, and trading program, as defined in Title 13, California Code of Regulations, Section 2423. A FEL must be expressed to the same number of decimal places as the applicable emission standard.

~~(22)~~(27) "Final calendar quarter production" is defined as the calendar quarter in which the production of an engine family ends.

~~(23)~~(28) "First calendar quarter production" is defined as the calendar quarter in which the production of an engine family begins.

~~(24)~~(29) "Fuel system" means the combination of any of the following components: fuel tank, fuel pump, fuel lines, oil injection metering system, carburetor or fuel injection components, or all fuel system vents.

~~(25)~~(30) "Gross engine malfunction" is defined as one yielding an emission value greater than the sum of the mean plus three (3) times the standard deviation. This definition shall apply only for determination of control limits.

~~(26)~~(31) "Heavy-duty off-road compression-ignition engines" or "engines" are identified as: 1996 through 1999 model year diesel or alternate fuel powered diesel cycle internal combustion engines 175 horsepower and greater, operated on or in any device by which any person or property may be propelled, moved or drawn upon a highway, but are primarily used off a highway. The engines are designed for powering construction, farm, mining, forestry and industrial implements and equipment. They are designed to be used in, but are not limited to use in, the following applications: agricultural tractors, backhoes, excavators, dozers, log skidders, trenchers, motor graders, portable generators and compressors and other miscellaneous applications.

Specifically excluded from this category are: ~~(4A)~~ engines operated on or in any device used exclusively upon stationary rails or tracks; ~~(2B)~~ marine diesel engines ~~used to propel marine vessels~~; ~~(3C)~~ internal combustion engines attached to a foundation at

a location; (4D) transportable engines subject to District permitting rules which have been operated at a location for a period of one year or more on January 1, 1997; and (5E) stationary or transportable gas turbines for power generation.

(27)(32) "Identification number" means a specification (for example, model, number/serial number combination) that allows a particular off-road compression-ignition to be distinguished from other similar engines.

(28)(33) "Marine diesel engine" means a compression-ignition engine that is installed or intended to be installed on a vessel. There are two types of Marine Diesel Engines: (A) Propulsion marine compression-ignition engines, which are those that move or are intended to move a vessel through water or direct the movement of a vessel, and (B) Auxiliary marine diesel engines, which are integral to the vessel, but which do not propel the vessel. This definition includes portable auxiliary marine engines or generators only if their fueling, cooling, or exhaust systems are an integral part of the vessel.

(33)(34) "Maximum Engine Power" means the maximum brake power point on the nominal power curve for a specific engine configuration, rounded to the nearest whole kilowatt. The "nominal power curve" of an engine configuration means the relationship between maximum available engine brake power and engine speed for a specific engine configuration, as determined using the mapping procedures specified in Part 1065 of the 2008 and Later Test Procedures, based on the manufacturer's design and production specifications for that engine. This relationship may also be expressed by a torque curve that relates maximum available engine torque with engine speed. The nominal power curve shall be within the normal production variability of actual power curves for production engines of the same engine configuration. This definition of Maximum Engine Power shall be applicable for all references to a specific power value or range of power values with respect to engines subject to the 2008 and Later Test Procedures, except as otherwise noted or permitted by the Executive Officer. Maximum Engine Power shall be used as the basis for categorizing engine families into appropriate Tier 4 power categories.

(29)(35) "Maximum Rated Power" means the maximum brake kilowatt output of an engine at rated speed as stated by the manufacturer in the manufacturer's sales and service literature and in the application for certification. Maximum Rated Power shall be used as the basis for categorizing engine families into appropriate Tier 1, Tier 2, and Tier 3 power categories, except as otherwise noted or permitted by the Executive Officer.

(35)(36) "Maximum Test Speed" has the same meaning as defined in Part 1065.1001 of the 2008 and Later Test Procedures.

(30)(37) "Model year" means the manufacturer's annual production period which includes January 1 of a calendar year or, if the manufacturer has no annual production period, the calendar year.

~~(31)~~(38) "Off-road compression-ignition engine":

(A) Except as specified in paragraph (B) of this definition, an off-road compression-ignition engine is any internal combustion engine:

1. in or on a piece of equipment that is self-propelled or serves as a dual purpose by both propelling itself and performing another function and is primarily used off the highways (such as garden tractors, off-highway mobile cranes and bulldozers); or
2. in or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers); or
3. that, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to wheels, skids, carrying handles, dolly, trailer, or platform.

(B) An internal combustion engine is not an off-road compression-ignition engine if:

1. the engine is used to propel a vehicle subject to the emission standards contained in Title 13, California Code of Regulations, Sections 1950 - 1978, or a vehicle used solely for competition, or is subject to standards promulgated under ~~s~~Section 202 of the federal Clean Air Act (42 U.S.C. 7521); or
2. the engine is regulated by a federal New Source Performance Standard promulgated under ~~s~~Section 111 of the federal Clean Air Act (42 U.S.C. 7511); or
3. the engine otherwise included in paragraph (A)(3.) of this definition remains or will remain at a location for more than 12 consecutive months or a shorter time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e., at least two years) and that operates at a single location approximately three months (or more) each year. This paragraph does not apply to an engine after the engine is removed from the location.

~~(32)~~(39) "Off-road vehicle" or "Off-road equipment" means a vehicle or equipment that is powered by an off-road compression-ignition engine.



~~(33)~~(40) "Off-road vehicle manufacturer" or "Off-road equipment manufacturer" means any person engaging in the manufacturing or assembling of new off-road vehicles or equipment, or importing of new off-road vehicles or equipment for resale, or acting for and under the control of any person in connection with distributing new off-road vehicles and equipment. An off-road vehicle manufacturer or off-road equipment manufacturer does not include a dealer, nor any person engaging in the manufacturing or assembling of new off-road engines or equipment who does not install an engine as part of that manufacturing or assembling process. All off-road vehicle or equipment manufacturing entities that are under the control of the same person are considered to be a single off-road vehicle manufacturer or off-road equipment manufacturer.

~~(34)~~(41) "Opacity" means the fraction of a beam of light, expressed in percent, which fails to penetrate a plume of smoke.

~~(35)~~(42) "Otto cycle engine" means a type of engine with operating characteristics significantly similar to the theoretical Otto combustion cycle. The primary means of controlling power output in an Otto cycle engine is by limiting the amount of air and fuel that can enter the combustion chambers of the engine. Gasoline-fueled engines are Otto cycle engines.

~~(36)~~(43) "PM and Test Cycle Limited Procedures" means the document entitled "California Exhaust Emission Standards and Test Procedures for New 1996 and Later Tier 1, Tier 2, and Tier 3 Off-Road Compression-Ignition Engines, Part II," which includes the standards and test procedures applicable for 1996 and later heavy-duty off-road compression-ignition engines, as adopted May 12, 1993, and as amended ~~January 28, 2000~~ October 20, 2005. This document is incorporated by reference herein.

~~(37)~~(44) "Post-manufacture marinizer" means a person who produces a marine compression-ignition engine by substantially modifying a certified or uncertified complete or partially complete engine, and is not controlled by the manufacturer of the base engine or by an entity that also controls the manufacturer of the base engine. For the purpose of this definition, "substantially modify" means changing an engine in a way that could change engine emission characteristics.

~~(44)~~(45) "Power category" means a specific range of maximum power that defines the applicability of standards. For example, references to the 56-130 kW power category and  $56 \leq \text{kW} < 130$  include all engines with maximum power at or above 56 kW but below 130 kW. Also references to 56-560 kW power categories or  $56 \leq \text{kW} \leq 560$  include all engines with maximum power at or above 56 kW, but at or below 560 kW, even though these engines span multiple power categories. Note that in some cases, FEL caps are based on a subset of a power category. The Tier 4 applicable power categories are defined as follows:

(A) Engines with maximum engine power below 19 kW.

(B) Engines with maximum engine power at or above 19 kW but below 56 kW.

- (C) Engines with maximum engine power at or above 56 kW but below 130 kW.  
(D) Engines with maximum engine power at or above 130 kW but at or below 560 kW.  
(E) Engines with maximum engine power above 560 kW.

~~(38)~~(46) "Propulsion marine compression-ignition engine" means a marine compression-ignition engine that is intended to move a vessel through water or direct the movement of a vessel.

~~(39)~~(47) "Quality-audit test" is defined as the test performed on a sample of production engines produced for sale in California.

~~(40)~~(48) "Rated speed" is the maximum full load governed speed for governed engines and the speed of maximum horsepower for ungoverned engines.

~~(41)~~(49) "Representative engine sample" means that the sample is typical of the engine family or engine family group as a whole (as defined in applicable test procedures). Except as provided in Section 2427, a representative sample would not include a low-volume subgroup of the engine family or engine family group.

~~(42)~~(50) "Scheduled maintenance" means any adjustment, repair, removal, disassembly, cleaning, or replacement of components or systems required by the manufacturer that is performed on a periodic basis to prevent part failure or equipment or engine malfunction, or anticipated as necessary to correct an overt indication of malfunction or failure for which periodic maintenance is not appropriate.

~~(43)~~(51) "Small off-road engine" has the meaning specified in Title 13, California Code of Regulations, Section 2401.

~~(51)~~(52) "Small-volume engine manufacturer" means a small business engine manufacturer that had engine families certified to meet the requirements of 40 CFR part 89 before 2003, had annual U.S.-directed production of no more than 2,500 units in 2002 and all earlier calendar years, and has 1000 or fewer employees. For manufacturers owned by a parent company, the production limit applies to the production of the parent company and all its subsidiaries and the employee limit applies to the total number of employees of the parent company and all its subsidiaries.

~~(44)~~(53) "Tier 1 engine" means an engine subject to the Tier 1 emission standards listed in Section 2423(b)(1)(A) of this article.

~~(45)~~(54) "Tier 2 engine" means an engine subject to the Tier 2 emission standards listed in Section 2423(b)(1)(A) of this article.

~~(46)~~(55) "Tier 3 engine" means an engine subject to the Tier 3 emission standards listed in Section 2423(b)(1)(A) of this article.

~~(55)~~(56) "Tier 4 engine" means an engine subject to the Tier 4 emission standards listed in Section 2423(b)(1)(B) of this article.

~~(47)~~(57) "Ultimate purchaser" means the first person who in good faith purchases a new engine or equipment for purposes other than resale.

~~(48)~~(58) "Unscheduled maintenance" means any inspection, adjustment, repair, removal, disassembly, cleaning, or replacement of components or systems that is performed to correct or diagnose a part failure which was not anticipated.

~~(49)~~(59) "Useful life" means:

- (A) For all engines rated under 19 kilowatts, and for constant-speed engines rated under 37 kilowatts with rated speeds greater than or equal to 3,000 revolutions per minute, a period of use of five years or 3,000 hours of operation, whichever first occurs.
- (B) For all other engines rated at or above 19 kilowatts and under 37 kilowatts, a period of use of seven years or 5,000 hours of operation, whichever first occurs.
- (C) For all engines rated at or above 37 kilowatts, a period of use of ten years or 8,000 hours, whichever first occurs.

~~(50)~~(60) "Vessel" has the meaning specified in Section 9840 of the California Vehicle Code.

~~(51)~~(61) "Warrantable condition" means any condition of an engine that triggers the responsibility of the manufacturer to take corrective action pursuant to Section 2425.

~~(52)~~(62) "Warranted part" means any emissions-related part installed on an engine by the equipment manufacturer, or installed in a warranty repair, which is listed on the warranty parts list.

~~(53)~~(63) "Warranty period" means the period of time, either in years or hours of operation, that the engine or part is covered by the warranty provisions.

~~(54)~~(64) "Warranty station" means a service facility authorized by the equipment or engine manufacturer to perform warranty repairs. This shall include all manufacturer distribution centers that are franchised to service the subject equipment or engines.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

**PART 5**

**FINAL REGULATION ORDER**

**Tier 4 Off-Road Compression-Ignition Engines**

**Title 13**

**California Code of Regulations**

**Sections 2421, 2423, 2424, 2425, 2425.1, 2426, 2427**

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## FINAL REGULATION ORDER

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### Article 4. Off-Road Compression-Ignition Engines and Equipment

Amend §§ 2421, 2423, 2424, 2425, 2425.1, 2426, and 2427, title 13, California Code of Regulations, to read as follows:

#### § 2421. Definitions.

(a) The definitions in Section 1900(b), Chapter 3, Title 13 of the California Code of Regulations, shall apply with the following additions:

(1) "1996-1999 Heavy-Duty Test Procedures" means the document ~~entitled~~ "California Exhaust Emission Standards and Test Procedures for New 1996-1999 Heavy-Duty Off-Road Compression-Ignition Engines, Part I-A," which includes the standards and test procedures applicable to 1996-1999 heavy-duty off-road compression-ignition engines, as adopted May 12, 1993, and as amended January 28, 2000. This document is incorporated by reference herein.

(2) "1996-1999 Smoke Test Procedures" means the document ~~entitled~~ "California Smoke Test Procedures for New 1996-1999 Off-Road Compression-Ignition Engines, Part III," which includes the standards and test procedures applicable to 1996-1999 heavy-duty off-road compression-ignition engines, as adopted May 12, 1993, and as amended January 28, 2000. This document is incorporated by reference herein.

(3) "2000 Plus Limited Test Procedures" means the document titled "California Exhaust Emission Standards and Test Procedures for New 2000 and Later Tier 1, Tier 2, and Tier 3 Off-Road Compression-Ignition Engines, Part I-B," which includes the standards and test procedures applicable to 2000 and later model year off-road compression-ignition engines, as adopted January 28, 2000, and as amended October 20, 2005. This document is incorporated by reference herein.

(4)(A) "~~2008-2010 and Later~~ Test Procedures" means the document titled "California Exhaust Emission Standards and Test Procedures for New ~~2008-2010 and Later~~ Tier 4 Off-Road Compression-Ignition Engines," which

includes the standards and test procedures applicable to 2008-~~2010~~ and later model year off-road compression-ignition engines, as adopted October 20, 2005, and as last amended October 25, 2012. This document is incorporated by reference herein.

(B) “2011 and Later Test Procedures” means the collection of documents titled “California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, Parts I-D, I-E, and I-F,” which include, respectively, the emission standards, general compliance provisions, and engine testing procedures applicable to 2011 model year and later off-road compression engines, as adopted October 25, 2012. These documents are incorporated by reference herein.

\* \* \* \* \*

(15) “Constant-speed engine” means

(A) for engines subject to the 2000 and Later Plus Limited Test Procedures, an off-road compression-ignition engine that is governed to operate only at rated speed, or

(B) for engines subject to the 2008-~~2010~~ and Later Test Procedures, an off-road compression-ignition engine certified to operate only at constant speed, where Cconstant-speed operation means engine operation with a governor that controls the operator input to maintain an engine at a reference speed, even under changing load. For example, an isochronous governor changes reference speed temporarily during a load change, then returns the engine to its original reference speed after the engine stabilizes. Isochronous governors typically allow speed changes up to 1.0 %. Another example is a speed-droop governor, which has a fixed reference speed at zero load and allows the reference speed to decrease as load increases. With speed-droop governors, speed typically decreases (3 to 10) % below the reference speed at zero load, such that the minimum reference speed occurs near the engine’s point of maximum power, or

(C) for engines subject to the 2011 and Later Test Procedures, an off-road compression-ignition engine certified to operate only at constant speed, where constant-speed operation means engine operation with a governor that automatically controls the operator demand to maintain engine speed, even under changing load. Governors do not always maintain speed exactly constant. Typically speed can decrease (0.1 to 10) % below the speed at zero load, such that the minimum speed occurs near the engine’s point of maximum power.

\* \* \* \* \*

(19) “Date of manufacture” or “Build date” means one of the following:

(A) For engines, the date on which the crankshaft is installed in an engine block, with the following exceptions:

1. Reserved.

2. 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.

(B) For equipment, the date on which the engine is installed, unless otherwise specified in this Article 4. Manufacturers may alternatively assign a date of manufacture later in the assembly process.

***[NO CHANGES TO DEFINITIONS (19) – (33) EXCEPT TO RENUMBER TO (20)-(34)]***

(3435) “Maximum Engine Power” means the maximum brake power point on the nominal power curve for a specific engine configuration, rounded to the nearest whole kilowatt. The “nominal power curve” of an engine configuration means the relationship between maximum available engine brake power and engine speed for a specific engine configuration, as determined using the mapping procedures specified in Part 1065 of the 2008-2010 and Later Test Procedures or Part I-F of the 2011 and Later Test Procedures as applicable, based on the manufacturer’s design and production specifications for that engine. This relationship may also be expressed by a torque curve that relates maximum available engine torque with engine speed. The nominal power curve shall be within the normal production variability of actual power curves for production engines of the same engine configuration. This definition of Maximum Engine Power shall be applicable for all references to a specific power value or range of power values with respect to engines subject to the 2008-2010 or 2011 and Later Test Procedures as applicable, except as otherwise noted or permitted by the Executive Officer. Maximum Engine Power shall be used as the basis for categorizing engine families into appropriate Tier 4 power categories.

(3536) “Maximum Rated Power” means the maximum brake kilowatt output of an engine at rated speed as stated by the manufacturer in the manufacturer’s sales and service literature and in the application for certification. Maximum Rated Power shall be used as the basis for categorizing engine families into appropriate Tier 1, Tier 2, and Tier 3 power categories, except as otherwise noted or permitted by the Executive Officer.

(3637) “Maximum Test Speed” has the same meaning as defined in Part 1065.1001 of the 2008-2010 and 2011 and Later Test Procedures.



(~~37~~38) "Model year" means the manufacturer's annual production period which includes January 1 of a calendar year or, if the manufacturer has no annual production period, the calendar year. Other examples for the determination of model year are identified in §1039.801 of the 2008-2010 and the 2011 and Later Test Procedures, as applicable.

***[NO CHANGES TO DEFINITIONS (38) – (64) EXCEPT TO RENUMBER TO (39)-(65)]***

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

## FINAL REGULATION ORDER

Note: This document is printed in a style to indicate changes from the existing provisions. All existing language is indicated by plain type. All additions to language are indicated by underlined text. All deletions to language are indicated by ~~strikeout~~. Only those portions containing the suggested modifications from the existing provisions are included. All other portions remain unchanged and are indicated by the symbol "\*\*\*\*" for reference.

Amend Article 4, Chapter 9, Division 3, Title 13, California Code of Regulations (CCR), including recently adopted section 2425.1, to read as follows:

### Chapter 9. Off-Road Vehicles and Engines Pollution Control Devices

#### Article 4. ~~Heavy-Duty Off-Road~~ Compression-Ignition Diesel Cycle Engines and Equipment

**§ 2423. Exhaust Emission Standards and Test Procedures – Off-Road Compression-Ignition Engines.**

(a) This section shall be applicable to new heavy-duty off-road compression-ignition engines, produced on or after January 1, 1996, and all other new 2000 and later model year off-road compression-ignition engines. For the purposes of this section, these engines shall be called “compression-ignition engines.”

(b)(1)(A) Exhaust emissions from new off-road compression-ignition engines, as sold in this state and as appropriate based on model year and maximum rated power, shall not exceed the levels contained in Table 1 a with respect to steady-state testing. Table 1a follows:

Table 1a. – Tier 1, Tier 2, and Tier 3 Exhaust Emission Standards  
(grams per kilowatt-hour)

Maximum Rated Power (kW) <sup>1</sup>	Tier	Model Year	NO <sub>x</sub> <sup>2</sup>	HC <sup>3</sup>	NMHC+NO <sub>x</sub> <sup>4</sup>	CO <sup>5</sup>	PM <sup>6</sup>
kW<8	Tier 1	2000-2004	—	—	10.5	8.0	1.0
	Tier 2	2005-and later-2007 <sup>7</sup>	—	—	7.5	8.0	0.80
8≤kW<19	Tier 1	2000-2004	—	—	9.5	6.6	0.80
	Tier 2	2005-and later-2007 <sup>7</sup>	—	—	7.5	6.6	0.80
19≤kW<37	Tier 1	2000-2003	—	—	9.5	5.5	0.80
	Tier 2	2004-and later-2007 <sup>7</sup>	—	—	7.5	5.5	0.60
37≤kW< <u>75</u> <sup>56</sup>	Tier 1	2000-2003	9.2	—	—	—	—
	Tier 2	2004-2007	—	—	7.5	5.0	0.40
	Tier 3 <sup>8</sup>	2008-and later-2011	—	—	4.7	5.0	— 0.40
<u>56</u> ≤kW< <u>75</u>	<u>Tier 1</u>	<u>2000-2003</u>	<u>9.2</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
	<u>Tier 2</u>	<u>2004-2007</u>	<u>—</u>	<u>—</u>	<u>7.5</u>	<u>5.0</u>	<u>0.40</u>
	<u>Tier 3</u>	<u>2008-2011</u>	<u>—</u>	<u>—</u>	<u>4.7</u>	<u>5.0</u>	<u>0.40</u>
75≤kW<130	Tier 1	2000-2002	9.2	—	—	—	—
	Tier 2	2003-2006	—	—	6.6	5.0	0.30
	Tier 3	2007-and later-2011	—	—	4.0	5.0	— 0.30
130≤kW<225	Tier 1	1996-2002	9.2	1.3	—	11.4	0.54
	Tier 2	2003-2005	—	—	6.6	3.5	0.20
	Tier 3	2006-and later-2010	—	—	4.0	3.5	— 0.20
225≤kW<450	Tier 1	1996-2000	9.2	1.3	—	11.4	0.54
	Tier 2	2001-2005	—	—	6.4	3.5	0.20
	Tier 3	2006-and later-2010	—	—	4.0	3.5	— 0.20
450≤kW≤560	Tier 1	1996-2001	9.2	1.3	—	11.4	0.54
	Tier 2	2002-2005	—	—	6.4	3.5	0.20
	Tier 3	2006-and later-2010	—	—	4.0	3.5	— 0.20
kW>560	Tier 1	2000-2005	9.2	1.3	—	11.4	0.54
	Tier 2	2006-and later-2010	—	—	6.4	3.5	0.20

1. kW means kilowatts.

2. NO<sub>x</sub> means Oxides of Nitrogen.

3. HC means Hydrocarbons.

4. NMHC+NO<sub>x</sub> means Non-Methane Hydrocarbons plus Oxides of Nitrogen.

5. CO means Carbon Monoxide.

6. PM means Particulate Matter.

7. Tier 2 standards for propulsion marine compression-ignition engines below 37 kW remain in effect beyond the 2007 end date.

8. Manufacturers may optionally certify engine families to the interim Tier 4 standards in Table 1b for this power category through 2012.

(B) Exhaust emissions from new off-road compression-ignition engines, as sold in this state and as appropriate based on model year and maximum engine power, shall not exceed the levels contained in Table 1b, with respect to steady-state testing, transient testing, and, after application of the criteria in Table 1c, not-to-exceed testing, as applicable. Other compliance options are permissible as provided in the 2008 and Later Test Procedures.

**Table 1b. – Tier 4 Exhaust Emission Standards  
(grams per kilowatt-hour)**

MAXIMUM ENGINE POWER	MODEL YEAR	TYPE	PM	NMHC+ NOX	NMHC	NOX	CO
			grams per kilowatt-hour				
<u>kW&lt;8<sup>1</sup></u>	<u>2008 and later</u>	<u>FINAL</u>	<u>0.40<sup>2</sup></u>	<u>7.5</u>	<u>=</u>	<u>=</u>	<u>8.0</u>
<u>8≤kW&lt;19<sup>1</sup></u>							<u>6.6</u>
<u>19≤kW&lt;37<sup>1</sup></u>	<u>2008-2012</u>	<u>INTERIM</u>	<u>0.30</u>	<u>7.5</u>	<u>=</u>	<u>=</u>	<u>5.5</u>
	<u>2013 and later</u>	<u>FINAL</u>	<u>0.03</u>	<u>4.7</u>			
<u>37≤kW&lt;56<sup>3</sup></u>	<u>2008-2012</u>	<u>INTERIM</u>	<u>0.30</u>	<u>4.7</u>	<u>=</u>	<u>=</u>	<u>5.0</u>
	<u>2013 and later</u>	<u>FINAL</u>	<u>0.03</u>				
<u>56≤kW&lt;75</u>	<u>2012-2014<sup>4</sup></u>	<u>PHASE-IN</u>	<u>0.02</u>	<u>=</u>	<u>0.19</u>	<u>0.40</u>	<u>5.0</u>
		<u>PHASE-OUT</u>		<u>4.7</u>	<u>=</u>	<u>=</u>	
		<u>or/ ALT NOX</u>		<u>=</u>	<u>0.19</u>	<u>3.4<sup>5</sup></u>	
	<u>2015 and later</u>	<u>FINAL</u>		<u>=</u>	<u>0.19</u>	<u>0.40</u>	
<u>75≤kW&lt;130</u>	<u>2012-2014<sup>4</sup></u>	<u>PHASE-IN</u>	<u>0.02</u>	<u>=</u>	<u>0.19</u>	<u>0.40</u>	<u>5.0</u>
		<u>PHASE-OUT</u>		<u>4.0</u>	<u>=</u>	<u>=</u>	
		<u>or/ ALT NOX</u>		<u>=</u>	<u>0.19</u>	<u>3.4<sup>5</sup></u>	
	<u>2015 and later</u>	<u>FINAL</u>		<u>=</u>	<u>0.19</u>	<u>0.40</u>	
<u>130≤kW≤560</u>	<u>2011-2013</u>	<u>PHASE-IN</u>	<u>0.02</u>	<u>=</u>	<u>0.19</u>	<u>0.40</u>	<u>3.5</u>
		<u>PHASE-OUT</u>		<u>4.0</u>	<u>=</u>	<u>=</u>	
		<u>or/ ALT NOX</u>		<u>=</u>	<u>0.19</u>	<u>2.0</u>	
	<u>2014 and later</u>	<u>FINAL</u>		<u>=</u>	<u>0.19</u>	<u>0.40</u>	
<u>560 kW&lt;GEN<sup>6</sup>≤900 kW</u>	<u>2011-2014</u>	<u>INTERIM</u>	<u>0.10</u>	<u>=</u>	<u>0.40</u>	<u>3.5</u>	<u>3.5</u>
	<u>2015 and later</u>	<u>FINAL</u>	<u>0.03</u>		<u>0.19</u>	<u>0.67</u>	
<u>GEN&gt;900 kW</u>	<u>2011-2014</u>	<u>INTERIM</u>	<u>0.10</u>	<u>=</u>	<u>0.40</u>	<u>0.67</u>	<u>3.5</u>
	<u>2015 and later</u>	<u>FINAL</u>	<u>0.03</u>		<u>0.19</u>		
<u>ELSE<sup>7</sup>&gt;560 kW</u>	<u>2011-2014</u>	<u>INTERIM</u>	<u>0.10</u>	<u>=</u>	<u>0.40</u>	<u>3.5</u>	<u>3.5</u>
	<u>2015 and later</u>	<u>FINAL</u>	<u>0.04</u>		<u>0.19</u>		

Notes:

- 1 Propulsion marine compression-ignition engines below 37 kW are not subject to Tier 4 standards or requirements. All previously adopted requirements remain applicable for these engines.
- 2 The Tier 4 PM standard for hand-start, air cooled, direct injection engines below 8 kW is 0.60 g/kW-hr, but is not required until 2010.
- 3 Engine families in this power category may alternately meet Tier 3 PM standards from 2008-2011 in exchange for introducing final PM standards in 2012.
- 4 Manufacturers have the option of complying with the Tier 4 standards over a two year period at 50% per year using banked Tier 2 credits or over a three year period at 25% per year without the use of Tier 2 credits. The three year phase-in period is shown. The 2014 model year cannot extend beyond December 30, 2014, when the 3 year phase-in option is used.
- 5 Manufacturers may comply with the standards during the transitional implementation years using either a phase-in / phase-out approach or by using the Alternate NOx approach. The three year 25% alternate NOx standard is shown in the table. The two year 50% phase-in NOx standard would be 2.3 g/kW-hr.
- 6 "GEN" refers to generator engines only.
- 7 "ELSE" refers to all mobile machinery excluding generator engines.

Table 1c. – Criteria for Determining NTE Limits<sup>1</sup>

<u>Pollutant</u>	<u>Apply NTE Multiplier of 1.25 when ...</u>	<u>Apply NTE Multiplier of 1.50 when ...</u>
<u>NOx</u>	<u>NOx Standard or FEL <math>\geq</math> 2.5 g/kW-hr</u>	<u>NOx Standard<sup>2</sup> or FEL <math>&lt;</math> 2.5 g/kW-hr</u>
<u>NMHC</u>	<u>NOx Standard or FEL <math>\geq</math> 2.5 g/kW-hr</u>	<u>NOx Standard<sup>2</sup> or FEL <math>&lt;</math> 2.5 g/kW-hr</u>
<u>NMHC+NOx</u>	<u>NMHC+NOx Standard or FEL <math>\geq</math> 2.7 g/kW-hr</u>	<u>NMHC+NOx Standard<sup>2</sup> or FEL <math>&lt;</math> 2.7 g/kW-hr</u>
<u>PM</u>	<u>PM Standard or FEL <math>\geq</math> 0.07 g/kW-hr</u>	<u>PM<sup>2</sup> Standard or FEL<sup>3</sup> <math>&lt;</math> 0.07 g/kW-hr</u>
<u>CO</u>	<u>Always</u>	<u>Never</u>

Notes:

1 Other provisions described in the 2008 and Later Test Procedures may affect the calculation of NTE limits.

2 Engines must be certified to these standards without the use of ABT credits.

3 For engines certified to a PM FEL less than or equal to 0.01 g/kW-hr, the PM NTE limit shall be 0.02 g/kW-hr.

(2) Manufacturers may elect to include engine families in the one of two averaging, banking, and trading (ABT) programs, corresponding to the engine family's model year and emissions categorization. ~~†~~The provisions of which these separate ABT programs are specified in Part 89, Subpart C of the 2000 Plus and Later Limited Test Procedures and Part 1039, Subpart H of the 2008 and Later Test Procedures.

(A) For engine families subject to the 2000 Plus Limited Test Procedures, ~~†~~the manufacturer must set a family emission limit (FEL) not to exceed the levels contained in Table 2a. The FEL established by the manufacturer serves as the emission standard for that engine family. Table 2a follows:

Table 2a – Upper Limit for Tier 1, Tier 2, and Tier 3 Family Emission Limits (FEL)  
(grams per kilowatt-hour)

Maximum Rated Power (kW)	Tier	Model Year	NO <sub>x</sub>	NMHC+NO <sub>x</sub>	PM FEL
kW<8	Tier 1	2000-2004		16.0	1.2
	Tier 2	2005-and-later- <u>2007</u>		10.5	1.0
8≤kW<19	Tier 1	2000-2004		16.0	1.2
	Tier 2	2005-and-later- <u>2007</u>		9.5	0.80
19≤kW<37	Tier 1	2000-2003		16.0	1.2
	Tier 2	2004-and-later- <u>2007</u>		9.5	0.80
37≤kW< <del>75</del> <u>56</u>	Tier 1	2000-2003	14.6		
	Tier 2	2004-2007		11.5	1.2
	Tier 3 <sup>1</sup>	2008-and-later- <u>2011</u>		7.5	<u>1.2</u>
<u>56</u> ≤kW<75	<u>Tier 1</u>	<u>2000-2003</u>	<u>14.6</u>		
	<u>Tier 2</u>	<u>2004-2007</u>		<u>11.5</u>	<u>1.2</u>
	<u>Tier 3</u>	<u>2008-2011</u>		<u>7.5</u>	<u>1.2</u>
75≤kW<130	Tier 1	2000-2002	14.6		
	Tier 2	2003-2006		11.5	1.2
	Tier 3	2007-and-later- <u>2011</u>		6.6	<u>1.2</u>
130≤kW<225	Tier 1	2000-2002	14.6		
	Tier 2	2003-2005		10.5	0.54
	Tier 3	2006-and-later- <u>2010</u>		6.6	<u>0.54</u>
225≤kW<450	Tier 1	2000	14.6		
	Tier 2	2001-2005		10.5	0.54
	Tier 3	2006-and-later- <u>2010</u>		6.4	<u>0.54</u>
450≤kW≤560	Tier 1	2000-2001	14.6		
	Tier 2	2002-2005		10.5	0.54
	Tier 3	2006-and-later- <u>2010</u>		6.4	<u>0.54</u>
kW>560	Tier 1	2000-2005	14.6		
	Tier 2	2006-and-later- <u>2010</u>		10.5	0.54

1. Manufacturers may optionally certify engine families to the interim Tier 4 FEL caps in Table 2b for this power category through 2012.



(B) For engine families subject to the 2008 and Later Test Procedures, the manufacturer must set a family emission limit (FEL) not to exceed, as applicable, the levels contained in Table 2b. Three distinct FEL types (primary, interim, and alternate) are available conditionally. Primary FEL types are applicable to all power categories indefinitely, whereas interim and alternate FEL types are of variable duration and may be selectively applied to total or partial engine family production volumes as described in the 2008 and Later Test Procedures. The FEL established by the manufacturer serves as the emission standard for that engine family, and is used for determining NTE limits in conjunction with the criteria in Table 1c. Temporary compliance adjustment factors, as explained in the 2008 and Later Test Procedures, shall be applied by the manufacturer to compensate for the use of transitional alternate FELs (Type ALT 20% in Table 2b) when calculating emission credits. Table 2b follows:

**Table 2b – Upper Limit for Tier 4 Family Emission Limits (FELs) and Alternate Allowances  
Part 1**

MAXIMUM ENGINE POWER	FEL TYPE	MODEL YEAR	PM	NOX	NMHC+ NOX
			grams per kilowatt-hour		
<u>kW&lt;8</u>	<u>Primary</u>	<u>2008 and later</u>	<u>0.80</u>	<u>-</u>	<u>10.5</u>
<u>8≤kW&lt;19</u>	<u>Primary</u>	<u>2008 and later</u>	<u>0.80</u>	<u>-</u>	<u>9.5</u>
<u>19≤kW&lt;37</u>	<u>Interim</u>	<u>2008-2012</u>	<u>0.60</u>	<u>-</u>	<u>9.5</u>
	<u>Primary</u>	<u>2013 and later</u>	<u>0.05</u>	<u>-</u>	<u>7.5</u>
	<u>ALT 20%<sup>1</sup></u>	<u>2013-2016</u>	<u>0.30</u>	<u>-</u>	<u>7.5</u>
	<u>ALT 5%<sup>2</sup></u>	<u>2017 and later</u>			
<u>37≤kW&lt;56</u>	<u>Interim</u>	<u>2008-2012<sup>3</sup></u>	<u>0.40</u>	<u>-</u>	<u>7.5</u>
	<u>Primary</u>	<u>2013 and later<sup>3</sup></u>	<u>0.05</u>	<u>-</u>	<u>7.5</u>
	<u>ALT 20%</u>	<u>2013-2016<sup>3</sup></u>	<u>0.30</u>	<u>-</u>	<u>7.5</u>
	<u>ALT 5%</u>	<u>2017 and later<sup>3</sup></u>			
<u>56≤kW&lt;75</u>	<u>Phase-in</u>	<u>2012-2013</u>	<u>0.04</u>	<u>0.80</u>	<u>-</u>
	<u>Phase-out</u>			<u>-</u>	<u>7.5</u>
	<u>Alternate NOx Std<sup>4</sup></u>	<u>2012-2013</u>	<u>0.04</u>	<u>3.0<sup>7</sup></u>	<u>-</u>
		<u>2012-2014</u>		<u>4.4</u>	
	<u>Primary</u>	<u>2014/2015<sup>5</sup> and later</u>	<u>0.04</u>	<u>0.80</u>	<u>-</u>
	<u>ALT 20% PM</u>	<u>2012-2015</u>	<u>0.40</u>		<u>-</u>
	<u>ALT 20% NOX</u>	<u>2014-2015<sup>6</sup></u>		<u>4.4</u>	<u>-</u>
	<u>ALT 5%</u>	<u>2016 and later</u>	<u>0.40</u>	<u>4.4</u>	<u>-</u>

**Notes:**

- 1 This alternate FEL option is transitional for the four years specified and applies to at most 20% of a manufacturer's U.S. directed population of engine families per year.
- 2 This alternate FEL option is available indefinitely, but only applies to 5% of a manufacturer's U.S. directed population of engine families per year.
- 3 These dates correspond to the compliance option of meeting interim standards in 2008; else the primary and alternate FEL caps would begin and end one year earlier, and 2008-2011 engines would not be eligible for participation in the Tier 4 ABT program.
- 4 Two alternate NOx standards and corresponding FEL caps are available for this category with corresponding alternate phase-in options.
- 5 The effective date of the primary FEL cap follows the phase-in period of the selected NOx FEL cap.
- 6 If interim Tier 4 standards are not met in 2008, the alternate NOx FEL would only be available for 2015.
- 7 If neither the alternate phase-in option nor banked Tier 2 credits are used, either NOx standard and corresponding FEL may be applied for this category.

**Table 2b – Upper Limit for Tier 4 Family Emission Limits (FELs) and Alternate Allowances  
Part 2**

MAXIMUM ENGINE POWER	FEL TYPE	MODEL YEAR	PM	NOX	NMHC+NOX	
			grams per kilowatt-hour			
<u>75≤kW&lt;130</u>	<u>Phase-in</u>	<u>2012-2013</u>	<u>0.04</u>	<u>0.80</u>	<u>-</u>	
	<u>Phase-out</u>			<u>-</u>	<u>6.6</u>	
	<u>Alternate NOx Std<sup>4</sup></u>	<u>2012-2013</u>		<u>3.0<sup>7</sup></u>	<u>-</u>	
		<u>2012-2014</u>		<u>3.8</u>	<u>-</u>	
	<u>Primary</u>	<u>2014/2015<sup>5</sup> and later</u>		<u>0.80</u>	<u>-</u>	
	<u>ALT 20% PM</u>	<u>2012-2015</u>		<u>0.30</u>		<u>-</u>
	<u>ALT 20% NOX</u>	<u>2014-2015<sup>6</sup></u>			<u>3.8</u>	<u>-</u>
<u>ALT 5%</u>	<u>2016 and later</u>	<u>0.30</u>	<u>3.8</u>	<u>-</u>		
<u>130≤kW≤560</u>	<u>Phase-in</u>	<u>2011-2013</u>	<u>0.04</u>	<u>0.80</u>	<u>-</u>	
	<u>Phase-out</u>			<u>-</u>	<u>6.6/6.4<sup>8</sup></u>	
	<u>Alternate NOx Std</u>	<u>2011-2013</u>		<u>2.7</u>	<u>-</u>	
	<u>Primary</u>	<u>2014 and later</u>		<u>0.80</u>	<u>-</u>	
	<u>ALT 20% PM</u>	<u>2011-2014</u>		<u>0.20</u>		<u>-</u>
	<u>ALT 20% NOX</u>	<u>2014</u>			<u>3.8</u>	<u>-</u>
	<u>ALT 5%</u>	<u>2015 and later</u>		<u>0.20</u>	<u>3.8</u>	<u>-</u>
<u>GEN&gt;560kW</u>	<u>Interim</u>	<u>2011-2014</u>	<u>0.20</u>	<u>6.2</u>	<u>-</u>	
	<u>Primary</u>	<u>2015 and later</u>	<u>0.05</u>	<u>1.07</u>	<u>-</u>	
	<u>ALT 20%</u>	<u>2015-2018</u>	<u>0.10</u>	<u>3.5</u>	<u>-</u>	
	<u>ALT 5%</u>	<u>2019 and later</u>			<u>-</u>	
<u>ELSE&gt;560kW</u>	<u>Interim</u>	<u>2011-2014</u>	<u>0.20</u>	<u>6.2</u>	<u>-</u>	
	<u>Primary</u>	<u>2015 and later</u>	<u>0.07</u>		<u>-</u>	
	<u>ALT 20%</u>	<u>2015-2018</u>	<u>0.10</u>		<u>-</u>	
	<u>ALT 5%</u>	<u>2019 and later</u>			<u>-</u>	

**Notes:**

4 Two alternate NOx standards and corresponding FEL caps are available for this category with corresponding alternate phase-in options.

5 The effective date of the primary FEL cap follows the phase-in period of the selected NOx FEL cap.

6 If interim Tier 4 standards are not met in 2008, the alternate NOx FEL would only be available for 2015.

7 If neither the alternate phase-in option nor banked Tier 2 credits are used, either NOx standard and corresponding FEL may be applied for this category.

8 The phase-out NMHC+NOX FEL cap is 6.6 g/kW-hr for engines < 225 kW, and 6.4 g/kW-hr for engines ≥ 225 kW in this category.

(C) Split family provision. For generating or using credits in the  $56 \leq \text{kW} \leq 560$  power categories during the phase-in of Tier 4 standards, engine manufacturers may elect to split an engine family into two subfamilies (e.g., one which uses credits and one which generates credits for the same pollutant). The engine manufacturer must indicate in the application for certification that the engine family is to be split, and may calculate

emission credits relative to different emission standards (i.e., phase-in and phase-out standards) for different sets of engines within the engine family, but must certify the engine family to a single set of standards and FELs. The engine manufacturer shall calculate NMHC+NOx emission credits by adding the NOx FEL to the NMHC phase-in standard for comparison with the applicable NMHC+NOx phase-out standard. Any engine family certified under the provisions of this paragraph (C) must meet the applicable phase-in standard for NMHC. The engine manufacturer shall be responsible for assigning the number and configurations of engines within the respective subfamilies before the due date of the final report required in Part 1039, Subpart H of the 2008 and Later Test Procedures. The same label must be applied to each engine in the family, and must include the NOx FEL to which the engine is certified.

(3)(A) The opacity of smoke emissions from new 1996 through 1999 model year heavy-duty off-road compression-ignition engines 175 to 750 horsepower, inclusive, or from all new 2000 and later model year compression-ignition engines sold in this state, shall not exceed, based on the applicable measurement techniques specified in Part 89, Subpart B of the 2000 Plus Limited Test Procedures and Part 1039, Subpart B of the 2008 and Later Test Procedures, the following:

1. 20 percent during the engine acceleration mode.
2. 15 percent during the engine lugging mode.
3. 50 percent during the peaks in either mode.

(B) The following engines are exempt from the requirements of this ~~section~~paragraph (3):

1. Single-cylinder engines.
2. Propulsion marine compression-ignition engines.
3. Constant-speed engines.
4. Engines certified to a PM emission standard or FEL of 0.07 grams per kilowatt-hour or lower

(4) Low-emitting Blue Sky Series engines requirements.

(A) *Voluntary standards.* Engines subject to the standards in (b)(1)(A) may be designated "Blue Sky Series" engines ~~through the 2004 model year~~ by meeting the voluntary standards contained in Table 3, which apply to all certification and in-use testing. Blue Sky Series engines shall not be included in the Averaging, Banking, and Trading program. Table 3 follows:

Table 3. – Voluntary Emission Standards  
(grams per kilowatt-hour)

Maximum Rated Power (kW)	NMHC+NO <sub>x</sub>	PM
KW<8	4.6	0.48
8≤kW<19	4.5	0.48
19≤kW<37	4.5	0.36
37≤kW<75	4.7	0.24
75≤kW<130	4.0	0.18
130≤kW≤560	4.0	0.12
KW>560	3.8	0.12

(B) *Additional standards.* Blue Sky Series engines are subject to all provisions that would otherwise apply under this part, except as specified in (C) of this section.

(C) *Test Procedures.* NO<sub>x</sub>, NMHC, and PM emissions are measured using the procedures set forth in 40 CFR part 86, subpart N (July 1, 1999), which is incorporated by reference, in lieu of the procedures set forth in subpart E of the 2000 and Later Plus Limited Test Procedures. CO emissions may be measured using procedures set forth in 40 CFR part 86, subpart N (July 1, 1999), or in subpart E of the 2000 and Later Test Procedures. Manufacturers may use an alternate procedure to demonstrate the desired level of control if approved in advance by the Executive Officer. Engines meeting the requirements to qualify as Blue Sky Series engines must be capable of maintaining a comparable level of emission control when tested using the procedures set forth in both Section 89.112(c) and subpart E of the 2000 and Later Test Procedures. The numerical emission levels measured using the procedures from subpart E of the 2000 and Later Plus Limited Test Procedures may be up to 20 percent higher than those measured using procedures from 40 CFR part 86, subpart N (July 1, 1999), and still be considered comparable.

(5)(A) No crankcase emissions shall be discharged into the ambient atmosphere from any new 1996-1999 model year heavy-duty off-road compression-ignition engine or any Tier 2 or later off-road compression-ignition engine subject to the 2000 Plus Limited Test Procedures. This provision does not apply to petroleum-fueled diesel cycle engines using turbochargers, pumps, blowers, or superchargers for air induction.

(B) For off-road compression-ignition engines subject to the 2008 and Later Test Procedures, no crankcase emissions shall be discharged directly into the ambient atmosphere from any engine, unless the sum of those discharged emissions are added to the exhaust emissions (either physically or mathematically) during all emission testing. To be eligible for this option, a manufacturer must design its engines so that all crankcase emissions can be routed into the applicable sampling systems specified in the 2008 and Later Test Procedures, and must account for deterioration in crankcase emissions when determining exhaust deterioration factors. Crankcase emissions that

are routed to the exhaust upstream of exhaust aftertreatment during all operation are not considered to be discharged directly into the ambient atmosphere. Furthermore, engines using charge-air compression that are certified to a transitional alternate FEL (Type ALT 20% in Table 2b) during the first four years of the Tier 4 standards for the applicable power category are exempt from this subsection, but must instead comply with the requirements in Section 2423(b)(5)(A).

(6) Engine manufacturers that voluntarily certify engines to the Tier 4 standards in Table 1b earlier than required under this article may, according to the provisions in the 2008 and Later Test Procedures, generate additional ABT credits, or as an alternative, offset future Tier 4 compliance requirements should the equipment manufacturer that was provided the engine decline to use its early introduction incentives according to the provisions in Section 2423(d)(9). Table 4, as follows, summarizes the incentives for the early introduction of Tier 4 engines and some of the conditions that determine eligibility.

Table 4. – Early Introduction Incentives for Engine Manufacturers

<u>EARLY INTRODUCTION</u>	<u>POWER CATEGORY</u>	<u>QUALIFYING STANDARDS <sup>1</sup></u> <u>grams per kilowatt-hour</u>	<u>PER-ENGINE INCENTIVE</u>
<u>Final Tier 4 PM-Only <sup>2</sup></u>	<u>19 ≤ kW &lt; 56</u>	<u>0.03 PM</u>	<u>3 for 2 PM-Only</u>
	<u>56 ≤ kW &lt; 560</u>	<u>0.02 PM</u>	
<u>Final Tier 4 ALL</u>	<u>19 ≤ kW &lt; 56</u>	<u>0.03 PM / 4.7 NMHC+NO<sub>x</sub></u>	<u>3 for 2</u>
	<u>56 ≤ kW ≤ 560</u>	<u>0.02 PM / 0.40 NO<sub>x</sub> / 0.19 NMHC</u>	
	<u>GEN &gt; 560</u>	<u>0.03 PM / 0.67 NO<sub>x</sub> / 0.19 NMHC</u>	
	<u>ELSE &gt; 560</u>	<u>0.04 PM / 3.5 NO<sub>x</sub> / 0.19 NMHC</u>	
<u>Ultra Low NO<sub>x</sub></u>	<u>kW ≥ 19</u>	<u>Final Tier 4 PM &amp; NMHC / 0.20 NO<sub>x</sub></u>	<u>2 for 1</u>

Notes:

1 All engines must meet the Tier 4 crankcase emissions requirements. Engines must certify using all test and other requirements otherwise required for final Tier 4 standards such as for transient and not-to-exceed limits.

2 Offsets must be earned prior to the start of phase-in requirements (prior to 2013 for 19 ≤ kW < 56 engines, prior to 2012 for 56 ≤ kW < 130 engines, prior to 2011 for 130 ≤ kW ≤ 560 engines, prior to 2015 for > 560 kW engines)

(7) Provisions for small-volume manufacturers. Small-volume engine manufacturers are entitled to special compliance provisions under this paragraph, but must notify the Executive Officer in writing before January 1, 2008, of the intent to use the provisions.

(A) Small-volume engine manufacturers may delay complying with certain otherwise applicable Tier 4 emission standards and requirements as described in the following table:

Table 5. – Small-Volume Engine Manufacturer Provisions

<u>Maximum Engine Power</u>	<u>Temporary Relief Replacement Standards</u>	<u>Delay End Date (Model Year)</u>
<u>kW &lt; 19</u>	<u>Tier 2</u>	<u>2011</u>
<u>19 ≤ kW &lt; 37</u>	<u>Interim Tier 4</u>	<u>2016</u>
<u>37 ≤ kW &lt; 56</u>	<u>See paragraph (7)(B) of this section for special provisions that apply for engines in this power range.</u>	
<u>56 ≤ kW &lt; 130</u>	<u>Tier 3</u>	<u>2015</u>

(B) The provisions of this paragraph (7) for engines 37 ≤ kW < 56 are applicable per one of the following options:

1. Manufacturers that comply with the 0.30 g/kW-hr PM standard in all model years from 2008 through 2012 without using PM credits may continue meeting that standard through 2015.

2. Manufacturers that choose not to comply with paragraph (7)(B)1. of this section may continue to comply with the standards and requirements in the 2000 Plus Limited Test Procedures for model years through 2012, but must begin complying in 2013 with the Tier 4 standards and requirements specified in Table 1b for model years 2013 and later.

(C) After the period of relief indicated in paragraphs (7)(A) and (B) of this section has expired, small-volume engine manufacturers must comply with the same Tier 4 standards and requirements as all other manufacturers.

(D) For engines not in the 19 ≤ kW < 56 power range, small-volume engine manufacturers must meet the following conditions for the model years in which compliance with the otherwise applicable standards under this paragraph (7) is delayed:

1. Produce engines that meet all the emission standards and other requirements under the 2000 Plus Limited Test Procedures applicable for that model year, except as noted in this paragraph (7).

2. Meet the labeling requirements in the 2000 Plus Limited Test Procedures, but must use the following in place of the otherwise required statement of compliance in Section 2424(c)(2): "THIS ENGINE COMPLIES WITH CALIFORNIA REGULATIONS FOR [CURRENT MODEL YEAR] OFF-ROAD COMPRESSION-IGNITION ENGINES UNDER 13 CCR 2423(b)(7)." The referencing of similar federal requirements under this provision is permitted.

3. Small-volume engine manufacturers must notify the equipment manufacturer that the engines produced under this section are excluded from the production volumes associated with the equipment manufacturer flexibility program in Section 2423(d).

(E) For engines in the  $19 \leq \text{kW} < 56$  power range, small-volume engine manufacturers must meet the following conditions for the model years in which compliance with the otherwise applicable standards under this paragraph (7) is delayed:

1. Produce engines in those model years that meet all the emission standards and other requirements that applied for model year 2008 engines in the same power category.

2. Meet the labeling requirements in Section 2424(c)(3), but use the following compliance statement instead of the compliance statement in Section 2423(c)(3): "THIS ENGINE COMPLIES WITH CALIFORNIA REGULATIONS FOR [CURRENT MODEL YEAR] OFF-ROAD COMPRESSION-IGNITION ENGINES UNDER 13 CCR 2423(b)(7)." The referencing of similar federal requirements under this provision is permitted.

3. Notify the equipment manufacturer that engines produced under this section are excluded from the production volumes associated with the equipment-manufacturer allowance program in Section 2423(d).

(F) The provisions of this paragraph (7) may not be used to circumvent the requirements of this article.

(8) Useful life. For purposes of certification, a manufacturer must demonstrate compliance with the standards set forth in this paragraph (b) over the full useful life of the engine, as defined in the applicable test procedures.

(9) NTE deficiencies. A manufacturer may petition the Executive Officer to accept an off-road compression-ignition engine as compliant with the NTE requirements specified in the 2008 and Later Test Procedures even though specific elements of those requirements may not be fully met. Such grants of compliance, otherwise known as deficiencies, shall be limited to engines that have functioning emission-control hardware capable of allowing the engine to comply with the NTE limits. Deficiencies shall be granted by the Executive Officer according to the following stipulations:

(A) A manufacturer must apply for specific deficiencies at the time of, or prior to, submitting its application for certification. Deficiencies shall be assigned for an engine model within an engine family. The Executive Officer shall not approve deficiencies that are requested retroactively to cover engines already certified. The scope of each deficiency must be clearly identified in the certification application, and any auxiliary emission control device(s) used to control emissions to the lowest practical level must be identified with respect to each deficiency that is being requested.



(B) Deficiencies shall only be approved if compliance would be infeasible or unreasonable considering factors such as the technical feasibility of the given hardware, the availability of lead time, production cycles including the phase-in or phase-out of engines or vehicle designs, and planned computers upgrades. Other relevant factors may be considered.

(C) Deficiencies shall expire after a single model year and may be limited to specific engine configurations. The Executive Officer may approve a manufacturer's request for the same deficiency in the following model year if correcting the deficiency would require extreme hardware or software modifications and the manufacturer has demonstrated an acceptable level of effort toward complying.

(D) The number of deficiencies available to a manufacturer shall not be limited during the first three model years in which NTE limits apply to the manufacturer's engines. For the next four model years, up to three deficiencies per engine family shall be available to a manufacturer. Deficiencies of the same type that apply similarly to different power ratings within a family shall count as one deficiency per family. The Executive Officer may conditionally approve additional deficiencies during these four years, but may impose stipulations on their applicability as appropriate. Deficiencies shall not be approved beyond the seven-year period specified in this paragraph (8).

(10) Adjustable parameters. Manufacturers that design engines with adjustable parameters must meet all the requirements of this paragraph (b) for any adjustment in the physically adjustable range. An operating parameter is not considered adjustable if it is permanently sealed or if it is not normally accessible using ordinary tools. The Executive Officer may require that the adjustable parameters be set to any specification within the adjustable range during any testing, including certification testing, selective enforcement auditing, or in-use testing.

(11) Prohibited controls. A manufacturer shall not design engines with emission control devices, systems, or elements of design that cause or contribute to an unreasonable risk to public health, welfare, or safety while operating.

(12) Defeat devices. Engines equipped with a defeat device shall not be certified for sale in California. A defeat device is a component or system that reduces the effectiveness of emission controls under conditions that the engine may reasonably be expected to encounter during normal operation and use. This prohibition does not apply to auxiliary-emission control devices identified in the certification application if one of more of the following is true:

(A) The operating conditions where the auxiliary-emission control device is active were substantially encountered during all testing requirements as described in Part 1039, Subpart F of the 2008 and Later Test Procedures.

(B) The design of the auxiliary-emission control device is shown to be necessary for preventing engine (or equipment) damage or accidents.

(C) The auxiliary-emission control device only reduces the effectiveness of emissions control during engine starting.

(c)(1) The test procedures for determining certification and compliance with the standards for gaseous exhaust emissions from new 1996-1999 heavy-duty off-road compression-ignition engines sold in the state are set forth in the 1996-1999 Heavy-Duty Test Procedures.

(2)(A) The test procedures for determining certification and compliance with the standards for gaseous exhaust emissions and the standards for opacity of smoke emissions from new 2000 model year and later off-road compression-ignition engines for which the standards in paragraph (b)(1)(A) are applicable, and sold in the state, are set forth in the 2000 ~~and Later~~Plus Limited Test Procedures.

(B) The test procedures for determining certification and compliance with the standards for gaseous exhaust emissions, particulate exhaust emissions, opacity of smoke emissions, and not-to-exceed emissions from new 2008 model year and later off-road compression-ignition engines for which the limits in paragraph (b)(1)(B) are applicable, and sold in the state, are set forth in the 2008 and Later Test Procedures.

(3) The test procedures for determining certification and compliance with the standards for particulate exhaust emissions from new 1996 and later off-road compression-ignition engines for which the standards in paragraph (b)(1)(A) are applicable, and sold in the state, are set forth in the PM and Test Cycle Limited Test Procedures.

(4) The test procedures for determining certification and compliance with the standards for the opacity of smoke emissions from new 1996-1999 off-road compression-ignition engines sold in the state are set forth in the 1996-1999 Smoke Test Procedures.

(d) *Implementation flexibility for equipment and vehicle manufacturers and post-manufacture marinizers.* For a limited time, Off-road equipment and vehicle manufacturers and post-manufacture marinizers may take any of the otherwise prohibited actions identified in the 2000 and Later Test Procedures (Section 89.1003(a)(1)) with respect to produce equipment with engines that are subject to less stringent emission standards than required by Tables 1a and 1b for new 2000 model year and later off-road equipment and vehicles and marine compression-ignition engines, subject to the requirements of paragraph (e) of this section. Separate provisions are provided for equipment with engines subject to the 2000 Plus Limited Test Procedures versus equipment with engines subject to the 2008 and Later Test Procedures, and are identified accordingly in the following subsections. Only manufacturers that have primary responsibility for designing and manufacturing equipment, and have manufacturing procedures for installing engines in equipment, are eligible to participate in the equipment manufacturer flexibility program provided by the

2008 and Later Test Procedures. Equipment manufacturers participating in this flexibility program must comply with the notification and reporting requirements specified in Section 2423(d)(7). Engines produced for this flexibility program using FELs greater than the applicable standards must be offset with sufficient ABT credits. The following allowances apply separately to each engine power category subject to standards under Section 2423(b)(1):

*(1) Percent-of-production allowances.*

(A) Equipment rated at or above 37kW and subject to the 2000 Plus Limited Test Procedures. For off-road equipment and vehicles with engines rated at or above 37kW, aA manufacturer may take any of the actions identified in the 2000 and Later Test Procedures (Section 89.1003(a)(1)) produce equipment and vehicles with engines rated at, or above, 37kW that are exempted from meeting current model year emission standards for a portion of its California-directed production volume of such equipment and vehicles during. These percent-of-production flexibility allowances must be used within the seven years immediately following the date on which Tier 2 engine standards first apply to engines used in such equipment and vehicles, provided that the seven-year sum of the U.S.-directed portions in each year of the manufacturer's percent-of-production flexibility allowances, as expressed as a percentage for each year, does not exceed 80 percent, expressed in cumulative yearly percentage increments, and provided that all such equipment and vehicles or equipment contain only Tier 1 engines that have been certified to the Tier 1 or Tier 2 standards;

(B) Equipment rated under 37kW and subject to the 2000 Plus Limited Test Procedures. For off-road equipment and vehicles and marine diesel engines with engines rated under 37kW, aA manufacturer or post-manufacture marinizer may take any of the actions identified in the 2000 and Later Test Procedures (Section 89.1003(a)(1)) produce equipment and vehicles and marine engines with engines rated under 37kW that are exempt from meeting current model year emission standards for a portion of its California-directed production volume of such equipment and vehicles during. These percent-of-production flexibility allowances must be used within the seven years immediately following the date on which Tier 1 engine standards first apply to engines used in such equipment and vehicles and marine engines, provided that the seven-year sum of the U.S.-directed portions in each year of the manufacturer's percent-of-production flexibility allowances, as expressed as a percentage for each year, does not exceed 80 percent, expressed in cumulative yearly percentage increments.;

(C) Equipment subject to the 2008 and Later Test procedures. A manufacturer may produce equipment and vehicles with engines that are exempt from meeting current model year emission standards for a portion of its California-directed production volume. These percent-of-production flexibility allowances must be used within one of the seven-year flexibility usage periods specified in Table 6 for each applicable power category, provided that the seven-year sum of the U.S.-directed portion of the manufacturer's percent-of-production flexibility allowances does not exceed 80 percent,

expressed in cumulative yearly percentage increments, except as provided for in paragraph (d)(6) or (f). Equipment used as percent-of-production flexibility allowances must contain only engines that have been certified to, at least, the standards listed in Table 6, corresponding to the flexibility usage period selected by the manufacturer. All flexibility allowances for a power category must be used within the same flexibility usage period.

Table 6. – Tier 4 Flexibility Allowance Options

<u>Power Category</u>	<u>7 Year Usage Period</u>	<u>Flexibility Standard</u>
<u>&lt; 19 kW</u>	<u>2008 – 2014</u>	<u>Tier 2</u>
<u>19 ≤ kW &lt; 56</u>	<u>2008 – 2014<sup>1</sup></u>	<u>Tier 3<sup>2</sup></u>
	<u>2012 - 2018</u>	<u>2008 Interim Tier 4</u>
<u>56 ≤ kW &lt; 130</u>	<u>2012 - 2018</u>	<u>Tier 3</u>
	<u>2014 - 2020</u>	<u>2012 Interim Tier 4</u>
<u>130 ≤ kW ≤ 560</u>	<u>2011 - 2017</u>	<u>Tier 3</u>
	<u>2014 - 2020</u>	<u>2011 Interim Tier 4</u>
<u>&gt; 560 kW</u>	<u>2011 - 2017</u>	<u>Tier 2</u>
	<u>2015 - 2021</u>	<u>2011 Interim Tier 4</u>

Notes:

1 This usage period is not available for allowances greater than or equal to 37 kW unless interim Tier 4 standards have been met starting in 2008.

2 Flexibility allowances under 37kW may contain engines certified to the Tier 2 standards.

(2)(A) Small volume allowances subject to the 2000 Plus Limited Test Procedures. An off-road equipment or vehicle manufacturer or post-manufacturer may exceed the production percentages in paragraphs (d)(1) (A) and (B) of this section for a portion of its California-directed production, provided that in each regulated power category the manufacturer's total number of U.S.-directed-~~excepted~~ off-road equipment and vehicles and marine diesel ~~engines~~applications that contain engines which are exempt from meeting current model year emission standards over the years in which the percent-of-production allowance applies:

(A)1. does not exceed 100 units times the number of years in which the percent-of-production allowance applies, and

(B)2. does not exceed 200 units in any year, and

(C)3. does not use engines from more than one engine family,~~or, for excepted equipment, vehicles, and marine diesel engines using engines not belonging to any engine family, from more than one engine manufacturer.~~

(B) Small volume allowances subject to the 2008 and Later Test Procedures. As an alternative to the percent-of-production allowance in Section 2423(d)(1)(C), an off-road equipment or vehicle manufacturer may produce equipment with engines that are exempt from meeting current model year emission standards for a portion of its California-directed production volume, provided that the exempt equipment is a subset of the manufacturer's U.S.-directed volume of exempt equipment and the manufacturer is in compliance with the following provisions:

1. Single engine family provision. A manufacturer may claim up to 700 U.S.-directed flexibility allowances within a power category during one of the seven-year flexibility usage periods specified in Table 6, but no more than 200 allowances in a single year within a power category, except as provided for in paragraph(d)(6) or (f). Engines within a power category that are used in these flexibility allowances must be from a single engine family within a given year.

2.a. Multiple engine family provision for flexibility allowances below 130 kW. A manufacturer may claim up to 525 U.S.-directed flexibility allowances within a power category during one of the seven-year flexibility usage periods specified in Table 6, but no more than 150 allowances in a single year within a power category, except as provided for in paragraph (d)(6) or (f). Engines within a power category that are used in these flexibility allowances may be from multiple engine families within a given year.

b. Multiple engine family provision for flexibility allowances at or above 130 kW. A manufacturer may produce up to 350 U.S.-directed flexibility allowances within a power category during one of the seven-year flexibility usage periods specified in Table 6, but no more than 100 allowances in a single year within a power category, except as provided for in paragraph (d)(6) of (f). Engines within a power category that are used in these flexibility allowances may be from multiple engine families within a given year.

(3)(A) Inclusion of previous-tier engines. Off-road equipment and vehicles and marine diesel engines built with previous tier or noncertified engines under the existing inventory provisions of the 2000 ~~and Later~~ Plus Limited Test Procedures (40 CFR Section 89.1003(b)(4)) need not be included in determining compliance with paragraphs (d)(1)(A) and (B) and (d)(2)(A) of this section.

(B) Inclusion of engines not subject to Tier 4 requirements. Off-road equipment and vehicles built with engines otherwise exempt from the requirements of the 2008 and Later Test Procedures are not required to be counted toward the percentage, or number, of claimed flexibility allowances under the provisions in Subsections (d)(1)(C) and (d)(2)(B). Such exempted engines include unused inventories produced prior to the effective date of the Tier 4 standards, excluding stockpiled engines, and hand-startable, air cooled, direct-injection engines below 8 kW in 2008 and 2009 that do not meet the Tier 4 PM standard. Nonetheless, manufacturers may choose to include these engines in the count of total equipment produced from which the percentage of flexibility allowances in Subsection (d)(1)(C) is derived.

(4) Early-use of flexibility allowances. Manufacturers may start using a portion of the flexibility allowances in Subsections (d)(1)(C) and (d)(2)(B) for equipment and vehicles containing engines not yet subject to the Tier 4 standards, provided that the seven-year period for using flexibility allowances under the 2000 Plus Limited Test Procedures flexibility program has expired. All equipment and vehicles claimed as flexibility allowances under this early-use provision must contain engines that have been certified to, at least, the Tier 1 standards. Manufacturers must count these Tier 2 or Tier 3 equipment and vehicles toward the total percentage, or number, of flexibility allowances permitted under the provisions of Sections (d)(1)(C) and (d)(2)(B). The maximum cumulative early-use allowance is 10 percent under the percent-of-production provision in Section (d)(1)(C), or 100 units under the small volume provision in Section (d)(2)(B). Table 7 shows the applicable years for using early-use flexibility allowances. Table 7 follows:

Table 7. – Years for Early-Use Flexibility Allowances

<u>Maximum Engine Power</u>	<u>Calendar Years</u>
<u>kW &lt; 19</u>	<u>2007</u>
<u>19 ≤ kW &lt; 37</u>	<u>2006 - 2011</u>
<u>37 ≤ kW &lt; 56</u>	<u>2011</u>
<u>56 ≤ kW &lt; 75</u>	<u>2011</u>
<u>75 ≤ kW &lt; 130</u>	<u>2010 - 2011</u>
<u>130 ≤ kW &lt; 225</u>	<u>2010</u>
<u>225 ≤ kW &lt; 450</u>	<u>2008 - 2010</u>
<u>450 ≤ kW ≤ 560</u>	<u>2009 - 2010</u>
<u>&gt; 560 kW</u>	<u>=</u>

(5) Labeling requirements. Allowances claimed under the Tier 2/3 or Tier 4 equipment flexibility programs must be labeled, as appropriate, per the following:

(A) Engine labeling. Except for engines used in flexibility allowances prior to January 1, 2007, engine manufacturers shall meet the labeling requirements provided in Section 2424 with the following substitutions:

For flexibility engines meeting previous year emission requirements, the engine manufacturer shall substitute the following for the statement of compliance required in Sections 2424(c)(1)(E)6 and 2424(c)(2):

"THIS ENGINE COMPLIES WITH CALIFORNIA EMISSION REQUIREMENTS UNDER 13 CCR 2423(d). SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN FOR THE EQUIPMENT FLEXIBILITY PROVISIONS CITED MAY BE A VIOLATION OF STATE LAW SUBJECT TO CIVIL PENALTY."  
[Insert Engine Family Name]

For flexibility engines less than 37 kW and not subject to emission requirements under the Tier 2/3 program, the engine manufacturer shall substitute the following for the statement of compliance required in Section 2424(c)(1)(E)6:

"THIS ENGINE QUALIFIES FOR USE IN EQUIPMENT RATED BELOW 37 KW BY PROVISION OF 13 CCR 2423(d). SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN FOR THE EQUIPMENT FLEXIBILITY PROVISIONS CITED MAY BE A VIOLATION OF CALIFORNIA LAW SUBJECT TO CIVIL PENALTY."

As an alternative for flexibility engines produced under the Tier 2/3 program, and for which the engine manufacturer offers proof to the Executive Officer that the otherwise required statements of compliance in this subsection would be unduly burdensome or costly to implement, engine manufacturers may instead use the following:

"THIS ENGINE CONFORMS TO CALIFORNIA OFF-ROAD COMPRESSION-IGNITION ENGINE REGULATIONS UNDER 13 CCR 2423(d)." [Insert Engine Family Name if Certified]

These revised statements of compliance do not preclude the referencing of similar federal requirements that would be satisfied simultaneously by meeting the provisions of Section 2423(d). Furthermore, the Executive Officer may, upon request, approve alternate labeling specifications that are equivalent to the specifications in this subsection.

(B) *Equipment Labeling.* For all allowances claimed under the Tier 4 flexibility program, equipment manufacturers shall affix a permanent label to the engine, or to a readily visible section of the equipment that cannot be easily removed. The label shall be in the English language, shall supplement the manufacturer's emission control information label, and shall include the following information:

1. The label heading "EMISSION CONTROL INFORMATION".
2. The equipment manufacturer's corporate name and trademark.
3. The calendar year in which the equipment is manufactured.
4. The name, e-mail address, and phone number of a person to contact for further information.
5. The following statement:  
"THIS EQUIPMENT [or identify the type of equipment] HAS AN ENGINE THAT MEETS CALIFORNIA EMISSION STANDARDS UNDER 13 CCR 2423(d)."

This label content does not preclude the referencing of similar federal requirements that would be satisfied simultaneously by meeting the provisions of Section 2423(d).

(6) *Technical hardship allowances.* Equipment manufacturers may apply for additional flexibility allowances should extreme and unusual circumstances occur

leading to technical obstacles in complying with the Tier 4 requirements. A manufacturer may request additional allowances for power categories  $19 \leq \text{kW} \leq 560$  if it claims allowances under the provisions of Section 2423(d)(1)(C), but may only request additional allowances for power categories  $19 \leq \text{kW} < 56$  if it claims allowances under the provisions of Section 2423(d)(2)(B). Additional flexibility allowances shall not be provided when the engine and equipment are produced by the same manufacturer, or affiliate. The Executive Officer shall review requests for additional flexibility allowances according to the following stipulations:

(A) The manufacturer requesting additional allowances must demonstrate that the circumstances necessitating them were outside the control of the manufacturer and could not have been avoided with reasonable discretion. The manufacturer must also demonstrate that it has exercised prudent planning and has taken reasonable steps to minimize the scope of the request.

(B) Manufacturers applying for additional flexibility allowances must do so in writing to the Chief of the Mobile Source Operations Division, or designee, prior to the earliest date in which the applying manufacturer would be in violation of Section 2423(b)(1). All applications shall provide, at a minimum, the following information:

1. A description of the manufacturer's equipment design process.
2. A description of the relationship with the engine supplier regarding product design.
3. An explanation of the technical hardship leading to this request, why it cannot be addressed without additional flexibility allowances, and an explanation of the circumstances behind the technical hardship and why it was unavoidable.
4. A description of the information and products provided by the engine supplier related to equipment design, including specifications, performance data, prototypes, and the dates of delivery.
5. A comparison of the design processes of the equipment model(s) for which additional allowances are needed versus those of other models that do not need additional allowances, and an explanation of how the technical differences between the models justify the request for additional allowances.
6. A description of all efforts to find and use other compliant engines, or otherwise an explanation why none are available.
7. A description of the steps taken to minimize the scope of the manufacturer's request, and any other relevant information.



8. An estimation of the number of additional allowances needed for each equipment model covered by the request, subject to Sections 2423(d)(6)(C) and (d)(6)(D) below.

Notwithstanding, the Executive Officer may require additional information as deemed necessary before making a determination for relief.

(C) The following limits shall apply for additional flexibility allowances granted in connection to the percent-of-production provisions in Section 2423(d)(1)(C):

1. A manufacturer's California-directed share of additional flexibility allowances for each power category shall be a subset of its U.S.-directed allowances for the same power category, provided that the additional U.S.-directed allowances do not exceed 70 percent of the U.S.-directed volume of production for the power category for one year.

2. All primary percent-of-production allowances must be completely used up prior to the use of any additional flexibility allowances.

3. All additional allowances shall expire 24 months after the start of the applicable flexibility usage period for each power category, as specified in Table 6. These allowances shall only be used for the specific equipment models covered in the manufacturer's written application for relief.

(D) The following limits shall apply for additional flexibility allowances granted in connection to the small volume provisions in Section 2423(d)(2)(B):

1. Only small equipment manufacturers, as defined below, that have not been granted additional flexibility allowances for the  $19 \leq \text{kW} < 56$  power category under Section 2423(d)(6)(C), are eligible to request additional flexibility allowance under this provision.

"Small equipment manufacturer," for the purpose of this provision, means a federally defined small-business equipment manufacturer that had an annual U.S.-directed production volume of equipment using off-road diesel engines  $19 \leq \text{kW} < 56$  of no more than 3,000 units in 2002 and all earlier calendar years, and has 750 or fewer employees (500 or fewer employees for nonroad equipment manufacturers that produce no construction equipment or industrial trucks). For manufacturers owned by a parent company, the production limit applies to the production of the parent company and all its subsidiaries and the employee limit applies to the total number of employees of the parent company and all its subsidiaries.

2. All primary small volume allowances for the  $19 \leq \text{kW} < 56$  power category must be completely used up for a given year prior to the use of additional flexibility allowances.

3. Additional allowances shall only be used for equipment with engines rated  $19 \leq \text{kW} < 37$ .

4. A manufacturer's California-directed share of additional flexibility allowances under this provision shall be a subset of its U.S.-directed allowances, which shall not exceed 1,100.

5. All additional allowances shall expire 36 months after the start of the applicable flexibility usage period for each power category, as specified in Table 6. The allowances shall only be used for the specific equipment models covered in the manufacturer's written application for relief. The additional allowances are not subject to small volume annual limits.

(7) Notification and reporting requirements for using Tier 4 flexibility allowances. As a prerequisite to using any Tier 4 flexibility allowances, the equipment manufacturer shall notify the ARB of its intent to use such allowances. The manufacturer shall also send an annual report after each year that flexibility allowances have been used to verify that the allowances claimed do not exceed the number of allowances permitted.

(A) Before January 1 of the first year that flexibility provisions will be used, a written notice informing ARB of the manufacturer's intent to use flexibility allowances must be sent to the Chief of the Mobile Source Operations Division, or designee, containing the following information:

1. The equipment manufacturer's name and address, and the name and address of the parent company, if applicable.

2. The name and telephone number of a person to contact for more information.

3. The calendar years for which the Tier 4 flexibility provisions shall apply.

4. The engine manufacturer's name and address that produces the engines which will be used in the equipment claimed as flexibility allowances.

5. An accurate estimate of the number of flexibility allowances in each power category that will be produced under the percent-of-production provisions in Section 2423(d)(1)(C), or the small volume provisions in Section 2423(d)(2)(B).

6. A tabulation of U.S.-directed flexibility allowances in each power category that have been sold in previous calendar years under the provisions of Section 2423(d) and 40 CFR 89.102(d).

(B) For each year that Tier 4 flexibility allowances are used, the equipment manufacturer shall submit, by March 31 of the following year, a written report to the Chief of the Mobile Source Operations Division, or designee, documenting the utilization

of those allowances. This report shall include the total number of equipment sold by the manufacturer during the preceding year for each power category, based on actual U.S.-directed production information, and shall identify the flexibility allowances in each power category by reporting the percentages of U.S.-directed flexibility production corresponding to the number of equipment in each power category. The report shall also identify the cumulative yearly totals and percentages for all flexibility allowances sold for each power category. Alternatively, the percentage figures may be omitted from the report if the report states that percent-of-production allowances were not used. If available, end of year percentage figures for California-directed sales shall also be included in this report.

(8) *Import restrictions on the use of Tier 4 flexibility allowances.* Foreign equipment manufacturers may only import equipment with exempted flexibility engines into California according to the stipulations in Section 1039.626 of the 2008 and Later Test Procedures. These stipulations address the potential for abuse whereby individual importers could collectively import more flexibility allowances than permitted based on the foreign equipment manufacturer's total production for the United States market. The stipulations include acceptance by the foreign equipment manufacturer of random audits by the ARB or its representatives, and the posting of a monetary bond for each imported engine to cover the cost of any potential enforcement actions. Foreign equipment manufacturers who comply with the stipulations will be eligible to receive the same flexibility allowances as domestic manufacturers.

(9) *Early introduction incentives for equipment manufacturers.* In addition to the equipment flexibility allowances provided in Subsections (d)(1)(C) and (d)(2)(B), equipment manufacturers, as provided in the 2008 and Later Test Procedures, may earn additional allowances for the early introduction of equipment with engines meeting the Tier 4 standards in Table 1b. Equipment manufacturers installing engines at or above 19 kW that comply with the final Tier 4 PM and NOx standards could earn one flexibility allowance for each early Tier 4 compliant engine used in its equipment. Equipment manufacturers installing engines  $56 \leq \text{kW} \leq 560$  that comply with the final Tier 4 PM standard and the alternative NOx standard could earn one-half of a flexibility allowance for each early Tier 4 engine used in its equipment. Table 8, below, summarizes the incentives for the early introduction of Tier 4 compliant equipment and some of the conditions that determine eligibility. Should an equipment manufacturer decline flexibility allowances earned with this provision, the allowances would then be available to the engine manufacturer that had supplied the early introduction engine, subject to the provisions in Section 2423(b)(6).

Table 8. – Early Introduction Incentives for Equipment Manufacturers

<u>POWER CATEGORY</u>	<u>QUALIFYING STANDARDS (g/kW-hr)</u>	<u>INSTALLATION DEADLINE</u>	<u>FLEXIBILITY ALLOWANCE</u>
<u>19 ≤ kW &lt; 56</u>	<u>0.03 PM / 4.7 NMHC+NOx</u>	<u>December 31, 2012<sup>1</sup></u>	<u>1 for 1</u>
<u>56 ≤ kW ≤ 130</u>	<u>0.02 PM / 0.40 NOx / 0.19 NMHC</u>	<u>December 31, 2011</u>	<u>1 for 1</u>
	<u>0.02 PM / 3.4 NOx / 0.19 NMHC<sup>2</sup></u>		<u>1 for 2</u>
<u>130 ≤ kW ≤ 560</u>	<u>0.02 PM / 0.40 NOx / 0.19 NMHC</u>	<u>December 31, 2010</u>	<u>1 for 1</u>
	<u>0.02 PM / 2.0 NOx / 0.19 NMHC<sup>2</sup></u>		<u>1 for 2</u>
<u>GEN &gt; 560</u>	<u>0.03 PM / 0.67 NOx / 0.19 NMHC</u>	<u>December 31, 2014</u>	<u>1 for 1</u>
<u>ELSE &gt; 560</u>	<u>0.04 PM / 3.5 NOx / 0.19 NMHC</u>		

Notes:

1 The installation date for 37 ≤ kW ≤ 56 engines purchased from manufacturers choosing to opt out of the 2008 model year Tier 4 standards and instead comply with the Tier 4 standards beginning in 2012 would be December 31, 2011.

2 To be eligible, engines must meet the 0.02 g/kW-hr PM standard and the alternative NOx standards.

(e) *Recordkeeping and calculation to verify compliance.* The following shall apply to off-road equipment or vehicle manufacturers and post-manufacture marinizers who produce excepted flexibility equipment or vehicles or marine diesel engines under both the Tier 2/3 and Tier 4 flexibility provisions of paragraph (d) of this section, except as otherwise noted:

(1) For each power category in which excepted off-road equipment or vehicles or marine diesel engines are produced, a calculation to verify compliance with the requirements of paragraph (d) of this section shall be made by the off-road equipment or vehicle manufacturer or post-manufacture~~r~~ marinizer. This calculation shall be made for flexibility allowances under the Tier 2/3 program no later than December 31 of the year following the last year in which allowances are used, and as indicated in Subsection (d)(7)(B) for flexibility allowances under the Tier 4 program. The calculation shall be based on actual national production information from the subject years. If both the percent-of-production and small volume allowances have been exceeded, then the manufacturer is in violation of Section 2420(a)(3), except as provided under Subsection (d)(6) and paragraphs (f) and (h) of this section.

(2) An off-road equipment or vehicle manufacturer or post-manufacture~~r~~ marinizer shall keep records of all off-road equipment and vehicles and marine diesel engines sold in California and excepted under the provisions of paragraph (d) of this section, for each power category in which exceptions are taken flexibility allowances are claimed. These records shall include equipment and engine model numbers, serial numbers, and dates of manufacture, and engine rated power for Tier 2/3 flexibility engines, and maximum engine power for Tier 4 flexibility engines. In addition, the manufacturer shall keep records sufficient to demonstrate the verifications of

compliance required in paragraph (e)(1) of this section and the notifications and reports specified in Section 2423(d)(7), as applicable. All records shall be kept until at least two full years for flexibility allowances under the Tier 2/3 program and five full years for flexibility allowances under the Tier 4 program after the final year in which allowances are available for each power category, and shall be made available to the Executive Officer upon request.

(f) Economic Hardship relief. Off-road equipment and vehicle manufacturers and post-manufacture marinizers may ~~take any of the otherwise prohibited actions identified in Section 89.1003(b)(4) of the 2000 and Later Test Procedures, if approved by the request relief from the~~ Executive Officer, or designee, ~~and~~ subject to the following requirements:

(1) The application for relief must be submitted for approval to the Chief of the Mobile Source Operations Division, or designee, in writing prior to the earliest date in which the applying manufacturer would be in violation of Section 2423(b)(1). The off-road equipment or vehicle manufacturer applying for hardship relief must submit evidence for approval, showing that the following requirements have been met:

- (A) The off-road equipment or vehicle manufacturer applying for hardship relief must not be the manufacturer of the engines used in the equipment for which relief is sought. This requirement does not apply to post-manufacture marinizers.
- (B) The conditions causing the impending violation must not be substantially the fault of the applying manufacturer.
- (C) The conditions causing the impending violation must be such that the off-road equipment or vehicle manufacturer applying for hardship relief will experience serious economic hardship if relief is not granted.
- (D) The off-road equipment or vehicle manufacturer applying for hardship relief must demonstrate that no allowances under paragraph (d) of this section will be available to avoid the impending violation.

(2) Any relief granted must begin within one year after the implementation date of the standard applying to the engines being used in the equipment, or to the marine diesel engines, for which relief is requested, and may not exceed ~~one year~~ 12 months (24 months for small volume manufacturers) in duration.

(3) The Executive Officer may impose other conditions on the granting of relief, including provisions to recover the lost environmental benefit. The labeling requirements in the 2008 and Later Test Procedures apply.

(g) Alternative Flexibility for Post-Manufacture Marinizers. Post-manufacture marinizers may elect to delay the effective date of the Tier 1 standards for marine

propulsion diesel engines rated under 37kW by one year, instead of using the provisions of paragraphs (d) and (f) of this section. Post-manufacture marinizers wishing to take advantage of this provision must inform the Executive Officer of their intent to do so in writing before the date that the standards would otherwise take effect.

(h) *Allowance for the production of engines.* ~~Engine manufacturers may take any of the otherwise prohibited actions identified in the 2000 and Later Test Procedures (Section 89.1003(a)(1)) with regard to uncertified engines or Tier 1 engines, as appropriate, if the engine is required to~~ meet the demand for engines created under paragraph (d), (f), or (g) of this section. engine manufacturers may produce engines that do not meet current year emission requirements. However, engine manufacturers must receive written assurance from each equipment manufacturer, prior to production, that a certain number of these engines are needed for the equipment manufacturer's Tier 4 equipment flexibility allowances. Engine Manufacturers shall provide to the Executive Officer annually, as part of the certification application, a list of the equipment manufacturers requesting such engines for their Tier 2/3 and Tier 4 equipment flexibility allowances. The list shall include the equipment manufacturers' names, engine models, and estimated national production volumes. A copy of the original correspondence from the equipment manufacturer requesting the production of flexibility engines shall be kept on file by the engine manufacturer in addition to, and in accordance with, the provisions of § 1039.250 of the 2008 and Later Test Procedures, and shall be made available without delay to the Executive Officer upon request. Furthermore, all engines produced for sale in California under either of the transitional flexibility provisions for equipment manufacturers, must be covered by an Executive Order starting January 1, 2007. To obtain an Executive Order for these engines, the engine manufacturer shall comply with the following:

- (1) Prior to the start of production, submit a letter to the Chief of the Mobile Source Operations Division, or designee, requesting certification for flexibility engines intended for sale in California, and
- (2) Provide written assurance that the flexibility engines to be produced will be identical in all material respects to those for which a valid Executive Order has been issued in a previous model year. The engine family name of the previously certified engine family must be included in the manufacturer's request for certification.

Upon determination that the conditions in paragraphs (1) and (2) have been satisfied, the Executive Officer shall provide the engine manufacturer with an Executive Order covering the requested flexibility engine families for the current model year. The engine family names included in the Executive Order shall either be the same as, or a subset of the previously certified engine family names, and shall remain the same for as long as the engines continue to qualify as flexibility allowances regardless of model year. These engine family names shall be used by the engine manufacturer to comply with the labeling requirements of 2423(d)(5)(A).

(i) [Reserved]

(j)(1) A new compression-ignition off-road engine intended solely to replace an engine in a piece of off-road equipment that was originally produced with an engine manufactured prior to the applicable implementation date as specified in Section 2423, shall not be subject to the emission requirements of Section 2423 provided that:

(A) the engine manufacturer has ascertained that no engine produced by itself or the manufacturer of the engine that is being replaced, if different, and certified to the requirements of this article, is available with the appropriate physical or performance characteristics to repower the equipment; and

(B) unless an alternative control mechanism is approved in advanced by the Executive Officer, the engine manufacturer or its agent takes ownership and possession of the engine being replaced; and

(C) the engine manufacturer does not use the replacement-engine exemption to circumvent the regulations; and

(CD) the replacement engine is clearly labeled with the following language, or similar alternate language approved in advance by the Executive Officer:

**"THIS ENGINE DOES NOT COMPLY WITH CALIFORNIA AND FEDERAL OFF-ROAD OR ON-HIGHWAY EMISSION REQUIREMENTS. SALE OR INSTALLATION OF THIS ENGINE FOR ANY PURPOSE OTHER THAN AS A REPLACEMENT ENGINE FOR AN ENGINE MANUFACTURED PRIOR TO JANUARY 1 [INSERT APPROPRIATE YEAR] IS A VIOLATION OF CALIFORNIA AND FEDERAL LAW SUBJECT TO CIVIL PENALTY."**

2) At the conclusion of each of the 2000-2004 and later model years, the manufacturer must provide, by engine model, the actual number of replacement engines produced for California during the model year, and a description of the physical or performance characteristics of those models that indicate certified replacement engine(s) were not available as per paragraph (1).

(k) Any new engine certified to comply with California emission standards and test procedures for on-road applications may, upon approval by the Executive Officer, be considered to be in compliance with these regulations.

(l) Practices and labeling requirements for rebuilt engines. This subsection shall apply as provided in paragraph (1) below to all off-road compression-ignition engines subject to the requirements of Section 2423 that are rebuilt after December 31, 2006, including those engines that were originally manufactured on, or prior to, December 31, 2006.

(1) Practices. The rebuilding practices described in Part 89.130 of the incorporated 2000 Plus Limited Test Procedures, including the exemption for engines equal to or greater than 37 kW that meet the Tier 1 standard, and Part 1068.120 of the 2008 and Later Test Procedures shall apply. These practices are summarized in paragraphs (1)(A) and (1)(B) below, which are provided as respective references for the labeling requirements in paragraphs (2)(A) and (2)(B) of this subsection.

(A) Any person who rebuilds an engine that either remains installed in a piece of equipment during the rebuilding process or will be reinstalled after the rebuilding process has been completed shall rebuild the engine to the same certified configuration or the certified configuration of a later model year engine. For the purposes of this section, these engines shall be referred to as "rebuilt original engines."

(B) Any person who replaces the engine in a piece of equipment with a rebuilt engine (this includes engines that have been substantially assembled from parts originally belonging to one or more other engines) shall use a replacement engine with a certified configuration that is at least equivalent, from an emissions standpoint, to that of the engine being replaced. For the purposes of this section, these engines shall be referred to as "rebuilt replacement engines."

(2) Labeling Requirements.

(A) Rebuilt Original Engines. Any person who rebuilds engines for which the practices in paragraph (1)(A) of this subsection apply shall ensure that the rebuilt engines are labeled as follows:

1. An original engine that is rebuilt to the same emissions configuration employed by the engine at the time it was issued an Executive Order shall retain the emissions control label described in Section 2424. The rebuilder shall not remove or deface in any manner the original label and must take care to protect it from the effects of sandblasting, acid dipping, or any other restorative processes. Notwithstanding the preceding requirements and prohibitions of this paragraph (2)(A)1., the rebuilder shall substitute a new permanent label containing the text in paragraph (2)(A)2. below for the original emission control label if the rebuilder determines that the label has been irreparably corrupted due to extreme and unintentional circumstances (e.g., fire or collision). The rebuilder shall provide to the Executive Officer annually a list of all rebuilt engines for which original labels have been removed under this provision no later than two months after the end of each calendar year. The rebuilder shall retain all removed labels, or otherwise document the degree to which the labels were damaged or missing (e.g., photographic proof of the corruption), for a period of no less than eight years following the date of renovation, and shall make these available to the Executive Officer upon request. The rebuilder shall be subject to civil penalty under State law should the Executive Officer determine that the original emission control label did not warrant replacement or that the rebuilder is abusing this provision;



2. An original engine that is rebuilt to a more stringent emissions configuration shall be permanently re-labeled using the following text:

"THIS ENGINE HAS BEEN REBUILT UNDER 13 CCR 2423(I) USING MATCHED COMPONENTS OF THE SAME SPECIFICATIONS AND CALIBRATIONS AS THOSE OF A CERTIFIED TIER [insert the numerical tier designation of the rebuilt engine] OFF-ROAD COMPRESSION-IGNITION ENGINE. IF PLACED INTO SERVICE IN AN OFF-ROAD APPLICATION, THIS ENGINE MUST BE INSTALLED IN EQUIPMENT ORIGINALLY SOLD WITH A TIER [insert the numerical tier designation of the rebuilt engine] OR EARLIER ENGINE. [insert the engine family name of the reference engine]."

For the purpose of this label, "MATCHED" means a complete set of components corresponding to the certified emissions configuration being referenced (see the definition of "certified emissions configuration" in Section 2421(a)(13)). The reference engine is the engine family name corresponding to the certified emissions configuration to which the engine has been rebuilt. The label shall conform to the provisions of Section 2424 regarding location and visibility.

(B) Rebuilt Replacement Engines. Any person who rebuilds engines for which the practices in paragraph (1)(B) of this subsection apply shall ensure that the rebuilt engines are labeled as follows:

1. A replacement engine that is rebuilt to the same California emissions configuration employed by the engine at the time it was issued an Executive Order shall either retain the emission control label described in Section 2424 or be permanently re-labeled using the text in paragraph (2)(A)2 of this subsection. A replacement engine that is rebuilt to the same emissions configuration employed by the engine at the time it was issued a federal Certificate of Conformity, and for which no Executive Order exists, shall be permanently re-labeled using the text in paragraph (2)(A)2 of this subsection, prior to being installed in equipment that was originally sold with a California certified engine;

2. A replacement engine that is rebuilt to a more stringent emissions configuration shall be permanently re-labeled using the text in paragraph (2)(A)2. above;

3. An incomplete rebuilt replacement engine shall be permanently re-labeled using the text specified below. For the purposes of this subsection, "incomplete rebuilt replacement engine" means a rebuilt replacement engine that is sold or offered for sale in California without all the necessary components to enable engine operation including, but not necessarily limited to, the fuel system and the air system:

"THIS ENGINE HAS BEEN REBUILT UNDER 13 CCR 2423(I) AS AN INCOMPLETE ENGINE USING ONLY MATCHED COMPONENTS OF THE SAME SPECIFICATIONS AND CALIBRATIONS AS THOSE FOUND IN

OFF-ROAD COMPRESSION-IGNITION ENGINES CERTIFIED TO THE [insert the numerical tier or multiple tiers designation of the rebuilt engine]."

Any person who completes an incomplete rebuilt replacement engine with components that are not matched components, and the resulting engine is placed into service in California, is in violation of the rebuilding practices referenced under paragraph (1) of this subsection and subject to civil penalty under State law.

(C) Supplemental Labeling Requirements. Except as noted below, any person who sells or offers for sale any rebuilt engine subject to the provisions of subsection (I) shall affix a supplemental label to the rebuilt engine that:

1. states the name of the rebuilder, year of rebuild, and other pertinent information as determined by the rebuilder or specified by the Executive Officer; and
2. is clearly visible without the need to remove any engine components; and
3. does not obscure in any way the visibility of the original emission control label or the labels required under paragraphs (2)(A)2. or (2)(B)3. of this subsection; and
4. does not state or imply that the rebuilt engine is "new" or that it belongs to an engine family other than the one to which it was originally certified; and
5. has sufficient durability to remain intact and legible throughout all mandatory record keeping periods for rebuilt engines.

The requirement for a supplemental label shall be waived in cases where the rebuilder alternately chooses to incorporate the information in (C)1. above into the new permanent label specified in subsection (2)(A)2. or (2)(B)3.

(D) Rebuilt New Engines. Notwithstanding any other requirement of this subsection (I), any person who rebuilds an engine to comply with current-year emission requirements (including, but not limited to, durability and warranty), with the intent to sell or offer for sale the rebuilt engine as "new" under the coverage of a new and unique Executive Order, shall replace the original emission control label on that engine with one identifying the engine as belonging to a family meeting current-year emission requirements in accordance with the provisions of Section 2424. If desired, the rebuilder of a such an engine may optionally affix to it a supplemental label, but such a label would be required to comply with the same requirements specified in paragraph (C) of this subsection for any other rebuilt engine.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43104 and 43211-43212, Health and Safety Code.

**§ 2423. Exhaust Emission Standards and Test Procedures – Off-Road Compression-Ignition Engines.**

(a) This section shall be applicable to new heavy-duty off-road compression-ignition engines, produced on or after January 1, 1996, and all other new 2000 and later model year off-road compression-ignition engines. For the purposes of this section, these engines shall be called “compression-ignition engines.”

(b)(1)(A) Exhaust emissions from new off-road compression-ignition engines, as sold in this state and as appropriate based on model year and maximum rated power, shall not exceed the levels contained in Table 1a with respect to steady-state testing. Table 1a follows:

Table 1a. – Tier 1, Tier 2, and Tier 3 Exhaust Emission Standards  
(grams per kilowatt-hour)

Maximum Rated Power (kW) <sup>1</sup>	Tier	Model Year	NO <sub>x</sub> <sup>2</sup>	HC <sup>3</sup>	NMHC+NO <sub>x</sub> <sup>4</sup>	CO <sup>5</sup>	PM <sup>6</sup>
kW<8	Tier 1	2000-2004	—	—	10.5	8.0	1.0
	Tier 2	2005-2007 <sup>7</sup>	—	—	7.5	8.0	0.80
8≤kW<19	Tier 1	2000-2004	—	—	9.5	6.6	0.80
	Tier 2	2005-2007 <sup>7</sup>	—	—	7.5	6.6	0.80
19≤kW<37	Tier 1	2000-2003	—	—	9.5	5.5	0.80
	Tier 2	2004-2007 <sup>7</sup>	—	—	7.5	5.5	0.60
37≤kW<56	Tier 1	2000-2003	9.2	—	—	—	—
	Tier 2	2004-2007	—	—	7.5	5.0	0.40
	Tier 3 <sup>8</sup>	2008-2011	—	—	4.7	5.0	0.40
56≤kW<75	Tier 1	2000-2003	9.2	—	—	—	—
	Tier 2	2004-2007	—	—	7.5	5.0	0.40
	Tier 3	2008-2011	—	—	4.7	5.0	0.40
75≤kW<130	Tier 1	2000-2003 <sup>2</sup>	9.2	—	—	—	—
	Tier 2	2003-2006	—	—	6.6	5.0	0.30
	Tier 3	2007-2011	—	—	4.0	5.0	0.30
130≤kW<225	Tier 1	1996-2002	9.2	1.3	—	11.4	0.54
	Tier 2	2003-2005	—	—	6.6	3.5	0.20
	Tier 3	2006-2010	—	—	4.0	3.5	0.20
225≤kW<450	Tier 1	1996-2000	9.2	1.3	—	11.4	0.54
	Tier 2	2001-2005	—	—	6.4	3.5	0.20
	Tier 3	2006-2010	—	—	4.0	3.5	0.20
450≤kW≤560	Tier 1	1996-2001	9.2	1.3	—	11.4	0.54
	Tier 2	2002-2005	—	—	6.4	3.5	0.20
	Tier 3	2006-2010	—	—	4.0	3.5	0.20
kW>560	Tier 1	2000-2005	9.2	1.3	—	11.4	0.54
	Tier 2	2006-2010	—	—	6.4	3.5	0.20

1. kW means kilowatts.
2. NO<sub>x</sub> means Oxides of Nitrogen.
3. HC means Hydrocarbons.
4. NMHC+NO<sub>x</sub> means Non-Methane Hydrocarbons plus Oxides of Nitrogen.
5. CO means Carbon Monoxide.
6. PM means Particulate Matter.
7. Tier 2 standards for propulsion marine compression-ignition engines below 37 kW remain in effect beyond the 2007 end date.
8. Manufacturers may optionally certify engine families to the interim Tier 4 standards in Table 1b for this power category through 2012.

(B) Exhaust emissions from new off-road compression-ignition engines, as sold in this state and as appropriate based on model year and maximum engine power, shall not exceed the levels contained in Table 1b, with respect to steady-state testing, transient testing, and, after application of the criteria in Table 1c, not-to-exceed testing, as applicable. Other compliance options are ~~permissible~~ as provided in the 2008-2010 or 2011 and Later Test Procedures as applicable.

Table 1b. – Tier 4 Exhaust Emission Standards  
(grams per kilowatt-hour)

Maximum Engine Power	Model Year	Type	PM	NMHC+NO <sub>x</sub>	NMHC	NO <sub>x</sub>	CO
			grams per kilowatt-hour				
kW<8 <sup>1</sup>	2008 and later	Final	0.40 <sup>2</sup>	7.5	-	-	8.0
8≤kW<19 <sup>1</sup>							6.6
19≤kW<37 <sup>1</sup>	2008-2012	Interim	0.30	7.5	-	-	5.5
	2013 and later	Final	0.03	4.7			
37≤kW<56 <sup>3</sup>	2008-2012	Interim	0.30	4.7	-	-	5.0
	2013 and later	Final	0.03				
56≤kW<75	2012-2014 <sup>4</sup>	Phase-In	0.02	-	0.19	0.40	5.0
		Phase-Out		4.7	-	-	
		or/ Alt NO <sub>x</sub>		-	0.19	3.4 <sup>5</sup>	
		<del>or/ Alt NO<sub>x</sub>+NMHC<sup>8</sup></del>		<del>3.5<sup>5</sup></del>	=	=	
2015 and later	Final	-	0.19	0.40			
75≤kW<130	2012-2014 <sup>4</sup>	Phase-In	0.02	-	0.19	0.40	5.0
		Phase-Out		4.0	-	-	
		or/ Alt NO <sub>x</sub>		-	0.19	3.4 <sup>5</sup>	
		<del>or/ Alt NO<sub>x</sub>+NMHC<sup>8</sup></del>		<del>3.5<sup>5</sup></del>	=	=	
2015 and later	Final	-	0.19	0.40			
130≤kW≤560	2011-2013	Phase-In	0.02	-	0.19	0.40	3.5
		Phase-Out		4.0	-	-	
		or/ Alt NO <sub>x</sub>		-	0.19	2.0	
		<del>or/ Alt NO<sub>x</sub>+NMHC<sup>8</sup></del>		<del>2.1</del>	=	=	
2014 and later	Final	-	0.19	0.40			
560 kW<GEN <sup>6</sup> ≤900 kW	2011-2014	Interim	0.10	-	0.40	3.5	3.5
	2015 and later	Final	0.03		0.19	0.67	
GEN>900 kW	2011-2014	Interim	0.10	-	0.40	0.67	3.5
	2015 and later	Final	0.03		0.19		
ELSE <sup>7</sup> >560 kW	2011-2014	Interim	0.10	-	0.40	3.5	3.5
	2015 and later	Final	0.04		0.19		

Notes:

- Propulsion marine compression-ignition engines below 37 kW are not subject to Tier 4 standards or requirements. All previously adopted requirements remain applicable for these engines.
- The Tier 4 PM standard for hand-start, air cooled, direct injection engines below 8 kW is 0.60 g/kW-hr, but is not required until 2010.
- Engine families in this power category may alternately meet Tier 3 PM standards from 2008-2011 in exchange for introducing final PM standards in 2012.
- Manufacturers have the option of complying with the Tier 4 standards over a two year period at 50% per year using banked Tier 2 credits or over a three year period at 25% per year without the use of Tier 2 credits. The three year phase-in period is shown. The 2014 model year cannot extend beyond December 30, 2014, when the 3 year phase-in option is used.
- Manufacturers may comply with the standards during the transitional implementation years using either a phase-in / phase-out approach or by using the Alternate NO<sub>x</sub> approach. The three year 25% alternate NO<sub>x</sub> standard and alternate NO<sub>x</sub> + NMHC standards are shown in the table. The two year 50% phase-in alternate NO<sub>x</sub> standard would be 2.3 g/kW-hr. ~~The two year 50% alternate NO<sub>x</sub> + NMHC standard would be 2.4 g/kW-hr.~~
- "GEN" refers to generator engines only.
- "ELSE" refers to all mobile machinery excluding generator engines.
- ~~An ALT NO<sub>x</sub> + NMHC standard equal to 0.5 g/kW-hr is available for one additional model year following the last model year of the ALT NO<sub>x</sub> + NMHC phase-in shown in the table.~~

Table 1c. – Criteria for Determining NTE Limits<sup>1</sup>

<i>Pollutant</i>	<i>Apply NTE Multiplier of 1.25 when ...</i>	<i>Apply NTE Multiplier of 1.50 when ...</i>
NOx	NOx Standard or FEL $\geq$ 2.5 g/kW-hr	NOx Standard <sup>2</sup> or FEL < 2.5 g/kW-hr
NMHC	NOx Standard or FEL $\geq$ 2.5 g/kW-hr	NOx Standard <sup>2</sup> or FEL < 2.5 g/kW-hr
NMHC+NOx	<u>NMHC+NOx</u> Standard or FEL $\geq$ 2.7 g/kW-hr	NMHC+NOx Standard <sup>2</sup> or FEL < 2.7 g/kW-hr
PM	PM Standard or FEL $\geq$ 0.07 g/kW-hr	PM <sup>2</sup> Standard or FEL <sup>3</sup> < 0.07 g/kW-hr
CO	Always	Never

Notes:

- 1 Other provisions described in the 2008-2010 or 2011 and Later Test Procedures may affect the calculation of NTE limits.
- 2 Engines must be certified to these standards without the use of ABT credits.
- 3 For engines certified to a PM FEL less than or equal to 0.01 g/kW-hr, the PM NTE limit shall be 0.02 g/kW-hr.

(2) Manufacturers may elect to include engine families in one of two averaging, banking, and trading (ABT) programs, corresponding to the engine family's model year and emissions categorization. The provisions of these separate ABT programs are specified in Part 89, Subpart C of the 2000 Plus Limited Test Procedures and Part 1039, Subpart H of the 2008-2010 or Part I-D of the 2011 and Later Test Procedures as applicable.

(A) For engine families subject to the 2000 Plus Limited Test Procedures, the manufacturer must set a family emission limit (FEL) not to exceed the levels contained in Table 2a. The FEL established by the manufacturer serves as the emission standard for that engine family. Table 2a follows:

Table 2a – Upper Limit for Tier 1, Tier 2, and Tier 3 Family Emission Limits (FEL)  
(grams per kilowatt-hour)

Maximum Rated Power (kW)	Tier	Model Year	NO <sub>x</sub>	NMHC+NO <sub>x</sub>	PM FEL
kW<8	Tier 1	2000-2004		16.0	1.2
	Tier 2	2005-2007		10.5	1.0
8≤kW<19	Tier 1	2000-2004		16.0	1.2
	Tier 2	2005-2007		9.5	0.80
19≤kW<37	Tier 1	2000-2003		16.0	1.2
	Tier 2	2004-2007		9.5	0.80
37≤kW<56	Tier 1	2000-2003	14.6		
	Tier 2	2004-2007		11.5	1.2
	Tier 3 <sup>1</sup>	2008-2011		7.5	1.2
56≤kW<75	Tier 1	2000-2003	14.6		
	Tier 2	2004-2007		11.5	1.2
	Tier 3	2008-2011		7.5	1.2
75≤kW<130	Tier 1	2000-2002	14.6		
	Tier 2	2003-2006		11.5	1.2
	Tier 3	2007-2011		6.6	1.2
130≤kW<225	Tier 1	2000-2002	14.6		
	Tier 2	2003-2005		10.5	0.54
	Tier 3	2006-2010		6.6	0.54
225≤kW<450	Tier 1	2000	14.6		
	Tier 2	2001-2005		10.5	0.54
	Tier 3	2006-2010		6.4	0.54
450≤kW≤560	Tier 1	2000-2001	14.6		
	Tier 2	2002-2005		10.5	0.54
	Tier 3	2006-2010		6.4	0.54
kW>560	Tier 1	2000-2005	14.6		
	Tier 2	2006-2010		10.5	0.54

1. Manufacturers may optionally certify engine families to the interim Tier 4 FEL caps in Table 2b for this power category through 2012.

(B) For engine families subject to the 2008-2010 or 2011 and Later Test Procedures, the manufacturer must set a family emission limit (FEL) not to exceed, as applicable, the levels contained in Table 2b. Three distinct FEL types (primary, interim, and alternate) are available conditionally. Primary FEL types are applicable to all power categories indefinitely, whereas interim and alternate FEL types are of variable duration

and may be selectively applied as applicable to total or partial engine family production volumes as described in the 2008-2010 or 2011 and Later Test Procedures. The FEL established by the manufacturer serves as the emission standard for that engine family, and is used for determining NTE limits in conjunction with the criteria in Table 1c. Temporary compliance adjustment factors, as explained in the 2008-2010 and 2011 and Later Test Procedures as applicable, shall be applied by the manufacturer to compensate for the use of transitional alternate FELs (Type ALT 20% in Table 2b) when calculating emission credits. Table 2b follows:



Table 2b – Upper Limit for Tier 4 Family Emission Limits (FELs) and Alternate Allowances  
Part 1

Maximum Engine Power	FEL Type	Model Year	PM	NO <sub>x</sub>	NMHC+NO <sub>x</sub>
			grams per kilowatt-hour		
kW<8	Primary	2008 and later	0.80	-	10.5
8≤kW<19	Primary	2008 and later	0.80	-	9.5
19≤kW<37	Interim	2008-2012	0.60	-	9.5
	Primary	2013 and later	0.05	-	7.5
	ALT 20% <sup>1</sup>	2013-2016 <sup>3</sup>	0.30	-	7.5
ALT 5% <sup>2</sup>	2017 and later <sup>3</sup>				
37≤kW<56	Interim	2008-2012 <sup>3</sup>	0.40	-	7.5
	Primary	2013 and later <sup>3</sup>	0.05	-	7.5
	ALT 20%	2013-2016 <sup>3</sup>	0.30	-	7.5
	ALT 5%	2017 and later <sup>3</sup>			
56≤kW<75	Phase-in	2012-2013/2014 <sup>5</sup>	0.04	0.80	-
	Phase-out			-	7.5
	Alternate ALT NO <sub>x</sub> Std <sup>4</sup>	2012-2013	0.04	3.0 <sup>7</sup>	-
		2012-2014		4.4	
	<del>ALT NO<sub>x</sub>+NMHC Std<sup>4</sup></del>	<del>2012-2013/2014<sup>5</sup></del>	<del>0.04</del>	<del>-</del>	<del>4.7<sup>7</sup></del>
	Primary	2014/2015 <sup>5</sup> and later	0.04	0.80	-
	ALT 20% PM	2012-2015	0.40		-
	ALT 20% NO <sub>x</sub>	2012-2015 <sup>6</sup>		4.4	-
	<del>ALT 20% NO<sub>x</sub>+NMHC Std</del>	<del>2012-2015<sup>6</sup></del>	<del>-</del>	<del>-</del>	<del>4.7</del>
	ALT 5%	2016 and later	0.40	4.4	-

Notes:

- 1 This alternate FEL option is transitional for the four years specified and applies to at most 20% of a manufacturer's U.S. directed population of engine families per year.
- 2 This alternate FEL option is available indefinitely, but only applies to 5% of a manufacturer's U.S. directed population of engine families per year.
- 3 These dates correspond to the compliance option of meeting interim standards in 2008; else the primary and alternate FEL caps would begin and/or end one year earlier, and 2008-2011 engines would not be eligible for participation in the Tier 4 ABT program.
- 4 Two alternate NO<sub>x</sub> standards and corresponding FEL caps are available for this category with corresponding alternate phase-in options. ~~Two alternate NO<sub>x</sub>+NMHC standards are also available; the FEL caps are the previously applicable NO<sub>x</sub>+NMHC standards from Table 1a of this section.~~
- 5 The effective date of the primary FEL cap follows the phase-in period and use of banked Tier 2 NO<sub>x</sub> credits of the selected NO<sub>x</sub> FEL cap.
- 6 ~~If interim Tier 4 standards are not met in 2008, the alternate NO<sub>x</sub> FEL would only be available for 2015.~~ For manufacturers certifying engines in this power category using a percentage phase-in/phase-out approach instead of the ALT NO<sub>x</sub> or ALT NO<sub>x</sub>+NMHC standards in Table 1b of §2423(b)(1)(B), the alternate NO<sub>x</sub> and NO<sub>x</sub>+NMHC FEL caps in the table apply only in the 2014-2015 model years if certifying in accordance with the provisions in §1039.102(d)(1) of the 2011 and Later Test Procedures, and only in the 2015 model year if certifying under §1039.102(d)(2) of the 2011 and Later Test Procedures.
- 7 If neither the alternate phase-in option nor banked Tier 2 credits are used, either NO<sub>x</sub> standard, ~~or the NO<sub>x</sub>+NMHC standard~~, and corresponding FEL may be applied for this category.

Table 2b – Upper Limit for Tier 4 Family Emission Limits (FELs) and Alternate Allowances  
Part 2

Maximum Engine Power	FEL Type	Model Year	PM	NO <sub>x</sub>	NMHC+NO <sub>x</sub>
			grams per kilowatt-hour		
75≤kW<130	Phase-in	2012-2013/2014 <sup>5</sup>	0.04	0.80	-
	Phase-out			-	6.6
	Alternate ALT NO <sub>x</sub> Std <sup>4</sup>	2012-2013		3.0 <sup>7</sup>	-
		2012-2014		3.8	-
	<del>ALT NO<sub>x</sub>+NMHC Std<sup>4</sup></del>	<del>2012-2013/2014<sup>5</sup></del>		<del>-</del>	<del>4.0<sup>7</sup></del>
	Primary	2014/2015 <sup>5</sup> and later		0.80	-
	ALT 20% PM	2012-2015	0.30		-
	ALT 20% NO <sub>x</sub>	2014-2015 <sup>6</sup>		3.8	-
	<del>ALT 20% NO<sub>x</sub>+NMHC Std<sup>4</sup></del>	<del>2012-2015<sup>6</sup></del>		<del>-</del>	<del>4.0</del>
ALT 5%	2016 and later	0.30	3.8	-	
130≤kW≤560	Phase-in	2011-2013	0.04	0.80	-
	Phase-out			-	6.6/6.4 <sup>8</sup>
	Alternate ALT NO <sub>x</sub> Std	2011-2013		2.7	-
	<del>ALT NO<sub>x</sub>+NMHC Std</del>	<del>2011-2013</del>		<del>-</del>	<del>4.0</del>
	Primary	2014 and later		0.80	-
	ALT 20% PM	2011-2014	0.20		-
	ALT 20% NO <sub>x</sub>	2011-2014 <sup>9</sup>		3.8	-
	<del>ALT 20% NO<sub>x</sub>+NMHC Std</del>	<del>2011-2014<sup>9</sup></del>		<del>-</del>	<del>4.0</del>
ALT 5%	2015 and later	0.20	3.8	-	
GEN>560kW	Interim	2011-2014	0.20	6.2	-
	Primary	2015 and later	0.05	1.07	-
	ALT 20%	2015-2018	0.10	3.5	-
	ALT 5%	2019 and later			-
ELSE>560kW	Interim	2011-2014	0.20	6.2	-
	Primary	2015 and later	0.07		-
	ALT 20%	2015-2018	0.10		-
	ALT 5%	2019 and later			-

Notes:

- 4 Two alternate NO<sub>x</sub> standards and corresponding FEL caps are available for this category with corresponding alternate phase-in options. Two alternate NO<sub>x</sub>+NMHC standards are also available; the FEL caps are the previously applicable NO<sub>x</sub>+NMHC standards from Table 1a of this section.
- 5 The effective date of the primary FEL cap follows the phase-in period and use of banked Tier 2 NO<sub>x</sub> credits of the selected NO<sub>x</sub> FEL cap.
- 6 If interim Tier 4 standards are not met in 2008, the alternate NO<sub>x</sub> FEL would only be available for 2015. For manufacturers certifying engines in this power category using a percentage phase-in/phase-out approach instead of the ALT NO<sub>x</sub> or ALT NO<sub>x</sub>+NMHC standards in Table 1b of §2423(b)(1)(B), the ALT NO<sub>x</sub> and ALT NO<sub>x</sub>+NMHC FEL caps in the table apply only in the 2014-2015 model years if certifying in accordance with the provisions in §1039.102(d)(1) of the 2011 and Later Test Procedures, and only in the 2015 model year if certifying under §1039.102(d)(2) of the 2011 and Later Test Procedures.
- 7 If neither the alternate phase-in option nor banked Tier 2 credits are used, either NO<sub>x</sub> standard, or the NO<sub>x</sub>+NMHC standard, and corresponding FEL may be applied for this category.
- 8 The phase-out NMHC+NO<sub>x</sub> FEL cap is 6.6 g/kW-hr for engines < 225 kW, and 6.4 g/kW-hr for engines ≥ 225 kW in this category.
- 9 For manufacturers certifying engines in this power category using the percentage phase-in/phase-out approach instead of the ALT NO<sub>x</sub> standard or the ALT NO<sub>x</sub>+NMHC standard in Table 1b of §2423(b)(1)(B), the ALT NO<sub>x</sub> and ALT NO<sub>x</sub>+NMHC FEL caps in the table apply only for the 2014 model year.

(C) ~~Split family provision~~ Split family provision. For generating or using credits in the  $56 \leq \text{kW} \leq 560$  power categories during the phase-in of Tier 4 standards, engine manufacturers may elect to split an engine family into two subfamilies (e.g., one which uses credits and one which generates credits for the same pollutant). The engine manufacturer must indicate in the application for certification that the engine family is to be split, and may calculate emission credits relative to different emission standards (i.e., phase-in and phase-out standards) for different sets of engines within the engine family, but must certify the engine family to a single set of standards and FELs. The engine manufacturer shall calculate NMHC+NOx emission credits by adding the NOx FEL to the NMHC phase-in standard for comparison with the applicable NMHC+NOx phase-out standard. Any engine family certified under the provisions of this paragraph (C) must meet the applicable phase-in standard for NMHC. The engine manufacturer shall be responsible for assigning the number and configurations of engines within the respective subfamilies before the due date of the final report required in Part 1039, Subpart H of the 2008-2010 Test Procedures or Part I-D of the 2011 and Later Test Procedures, as applicable. The same label must be applied to each engine in the family, and must include the NOx FEL to which the engine is certified.

(3)(A) The opacity of smoke emissions from new 1996 through 1999 model year heavy-duty off-road compression-ignition engines 175 to 750 horsepower, inclusive, or from all new 2000 and later model year compression-ignition engines sold in this State, shall not exceed, based on the applicable measurement techniques specified in Part 89, Subpart B of the 2000 Plus Limited Test Procedures and Part 1039, Subpart B of the 2008-2010 Test Procedures or Part I-D of the 2011 and Later Test Procedures as applicable, the following:

1. 20 percent during the engine acceleration mode.
2. 15 percent during the engine lugging mode.
3. 50 percent during the peaks in either mode.

(B) The following engines are exempt from the requirements of this paragraph (3):

1. Single-cylinder engines.
2. Propulsion marine compression-ignition engines.
3. Constant-speed engines.
4. Engines certified to a PM emission standard or FEL of 0.07 grams per kilowatt-hour or lower.

(4) Low-emitting Blue Sky Series engines requirements.

(A) ~~Voluntary standards~~ Voluntary standards. Engines subject to the standards in (b)(1)(A) may be designated "Blue Sky Series" engines by meeting the voluntary standards contained in Table 3, which apply to all certification and in-use testing. Blue

Sky Series engines shall not be included in the Averaging, Banking, and Trading program. Table 3 follows:

Table 3. – Voluntary Emission Standards  
(grams per kilowatt-hour)

<i>Maximum Rated Power (kW)</i>	<i>NMHC+NO<sub>x</sub></i>	<i>PM</i>
KW<8	4.6	0.48
8≤kW<19	4.5	0.48
19≤kW<37	4.5	0.36
37≤kW<75	4.7	0.24
75≤kW<130	4.0	0.18
130≤kW≤560	4.0	0.12
KW>560	3.8	0.12

(B) ~~Additional standards~~ Additional standards. Blue Sky Series engines are subject to all provisions that would otherwise apply under this part, except as specified in (b)(4)(C) of this section.

(C) ~~Test Procedures~~ Test Procedures. NO<sub>x</sub>, NMHC, and PM emissions are measured using the procedures set forth in 40 CFR part 86, subpart N (July 1, 1999), which is incorporated by reference, in lieu of the procedures set forth in subpart E of the 2000 Plus Limited Test Procedures. CO emissions may be measured using procedures set forth in 40 CFR part 86, subpart N (July 1, 1999), or in subpart E of the 2000 and Later Test Procedures. Manufacturers may use an alternate procedure to demonstrate the desired level of control if approved in advance by the Executive Officer. Engines meeting the requirements to qualify as Blue Sky Series engines must be capable of maintaining a comparable level of emission control when tested using the procedures set forth in both Section 89.112(c) and subpart E of the 2000 and Later Test Procedures. The numerical emission levels measured using the procedures from subpart E of the 2000 Plus Limited Test Procedures may be up to 20 percent higher than those measured using procedures from 40 CFR part 86, subpart N (July 1, 1999), and still be considered comparable.

(5)(A) No crankcase emissions shall be discharged into the ambient atmosphere from any new 1996-1999 model year heavy-duty off-road compression-ignition engine or any Tier 2 or later off-road compression-ignition engine subject to the 2000 Plus Limited Test Procedures. This provision does not apply to petroleum-fueled diesel cycle engines using turbochargers, pumps, blowers, or superchargers for air induction.

(B) For off-road compression-ignition engines subject to the 2008-2010 or 2011 and Later Test Procedures, no crankcase emissions shall be discharged directly into the ambient atmosphere from any engine, unless the sum of those discharged emissions are added to the exhaust emissions (either physically or mathematically) during all

emission testing. To be eligible for this option, a manufacturer must design its engines so that all crankcase emissions can be routed into the applicable sampling systems specified in the 2008-2010 or 2011 and Later Test Procedures as applicable, and must account for deterioration in crankcase emissions when determining exhaust deterioration factors. Crankcase emissions that are routed to the exhaust upstream of exhaust aftertreatment during all operation are not considered to be discharged directly into the ambient atmosphere. Furthermore, engines using charge-air compression that are certified to a transitional alternate FEL (Type ALT 20% in Table 2b) during the first four years of the Tier 4 standards for the applicable power category are exempt from this subsection, but must instead comply with the requirements in Section 2423(b)(5)(A).

(6) Engine manufacturers that voluntarily certify engines to the Tier 4 standards in Table 1b earlier than required under this article may, according to the provisions in the 2008-2010 or 2011 and Later Test Procedures as applicable, generate additional ABT credits, or as an alternative, offset future Tier 4 compliance requirements should the equipment manufacturer that was provided the engine decline to use its early introduction incentives according to the provisions in Section 2423(d)(9). Table 4, as follows, summarizes the incentives for the early introduction of Tier 4 engines and some of the conditions that determine eligibility.

Table 4. – Early Introduction Incentives for Engine Manufacturers

<i>Early Introduction</i>	<i>Power Category</i>	<i>Qualifying Standards<sup>1</sup> grams per kilowatt-hour</i>	<i>Per-Engine Incentive</i>
Final Tier 4 PM-Only <sup>2</sup>	19 ≤ kW < 56	0.03 PM	3 for 2 PM-Only
	56 ≤ kW < 560	0.02 PM	
Final Tier 4 All	19 ≤ kW < 56	0.03 PM / 4.7 NMHC+NO <sub>x</sub>	3 for 2
	56 ≤ kW ≤ 560	0.02 PM / 0.40 NO <sub>x</sub> / 0.19 NMHC	
	GEN > 560	0.03 PM / 0.67 NO <sub>x</sub> / 0.19 NMHC	
	ELSE ≥ 560	0.04 PM / 3.5 NO <sub>x</sub> / 0.19 NMHC	
Ultra Low NO <sub>x</sub>	kW ≥ 19	Final Tier 4 PM & NMHC / 0.20 NO <sub>x</sub>	2 for 1

Notes:

- 1 All engines must meet the Tier 4 crankcase emissions requirements. Engines must certify using all test and other requirements otherwise required for final Tier 4 standards such as for transient and not-to-exceed limits.
- 2 Offsets must be earned prior to the start of phase-in requirements (prior to 2013 for 19 ≤ kW < 56 engines, prior to 2012 for 56 ≤ kW < 130 engines, prior to 2011 for 130 ≤ kW ≤ 560 engines, prior to 2015 for > 560 kW engines)

(7) ~~Provisions for small-volume manufacturers~~ Provisions for small-volume manufacturers. Small-volume engine manufacturers are entitled to special compliance provisions under this paragraph, but must notify the Executive Officer in writing before January 1, 2008, of the intent to use the provisions.

(A) Small-volume engine manufacturers may delay complying with certain otherwise applicable Tier 4 emission standards and requirements as described in the following table:

Table 5. – Small-Volume Engine Manufacturer Provisions

<i>Maximum Engine Power</i>	<i>Temporary Relief Replacement Standards</i>	<i>Delay End Date (Model Year)</i>
kW < 19	Tier 2	2011
19 ≤ kW < 37	Interim Tier 4	2016
37 ≤ kW < 56	See paragraph (7)(B) of this section for special provisions that apply for engines in this power range.	
56 ≤ kW < 130	Tier 3	2015

(B) The provisions of this paragraph (7) for engines 37 ≤ kW < 56 are applicable per one of the following options:

1. Manufacturers that comply with the 0.30 g/kW-hr PM standard in all model years from 2008 through 2012 without using PM credits may continue meeting that standard through 2015.

2. Manufacturers that choose not to comply with paragraph (7)(B)1. of this section may continue to comply with the standards and requirements in the 2000 Plus Limited Test Procedures for model years through 2012, but must begin complying in 2013 with the Tier 4 standards and requirements specified in Table 1b for model years 2013 and later.

(C) After the period of relief indicated in paragraphs (7)(A) and (B) of this section has expired, small-volume engine manufacturers must comply with the same Tier 4 standards and requirements as all other manufacturers.

(D) For engines not in the 19 ≤ kW < 56 power range, small-volume engine manufacturers must meet the following conditions for the model years in which compliance with the otherwise applicable standards under this paragraph (7) is delayed:

1. Produce engines that meet all the emission standards and other requirements under the 2000 Plus Limited Test Procedures applicable for that model year, except as noted in this paragraph (7).

2. Meet the labeling requirements in the 2000 Plus Limited Test Procedures, but must use the following in place of the otherwise required statement of compliance in

Section 2424(c)(2): "THIS ENGINE COMPLIES WITH CALIFORNIA REGULATIONS FOR [CURRENT MODEL YEAR] OFF-ROAD COMPRESSION-IGNITION ENGINES UNDER 13 CCR 2423(b)(7)." The referencing of similar federal requirements under this provision is permitted.

3. Small-volume engine manufacturers must notify the equipment manufacturer that the engines produced under this section are excluded from the production volumes associated with the equipment manufacturer flexibility program in Section 2423(d).

(E) For engines in the  $19 \leq \text{kW} < 56$  power range, small-volume engine manufacturers must meet the following conditions for the model years in which compliance with the otherwise applicable standards under this paragraph (7) is delayed:

1. Produce engines in those model years that meet all the emission standards and other requirements that applied for model year 2008 engines in the same power category.

2. Meet the labeling requirements in Section 2424(c)(3), but use the following compliance statement instead of the compliance statement in Section 2423(c)(3): "THIS ENGINE COMPLIES WITH CALIFORNIA REGULATIONS FOR [CURRENT MODEL YEAR] OFF-ROAD COMPRESSION-IGNITION ENGINES UNDER 13 CCR 2423(b)(7)." The referencing of similar federal requirements under this provision is permitted.

3. Notify the equipment manufacturer that engines produced under this section are excluded from the production volumes associated with the equipment-manufacturer allowance program in Section 2423(d).

(F) The provisions of this paragraph (7) may not be used to circumvent the requirements of this article.

(8) ~~Useful life~~ Useful life. For purposes of certification, a manufacturer must demonstrate compliance with the standards set forth in this paragraph (b) over the full useful life of the engine, as defined in the applicable test procedures.

(9) ~~NTE deficiencies~~ NTE deficiencies. A manufacturer may petition the Executive Officer to accept an off-road compression-ignition engine as compliant with the NTE requirements specified in the 2008-2010 or 2011 and Later Test Procedures as applicable even though specific elements of those requirements may not be fully met. Such grants of compliance, otherwise known as deficiencies, shall be limited to engines that have functioning emission-control hardware capable of allowing the engine to comply with the NTE limits. Deficiencies shall be granted by the Executive Officer according to the following stipulations:

(A) A manufacturer must apply for specific deficiencies at the time of, or prior to, submitting its application for certification. Deficiencies shall be assigned for an engine model within an engine family. The Executive Officer shall not approve deficiencies that are requested retroactively to cover engines already certified. The scope of each deficiency must be clearly identified in the certification application, and any auxiliary emission control device(s) used to control emissions to the lowest practical level must be identified with respect to each deficiency that is being requested.

(B) Deficiencies shall only be approved if compliance would be infeasible or unreasonable considering factors such as the technical feasibility of the given hardware, the availability of lead time, production cycles including the phase-in or phase-out of engines or vehicle designs, and planned computers upgrades. Other relevant factors may be considered.

(C) Deficiencies shall expire after a single model year and may be limited to specific engine configurations. The Executive Officer may approve a manufacturer's request for the same deficiency in the following model year if correcting the deficiency would require extreme hardware or software modifications and the manufacturer has demonstrated an acceptable level of effort toward complying.

(D) The number of deficiencies available to a manufacturer shall not be limited during the first three model years in which NTE limits apply to the manufacturer's engines. For the next four model years, up to three deficiencies per engine family shall be available to a manufacturer. Deficiencies of the same type that apply similarly to different power ratings within a family shall count as one deficiency per family. The Executive Officer may conditionally approve additional deficiencies during these four years, but may impose stipulations on their applicability as appropriate. Deficiencies shall not be approved beyond the seven-year period specified in this paragraph (8).

(10) ~~Adjustable parameters~~ Adjustable parameters. Manufacturers that design engines with adjustable parameters must meet all the requirements of this paragraph (b) for any adjustment in the physically adjustable range. An operating parameter is not considered adjustable if it is permanently sealed or if it is not normally accessible using ordinary tools. The Executive Officer may require that the adjustable parameters be set to any specification within the adjustable range during any testing, including certification testing, selective enforcement auditing, or in-use testing.

(11) ~~Prohibited controls~~ Prohibited controls. A manufacturer shall not design engines with emission control devices, systems, or elements of design that cause or contribute to an unreasonable risk to public health, welfare, or safety while operating.

(12) ~~Defeat devices~~ Defeat devices. Engines equipped with a defeat device shall not be certified for sale in California. A defeat device is a component or system that reduces the effectiveness of emission controls under conditions that the engine may reasonably be expected to encounter during normal operation and use. This prohibition



does not apply to auxiliary-emission control devices identified in the certification application if one of more of the following is true:

(A) The operating conditions where the auxiliary-emission control device is active were substantially encountered during all testing requirements as described in Part 1039, Subpart F of the 2008-2010 Test Procedures or Part I-D of the 2011 and Later Test Procedures as applicable.

(B) The design of the auxiliary-emission control device is shown to be necessary for preventing engine (or equipment) damage or accidents.

(C) The auxiliary-emission control device only reduces the effectiveness of emissions control during engine starting.

(c)(1) The test procedures for determining certification and compliance with the standards for gaseous exhaust emissions from new 1996-1999 heavy-duty off-road compression-ignition engines sold in the state are set forth in the 1996-1999 Heavy-Duty Test Procedures.

(2)(A) The test procedures for determining certification and compliance with the standards for gaseous exhaust emissions and the standards for opacity of smoke emissions from new 2000 model year and later off-road compression-ignition engines for which the standards in paragraph (b)(1)(A) are applicable, and sold in the state, are set forth in the 2000 Plus Limited Test Procedures.

(B) The test procedures for determining certification and compliance with the standards for gaseous exhaust emissions, particulate exhaust emissions, opacity of smoke emissions, and not-to-exceed emissions from new 2008 model year and later off-road compression-ignition engines for which the limits in paragraph (b)(1)(B) are applicable, and sold in the ~~s~~State, are set forth in the 2008-2010 or 2011 and Later Test Procedures as applicable.

(3) The test procedures for determining certification and compliance with the standards for particulate exhaust emissions from new 1996 and later off-road compression-ignition engines for which the standards in paragraph (b)(1)(A) are applicable, and sold in the state, are set forth in the PM and Test Cycle Limited Test Procedures.

(4) The test procedures for determining certification and compliance with the standards for the opacity of smoke emissions from new 1996-1999 off-road compression-ignition engines sold in the state are set forth in the 1996-1999 Smoke Test Procedures.

~~(d) Implementation flexibility for equipment and vehicle manufacturers and post-manufacture marinizers~~ Implementation flexibility for equipment and vehicle manufacturers and post-manufacture marinizers. For a limited time, off-road equipment and vehicle manufacturers and post-manufacture marinizers may produce equipment with engines that are subject to less stringent emission standards than required by Tables 1a and 1b for new 2000 model year and later off-road equipment and vehicles and marine compression-ignition engines, subject to the requirements of paragraph (e) of this section. Separate provisions are provided for equipment with engines subject to the 2000 Plus Limited Test Procedures versus equipment with engines subject to the 2008-2010 or 2011 and Later Test Procedures as applicable, and are identified accordingly in the following subsections. Only manufacturers that have primary responsibility for designing and manufacturing equipment, and have manufacturing procedures for installing engines in equipment, are eligible to participate in the equipment manufacturer flexibility program provided by the 2008-2010 or 2011 and Later Test Procedures as applicable. Equipment manufacturers participating in this flexibility program must comply with the notification and reporting requirements specified in Section 2423(d)(7). Engines produced for this flexibility program using FELs greater than the applicable standards must be offset with sufficient ABT credits. The following allowances apply separately to each engine power category subject to standards under Section 2423(b)(1):

(1) ~~Percent-of-production allowances~~ Percent-of-production allowances.

(A) ~~Equipment rated at or above 37kW and subject to the 2000 Plus Limited Test Procedures~~ Equipment rated at or above 37kW and subject to the 2000 Plus Limited Test Procedures. A manufacturer may produce equipment and vehicles with engines rated at, or above, 37kW that are exempted from meeting current model year emission standards for a portion of its California-directed production volume. These percent-of-production flexibility allowances must be used within the seven years immediately following the date on which Tier 2 engine standards first apply to engines used in such equipment and vehicles, provided that the seven-year sum of the U.S.-directed portion of the manufacturer's percent-of-production flexibility allowances does not exceed 80 percent, expressed in cumulative yearly percentage increments, and provided that all such equipment and vehicles contain only engines that have been certified to the Tier 1 or Tier 2 standards;

(B) ~~Equipment rated under 37kW and subject to the 2000 Plus Limited Test Procedures~~ Equipment rated under 37kW and subject to the 2000 Plus Limited Test Procedures. A manufacturer or post-manufacture marinizer may produce equipment and vehicles and marine engines with engines rated under 37kW that are exempt from meeting current model year emission standards for a portion of its California-directed production volume. These percent-of-production flexibility allowances must be used within the seven years immediately following the date on which Tier 1 engine standards first apply to engines used in such equipment and vehicles and marine engines, provided that the seven-year sum of the U.S.-directed portion of the manufacturer's

percent-of-production flexibility allowances does not exceed 80 percent, expressed in cumulative yearly percentage increments;

(C) ~~Equipment subject to the 2008 and Later Test procedures~~ Equipment subject to the 2008-2010 or 2011 and Later Test procedures. A manufacturer may produce equipment and vehicles with engines that are exempt from meeting current model year emission standards for a portion of its California-directed production volume. These percent-of-production flexibility allowances must be used within one of the seven-year flexibility usage periods specified in Table 6 for each applicable power category, provided that the seven-year sum of the U.S.-directed portion of the manufacturer's percent-of-production flexibility allowances does not exceed 80 percent, expressed in cumulative yearly percentage increments, except as provided for in paragraph (d)(6) or (f). Equipment used as percent-of-production flexibility allowances must contain only engines that have been certified to, at least, the standards listed in Table 6, corresponding to the flexibility usage period selected by the manufacturer. All flexibility allowances for a power category must be used within the same flexibility usage period.

Table 6. – Tier 4 Flexibility Allowance Options

<i>Power Category</i>	<i>7 Year Usage Period</i>	<i>Flexibility Standard<sup>1</sup></i>
< 19 kW	2008 – 2014	Tier 2
19 ≤ kW < 56	2008 – 2014 <sup>42</sup>	<del>Tier 3</del> <sup>2</sup> Tier 2
	2012 - 2018	2008 Interim Tier 4
56 ≤ kW < 130	2012 - 2018	Tier 3
	2014 - 2020	2012 Interim Tier 4
130 ≤ kW ≤ 560	2011 - 2017	Tier 3
	2014 - 2020	2011 Interim Tier 4
> 560 kW	2011 - 2017	Tier 2
	2015 - 2021	2011 Interim Tier 4

Notes:

<sup>1</sup> Engines certified to FELs for the flexibility standards indicated still comply with the emission Tier requirements; however, engines using FELs greater than the applicable standards must be off-set with sufficient ABT credits.

<sup>42</sup> This usage period is not available for allowances greater than or equal to 37 kW unless interim Tier 4 standards have been met starting in 2008.

<sup>2</sup> ~~Flexibility allowances under 37kW may contain engines certified to the Tier-2 standards.~~

(2)(A) ~~Small volume allowances subject to the 2000 Plus Limited Test Procedures~~ Small volume allowances subject to the 2000 Plus Limited Test Procedures. An off-road equipment or vehicle manufacturer or post-manufacture marinizer may exceed the production percentages in paragraphs (d)(1)(A) and (B) of this section for a portion of its California-directed production, provided that in each regulated power category the manufacturer's total number of U.S.-directed off-road equipment and

vehicles and marine diesel applications that contain engines which are exempt from meeting current model year emission standards over the years in which the percent-of-production allowance applies:

1. does not exceed 100 units times the number of years in which the percent-of-production allowance applies, and
2. does not exceed 200 units in any year, and
3. does not use engines from more than one engine family.

~~(B) Small volume allowances subject to the 2008 and Later Test Procedures.~~  
Small volume allowances subject to the 2008-2010 or 2011 and Later Test Procedures as applicable. As an alternative to the percent-of-production allowance in Section 2423(d)(1)(C), an off-road equipment or vehicle manufacturer may produce equipment with engines that are exempt from meeting current model year emission standards for a portion of its California-directed production volume, provided that the exempt equipment is a subset of the manufacturer's U.S.-directed volume of exempt equipment and the manufacturer is in compliance with the following provisions:

~~1. Single engine family provision~~ Single engine family provision. A manufacturer may claim up to 700 U.S.-directed flexibility allowances within a power category during one of the seven-year flexibility usage periods specified in Table 6, but no more than 200 allowances in a single year within a power category, except as provided for in paragraph(d)(6) or (f). Engines within a power category that are used in these flexibility allowances must be from a single engine family within a given year.

~~2.a. Multiple engine family provision for flexibility allowances below 130 kW~~  
Multiple engine family provision for flexibility allowances below 130 kW. A manufacturer may claim up to 525 U.S.-directed flexibility allowances within a power category during one of the seven-year flexibility usage periods specified in Table 6, but no more than 150 allowances in a single year within a power category, except as provided for in paragraph (d)(6) or (f). Engines within a power category that are used in these flexibility allowances may be from multiple engine families within a given year.

~~b. Multiple engine family provision for flexibility allowances at or above 130 kW~~  
Multiple engine family provision for flexibility allowances below 130 kW. A manufacturer may produce up to 350 U.S.-directed flexibility allowances within a power category during one of the seven-year flexibility usage periods specified in Table 6, but no more than 100 allowances in a single year within a power category, except as provided for in paragraph (d)(6) of (f). Engines within a power category that are used in these flexibility allowances may be from multiple engine families within a given year.

~~(3)(A) Inclusion of previous tier engines~~ Inclusion of previous-tier engines. Off-road equipment and vehicles and marine diesel engines built with previous tier or noncertified engines under the existing inventory provisions of the 2000 Plus Limited

Test Procedures (40 CFR Section 89.1003(b)(4)) need not be included in determining compliance with paragraphs (d)(1)(A) and (B) and (d)(2)(A) of this section.

~~(B) Inclusion of engines not subject to Tier 4 requirements~~ Inclusion of engines not subject to Tier 4 requirements. Off-road equipment and vehicles built with engines otherwise exempt from the requirements of the 2008-2010 or 2011 and Later Test Procedures as applicable are not required to be counted toward the percentage, or number, of claimed flexibility allowances under the provisions in Subsections (d)(1)(C) and (d)(2)(B). Such exempted engines include unused inventories produced prior to the effective date of the Tier 4 standards, excluding stockpiled engines, and hand-startable, air cooled, direct-injection engines below 8 kW in 2008 and 2009 that do not meet the Tier 4 PM standard. Nonetheless, manufacturers may choose to include these engines in the count of total equipment produced from which the percentage of flexibility allowances in Subsection (d)(1)(C) is derived.

~~(4) Early use of flexibility allowances~~ Early-use of flexibility allowances. Manufacturers may start using a portion of the flexibility allowances in Subsections (d)(1)(C) and (d)(2)(B) for equipment and vehicles containing engines not yet subject to the Tier 4 standards, provided that the seven-year period for using flexibility allowances under the 2000 Plus Limited Test Procedures flexibility program has expired. All equipment and vehicles claimed as flexibility allowances under this early-use provision must contain engines that have been certified to, at least, the Tier 1 or Tier 2 standards. Manufacturers must count these Tier 2 or Tier 3 equipment and vehicles toward the total percentage, or number, of flexibility allowances permitted under the provisions of Sections (d)(1)(C) and (d)(2)(B). The maximum cumulative early-use allowance is 10 percent under the percent-of-production provision in Section (d)(1)(C), or 100 units under the small volume provision in Section (d)(2)(B). Table 7 shows the applicable years for using early-use flexibility allowances. Table 7 follows:

Table 7. – Years for Early-Use Flexibility Allowances

<i>Maximum Engine Power</i>	<i>Calendar Years</i>
kW < 19	2007
19 ≤ kW < 37	2006 - 2011
37 ≤ kW < 56	2011
56 ≤ kW < 75	2011
75 ≤ kW < 130	2010 - 2011
130 ≤ kW < 225	2010
225 ≤ kW < 450	2008 - 2010
450 ≤ kW ≤ 560	2009 - 2010
> 560 kW	-

(5) ~~Labeling requirements~~ Labeling requirements. Allowances claimed under the Tier 2/3 or Tier 4 equipment flexibility programs must be labeled, as appropriate, per the following:

(A) ~~Engine labeling~~ Engine labeling. Except for engines used in flexibility allowances prior to January 1, 2007, engine manufacturers shall meet the labeling requirements provided in Section 2424, except that manufacturers may omit the family emission limits from the label only if the limits are more stringent than the emissions standards, with the following substitutions:

For flexibility engines meeting previous year emission requirements, the engine manufacturer shall substitute the following for the statement of compliance required in Sections 2424(c)(1)(E)6 and 2424(c)(2):

“THIS ENGINE COMPLIES WITH CALIFORNIA EMISSION REQUIREMENTS UNDER 13 CCR 2423(d). SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN FOR THE EQUIPMENT FLEXIBILITY PROVISIONS CITED MAY BE A VIOLATION OF STATE LAW SUBJECT TO CIVIL PENALTY.”  
[Insert Engine Family Name]

For flexibility engines less than 37 kW and not subject to emission requirements under the Tier 2/3 program, the engine manufacturer shall substitute the following for the statement of compliance required in Section 2424(c)(1)(E)6:

“THIS ENGINE QUALIFIES FOR USE IN EQUIPMENT RATED BELOW 37 KW BY PROVISION OF 13 CCR 2423(d). SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN FOR THE EQUIPMENT FLEXIBILITY PROVISIONS CITED MAY BE A VIOLATION OF CALIFORNIA LAW SUBJECT TO CIVIL PENALTY.”

As an alternative for flexibility engines produced under the Tier 2/3 program, and for which the engine manufacturer offers proof to the Executive Officer that the otherwise required statements of compliance in this subsection would be unduly burdensome or costly to implement, engine manufacturers may instead use the following:

“THIS ENGINE CONFORMS TO CALIFORNIA OFF-ROAD COMPRESSION-IGNITION ENGINE REGULATIONS UNDER 13 CCR 2423(d).” [Insert Engine Family Name if Certified]

These revised statements of compliance do not preclude the referencing of similar federal requirements that would be satisfied simultaneously by meeting the provisions of Section 2423(d). Furthermore, the Executive Officer may, upon request, approve alternate labeling specifications that are equivalent to the specifications in this subsection.

(B) ~~Equipment Labeling~~ Equipment Labeling. For all allowances claimed under the Tier 4 flexibility program, equipment manufacturers shall affix a permanent label to the engine, or to a readily visible section of the equipment that cannot be easily removed. The label shall be in the English language, shall supplement the manufacturer's emission control information label, and shall include the following information:

1. The label heading "EMISSION CONTROL INFORMATION".
2. The equipment manufacturer's corporate name and trademark.
3. The calendar year in which the equipment is manufactured.
4. ~~The name, An~~ An e-mail address, and phone number of a person to contact for further information, or a website that includes this contact information.
5. The following statement:  
"THIS EQUIPMENT [or identify the type of equipment] HAS AN ENGINE THAT MEETS CALIFORNIA EMISSION STANDARDS UNDER 13 CCR 2423(d)."

This label content does not preclude the referencing of similar federal requirements that would be satisfied simultaneously by meeting the provisions of Section 2423(d).

(6) ~~Technical hardship allowances~~ Technical hardship allowances. Equipment manufacturers may apply for additional flexibility allowances should extreme and unusual circumstances occur leading to technical obstacles in complying with the Tier 4 requirements. A manufacturer may request additional allowances for power categories  $19 \leq \text{kW} \leq 560$  if it claims allowances under the provisions of Section 2423(d)(1)(C), but may only request additional allowances for power categories  $19 \leq \text{kW} < 56$  if it claims allowances under the provisions of Section 2423(d)(2)(B). Additional flexibility allowances shall not be provided when the engine and equipment are produced by the same manufacturer, or affiliate. The Executive Officer shall review requests for additional flexibility allowances according to the following stipulations:

\* \* \* \* \*

(7) ~~Notification and reporting requirements for using Tier 4 flexibility allowances~~ Notification and reporting requirements for using Tier 4 flexibility allowances. As a prerequisite to using any Tier 4 flexibility allowances, the equipment manufacturer shall notify the ARB of its intent to use such allowances. The manufacturer shall also send an annual report after each year that flexibility allowances have been used to verify that the allowances claimed do not exceed the number of allowances permitted.

(A) ~~Before January 1 of the first year that flexibility provisions will be used, a~~ written notice informing ARB of the manufacturer's intent to use flexibility allowances must be sent to the Chief of the Mobile Source Operations Division, or designee, containing the following information:

1. The equipment manufacturer's name and address, and the name and address of the parent company, if applicable.
2. The name, ~~and~~ telephone number, and e-mail address of a person to contact for more information.
3. The calendar years for which the Tier 4 flexibility provisions shall apply.
4. ~~The~~Each engine manufacturer's name and address that expected to produces the engines which will be used in the equipment claimed as flexibility allowances.
5. An accurate estimate of the number of flexibility allowances in each power category that will be produced under the percent-of-production provisions in Section 2423(d)(1)(C), or the small volume provisions in Section 2423(d)(2)(B).
6. A tabulation of U.S.-directed flexibility allowances in each power category that have been sold in previous calendar years under the provisions of Section 2423(d) and 40 CFR 89.102(d).

(B) For each year that Tier 4 flexibility allowances are used, the equipment manufacturer shall submit, by March 31 of the following year, a written report to the Chief of the Mobile Source Operations Division, or designee, documenting the utilization of those allowances. ~~In This~~the report, the manufacturer shall include identify the total numbercount of equipment sold by the manufacturer during the preceding year for each power category, based on actual U.S.-directed production information, and shall identify the flexibility allowances in each power category by reporting the percentages of U.S.-directed flexibility production, and, if available, California-directed production volumes, corresponding to the number of equipment in each power category. If the manufacturer(s) of the engine installed in the equipment has not already been identified as required in §2423(d)(7)(A)4., the equipment manufacturer shall identify the name and address of this engine manufacturer(s) in the report. The report shall also identify the cumulative yearly totals and percentages for all flexibility allowances sold for each power category. Alternatively, the percentage figures may be omitted from the report if the report states that percent-of-production allowances were not used. ~~If available, end of year percentage figures for California-directed sales shall also be included in this report.~~

(8) ~~Import restrictions on the use of Tier 4 flexibility allowances~~ Import restrictions on the use of Tier 4 flexibility allowances. Foreign equipment manufacturers may only import equipment with exempted flexibility engines into California according to the stipulations in Section 1039.626 of the 2008-2010 Test Procedures or Part I-D of the 2011 and Later Test Procedures as applicable. These stipulations address the potential for abuse whereby individual importers could collectively import more flexibility allowances than permitted based on the foreign equipment manufacturer's total



production for the United States market. The stipulations include acceptance by the foreign equipment manufacturer of random audits by the ARB or its representatives, and the posting of a monetary bond for each imported engine to cover the cost of any potential enforcement actions. Foreign equipment manufacturers who comply with the stipulations will be eligible to receive the same flexibility allowances as domestic manufacturers.

(9) ~~Early introduction incentives for equipment manufacturers~~ Early introduction incentives for equipment manufacturers. In addition to the equipment flexibility allowances provided in Subsections (d)(1)(C) and (d)(2)(B), equipment manufacturers, as provided in the 2008-2010 or 2011 and Later Test Procedures, as applicable, may earn additional allowances for the early introduction of equipment with engines meeting the Tier 4 standards in Table 1b. Equipment manufacturers installing engines at or above 19 kW that comply with the final Tier 4 PM and NOx standards could earn one flexibility allowance for each early Tier 4 compliant engine used in its equipment. Equipment manufacturers installing engines  $56 \leq \text{kW} \leq 560$  that comply with the final Tier 4 PM standard and the alternative NOx standard could earn one-half of a flexibility allowance for each early Tier 4 engine used in its equipment. Table 8, below, summarizes the incentives for the early introduction of Tier 4 compliant equipment and some of the conditions that determine eligibility. Should an equipment manufacturer decline flexibility allowances earned with this provision, the allowances would then be available to the engine manufacturer that had supplied the early introduction engine, subject to the provisions in Section 2423(b)(6).

Table 8. – Early Introduction Incentives for Equipment Manufacturers

POWER CATEGORY	QUALIFYING STANDARDS (g/kW-hr)	INSTALLATION DEADLINE	FLEXIBILITY ALLOWANCE
19 ≤ kW < 56	0.03 PM / 4.7 NMHC+NOx	December 31, 2012 <sup>1</sup>	1 for 1
56 ≤ kW ≤ 130	0.02 PM / 0.40 NOx / 0.19 NMHC	December 31, 2011	1 for 1
	0.02 PM / 3.4 NOx / 0.19 NMHC <sup>2</sup>		1 for 2
130 ≤ kW ≤ 560	0.02 PM / 0.40 NOx / 0.19 NMHC	December 31, 2010	1 for 1
	0.02 PM / 2.0 NOx / 0.19 NMHC <sup>2</sup>		1 for 2
GEN > 560	0.03 PM / 0.67 NOx / 0.19 NMHC	December 31, 2014	1 for 1
ELSE > 560	0.04 PM / 3.5 NOx / 0.19 NMHC		

Notes:

- 1 The installation date for  $37 \leq \text{kW} \leq 56$  engines purchased from manufacturers choosing to opt out of the 2008 model year Tier 4 standards and instead comply with the Tier 4 standards beginning in 2012 would be December 31, 2011.
- 2 To be eligible, engines must meet the 0.02 g/kW-hr PM standard and the alternative NOx standards.

(e) ~~Recordkeeping and calculation to verify compliance~~ Recordkeeping and calculation to verify compliance. The following shall apply to off-road equipment or vehicle manufacturers and post-manufacture marinizers who produce flexibility equipment or vehicles or marine diesel engines under both the Tier 2/3 and Tier 4 flexibility provisions of paragraph (d) of this section, except as otherwise noted:

\* \* \* \* \*

(2) An off-road equipment or vehicle manufacturer or post-manufacture marinizer shall keep records of all off-road equipment and vehicles and marine diesel engines sold in California under the provisions of paragraph (d) of this section, for each power category in which flexibility allowances are claimed. These records shall include equipment and engine model numbers, serial numbers, engine family name, and dates of manufacture, engine rated power for Tier 2/3 flexibility engines, and maximum engine power for Tier 4 flexibility engines. In addition, the manufacturer shall keep records sufficient to demonstrate the verifications of compliance required in paragraph (e)(1) of this section and the notifications and reports specified in Section 2423(d)(7), as applicable. All records shall be kept until at least two full years for flexibility allowances under the Tier 2/3 program and five full years for flexibility allowances under the Tier 4 program after the final year in which allowances are available for each power category, and shall be made available to the Executive Officer upon request.

(f) ~~Economic hardship relief~~ Economic hardship relief. Off-road equipment and vehicle manufacturers and post-manufacture marinizers may request relief from the Executive Officer, or designee, subject to the following requirements:

\* \* \* \* \*

(3) The Executive Officer may impose other conditions on the granting of relief, including provisions to recover the lost environmental benefit. The labeling requirements in the 2008-2010 and 2011 and Later Test Procedures apply as applicable.

(g) ~~Alternative Flexibility for Post-Manufacture Marinizers~~ Alternative Flexibility for Post-Manufacture Marinizers. Post-manufacture marinizers may elect to delay the effective date of the Tier 1 standards for marine propulsion diesel engines rated under 37kW by one year, instead of using the provisions of paragraphs (d) and (f) of this section. Post-manufacture marinizers wishing to take advantage of this provision must inform the Executive Officer of their intent to do so in writing before the date that the standards would otherwise take effect.

(h) ~~Allowance for the production of engines~~ Allowance for the production of engines. To meet the demand for engines created under paragraph (d), (f), or (g) of this section, engine manufacturers may produce engines that do not meet current year emission requirements. However, engine manufacturers must receive written assurance from each equipment manufacturer, prior to production, that a certain number of these engines are needed for the equipment manufacturer's Tier 4 equipment flexibility allowances. Engine manufacturers shall provide to the Executive Officer annually, as part of the certification application, a list of the equipment manufacturers requesting such engines for their Tier 2/3 and Tier 4 equipment flexibility allowances. The list shall include the equipment manufacturers' names, engine models, and estimated national production volumes. A copy of the original correspondence from the equipment manufacturer requesting the production of flexibility engines shall be kept on file by the engine manufacturer in addition to, and in accordance with, the provisions of §1039.250 of the 2008-2010 Test Procedures or Part I-D of the 2011 and Later Test Procedures, as applicable, and shall be made available without delay to the Executive Officer upon request. Furthermore, all engines produced for sale in California under either of the transitional flexibility provisions for equipment manufacturers, must be covered by an Executive Order starting January 1, 2007. To obtain an Executive Order for these engines, the engine manufacturer shall comply with the following:

\* \* \* \* \*

(j)(1) A new compression-ignition off-road engine intended solely to replace an engine in a piece of off-road equipment that was originally produced with an engine manufactured prior to the applicable implementation date as specified in Section 2423, shall not be subject to the emission requirements of Section 2423 provided that:

(A) the engine manufacturer has ascertained that no engine produced by itself or the manufacturer of the engine that is being replaced, if different, and certified to the requirements of this article, is available with the appropriate physical or performance characteristics to repower the equipment; and

(B) unless an alternative control mechanism is approved in advanced by the Executive Officer, the engine manufacturer or its agent takes ownership and possession of the engine being replaced; and

(C) the engine manufacturer does not use the replacement-engine exemption to circumvent the regulations; and

(D) the replacement engine is clearly labeled with the following language in either (j)(1)(D)1., or (j)(1)(D)2. below, or similar alternate language approved in advance by the Executive Officer:

1. If the replacement engine is built to a configuration that was not subject to any emission standards under this Article 4, add a permanent label with your corporate name and trademark and the following language:

~~"THIS ENGINE DOES NOT COMPLY WITH CALIFORNIA AND FEDERAL OFF-ROAD OR ON-HIGHWAY EMISSION REQUIREMENTS. SALE OR INSTALLATION OF THIS ENGINE FOR ANY PURPOSE OTHER THAN AS A REPLACEMENT ENGINE FOR AN ENGINE MANUFACTURED PRIOR TO JANUARY 1 [INSERT APPROPRIATE YEAR]~~Insert appropriate year reflecting when the earliest tier of emission standards began to apply to engines of that size and type]~~IS MAY BE A VIOLATION OF CALIFORNIA AND FEDERAL LAW SUBJECT TO CIVIL PENALTY."~~

Beginning January 1, 2013, the following additional information shall also be included on the emission control label:

ENGINE POWER: {insert the advertised power of the specific engine configuration or the applicable power category for the engine family in kilowatts}

DATE OF MANUFACTURE: {insert the engine build date}"

In lieu of including "Engine Power" or "Date of Manufacture" on the emissions control label, manufacturers may provide this information on a supplemental label attached to the engine in accordance with the provisions of §2424.

2. If the replacement engine is built to a configuration that was subject to emission standards under this Article 4, add a permanent label with your corporate name and trademark and the following language:

"THIS ENGINE COMPLIES WITH CALIFORNIA OFF-ROAD EMISSION REQUIREMENTS FOR [Identify the appropriate emission standards (by model year, tier, or emission levels) for the replaced engine] ENGINES UNDER 13 CCR 2423(j). SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN TO REPLACE A [Identify the appropriate emission standards (by model year, tier, or emission levels) for the replaced engine] OFF-ROAD ENGINE MAY BE A VIOLATION OF CALIFORNIA LAW SUBJECT TO CIVIL PENALTY.

Beginning January 1, 2013, the following additional information shall also be included on the emission control label:

ENGINE POWER: {insert the certified power in kilowatts of the specific engine configuration, if applicable, otherwise insert advertised power in kilowatts}

REFERENCE FAMILY NAME: {insert the engine family name of the replacement engine as recorded in the Executive Order for the engine family to which the replacement engine was originally certified}

DATE OF MANUFACTURE: {insert the engine build date}

3. In lieu of including "Engine Power," Reference Family Name," or "Date of Manufacture" on the emissions control label, manufacturers may provide this information on a supplemental label attached to the engine in accordance with the provisions of §2424. Manufacturers may alternately state the applicable power category in kilowatts for the certified engine family on the emission control or supplemental label when indicating "Engine Power." Additionally, manufacturers may indicate the "Emissions Tier" of the replacement engine on the emissions control or supplemental label instead of the "Reference Family Name." For the purpose of this section, "Emissions Tier" is the emissions standard designation (e.g., Tier 1, Tier 2, Tier 3, Tier 4i, Tier 4f) of the engine recorded in the Executive Order for the engine family to which the replacement engine was originally certified. Certified power means the configuration-specific power of the replacement engine as originally identified in the application for certification of the reference engine family (see §1039.205(a)). Advertised power means engine power as stated by the manufacturer in sales literature.

2) At the conclusion of each of the 2000 and later model years, the manufacturer must provide, by engine model, the actual number of replacement engines produced for California during the model year, and a description of the physical or performance characteristics of those models that indicate certified replacement engine(s) were not available as per paragraph (1).

(k) Any new engine certified to comply with California emission standards and test procedures for on-road applications may, upon approval by the Executive Officer, be considered to be in compliance with these regulations.

(l) ~~Practices and labeling requirements for rebuilt engines~~ Practices and labeling requirements for rebuilt engines. This subsection shall apply as provided in paragraph (1) below to all off-road compression-ignition engines subject to the requirements of Section 2423 that are rebuilt after December 31, 2006, including those engines that were originally manufactured on, or prior to, December 31, 2006.

(1) ~~Practices~~ Practices. The rebuilding practices described in Part 89.130 of the incorporated 2000 Plus Limited Test Procedures, including the exemption for engines equal to or greater than 37 kW that meet the Tier 1 standard, and Part 1068.120 of the 2008-2010 Test Procedures or Part I-F of the 2011 and Later Test Procedures as applicable shall apply. These practices are summarized in paragraphs (1)(A) and (1)(B) below, which are provided as respective references for the labeling requirements in paragraphs (2)(A) and (2)(B) of this subsection.

\* \* \* \* \*

(m) Stockpiling prohibition. Manufacturers may not circumvent the provisions of this article by stockpiling engines with a date of manufacture preceding new or changed emission standards by deviating from normal production and inventory practices. For purposes of this paragraph (m), normal production and inventory practices means those practices typically employed for similar engine families in years in which emission standards do not change. The Executive Officer may request the submission of routine production and inventory records from manufacturers that document normal practices for up to eight years to aid in determining whether or not a violation of this section has occurred. Other stockpiling prohibitions in §1068.103 and §1068.105 of the 2011 and Later Test Procedures, Part I-E, apply.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43104 and 43211-43212, Health and Safety Code.

## **§ 2424. Emission Control Labels — 1996 and Later Off-Road Compression-Ignition Engines**

(a) *Purpose.* The Air Resources Board recognizes that certain emissions-critical or emissions-related parts must be properly identified and maintained in order for engines to meet the applicable emission standards. The purpose of these specifications is to require engine manufacturers to affix a label (or labels) on each production engine (or equipment) to provide the engine or equipment owner and service mechanic with information necessary for the proper maintenance of these parts in customer use.

(b) *Applicability.*

(1) These specifications shall apply to 1996-1999 model year heavy-duty off-road compression-ignition engines, which have been certified to the applicable emission standards pursuant to Health and Safety Code Section 43013.

(2) These specifications shall apply to 2000 and later model year compression-ignition engines, which have been certified to the applicable emission standards pursuant to Health and Safety Code Section 43013.

(3) Engine manufacturers who have certified such engines shall be responsible for complying with these specifications.

(c) *Label Content and Location.*

(1) For 1996-1999 heavy-duty off-road compression-ignition engines:

(A) A tune-up label shall be permanently attached to the engine block or other major component in such a way that it will be readily visible after installation of the engine in the equipment. If the equipment obscures the label on the engine, the equipment manufacturer shall attach a supplemental label such that it is readily visible.

(B) In selecting an acceptable location, the manufacturer shall consider the possibility of accidental damage (e.g., possibility of tools or sharp instruments coming in contact with the label). Each label shall be affixed in such a manner that it cannot be removed without destroying or defacing the label, and shall not be affixed to any part which is likely to be replaced during the equipment's useful life. The label(s) shall not be affixed to any component which is easily detached from the engine.

(C) In addition, an engine serial number shall be stamped on the engine block or stamped on a metal label riveted to the engine block. Engine manufacturers shall keep records such that the engine serial number can easily be used to determine if an engine was certified for the applicable model year.

(D) The label shall be in the English language and use block letters and numerals which shall be of a color that contrasts with the background of the label.

(E) The label shall contain the following information:

1. The label heading shall read:

"Important Engine Information."

2. Full corporate name and trademark of the manufacturer.

3. "This (specify equipment or engine, as applicable) is certified to operate on (specify operating fuel(s))."

4. *Identification of the Exhaust Emission Control System.* Abbreviations may be used and shall conform to the nomenclature and abbreviations found in the Society of Automotive Engineers document J1930 which is incorporated by reference herein [in Section 1977, Title 13, CCR], entitled "Diagnostic Acronyms, Terms, and Definitions for Electrical/Electronic Systems."

5. The specifications and adjustments recommended by the manufacturer, including, if applicable: initial injection timing, and fuel rate (in mm<sup>3</sup>/stroke) at advertised horsepower. These specifications shall indicate the proper transmission position, (if applicable), during tune-up and what accessories, if any, should be in operation, and what systems, if any (e.g., vacuum advance, air pump), should be disconnected during the tune-up. If the manufacturer does not recommend adjustment of the foregoing specifications, the manufacturer shall include in lieu of the "specifications" the single statement "No other adjustments needed." For all engines, the instructions for tune-up adjustments shall be sufficiently clear on the label to preclude the need for a mechanic or equipment owner to refer to another document in order to correctly perform the adjustments.

6. An unconditional statement of compliance with the appropriate model year California regulations; for example, "This engine conforms to 1996 California regulations for heavy-duty off-road diesel cycle engines as applicable."

7. Total engine displacement (in cubic centimeters, liters, or cubic inches) and engine family identification.

(F)1. The manufacturer of any engine certified with a clean fuel (i.e., low-sulfur diesel fuel) shall at the time of engine manufacture, affix a permanent legible label specifying the appropriate operating fuel(s).

2. The label shall be located immediately adjacent to each fuel tank filler inlet and outside of any filler inlet compartment. It shall be located so that it is readily visible to any person introducing fuel to such filler inlet; Provided, however, that the



Executive Officer shall upon application from an engine manufacturer, approve other label locations that achieve the purpose of this paragraph. If the engine is manufactured separately from the equipment, the label shall be affixed to the engine and located so that it is readily visible. Such labels shall be in English and in block letters, which shall be of a color that contrasts with their background.

(2) For 2000 and later Tier 1, Tier 2, and Tier 3 off-road compression-ignition engines, the label content and location must comply with the requirements in Section 89.110 of the 2000 and Later Test Procedures.

(3) For 2008 and Later Tier 4 off-road compression-ignition engines, the label content and location must comply with the requirements in Section 1039.135 of the 2008 and Later test Procedures.

(d) The provisions of these specifications shall not prevent a manufacturer from also stating on the label that such engine or equipment conforms to any applicable federal emission standards for new engines, or any other information that such manufacturer deems necessary for, or useful to, the proper operation and satisfactory maintenance of the equipment or engine.

(e) As used in these specifications, readily visible to the average person shall mean that the label shall be readable from a distance of eighteen inches (46 centimeters) without any obstructions from equipment or engine parts (including all manufacturer available optional equipment) except for flexible parts (e.g., vacuum hoses, ignition wires) that can be moved out of the way without disconnection. Alternatively, information required by these specifications to be printed on the label shall be no smaller than 8 point type size provided that no equipment or engine parts (including all manufacturer available optional equipment), except for flexible parts, obstruct the label.

(f) The labels and any adhesives used shall be designed to withstand, for the engine's or equipment's total expected life, typical equipment environmental conditions in the area where the label is attached. Typical equipment environmental conditions shall include, but are not limited to, exposure to engine fuels, lubricants and coolants (e.g., diesel fuel, motor oil, water, ethylene glycol). The manufacturer shall submit, with its certification application, a statement attesting that its labels comply with these requirements.

(g) The manufacturer shall obtain approval from the Executive Officer for all label formats and locations prior to use. Approval of the specific maintenance settings is not required; however, the format for all such settings and tolerances, if any, is subject to review. If the Executive Officer finds that the information on the label is vague or subject to misinterpretation, or that the location does not comply with these specifications, he or she may require that the label or its location be modified accordingly.

(h) Samples of all actual labels used within an engine family shall be submitted to the Executive Officer within thirty days after the start of production.

(i) The Executive Officer may approve alternate label locations or may, upon request, waive or modify the label content requirements provided that the intent of these specifications is met.

(j) The manufacturer of any engine shall furnish to the Executive Officer, at the beginning of the model year, any engine identification number coding system which identifies whether such engine(s) are covered by an Executive Order.

(k) If the Executive Officer finds any engine (or equipment) manufacturer using labels which are different from those approved or which do not substantially comply with the readability or durability requirements set forth in these specifications, the manufacturer shall be subject to being enjoined from any further sales of such products in the State of California pursuant to Section 43017 of the Health and Safety Code. Prior to seeking to enjoin a manufacturer, the Executive Officer shall consider any information provided by the manufacturer.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104 and 43105, Health and Safety Code.

Amend Title 13, California Code of Regulations, § 2424, to read:

**§ 2424. Emission Control Labels — 1996 and Later Off-Road Compression-Ignition Engines.**

(a) ~~Purpose.~~ *Purpose.* The Air Resources Board recognizes that certain emissions-critical or emissions-related parts must be properly identified and maintained in order for engines to meet the applicable emission standards. The purpose of these specifications is to require engine manufacturers to affix a label (or labels) on each production engine (or equipment) to provide the engine or equipment owner and service mechanic with information necessary for the proper maintenance of these parts in customer use. For engines used in auxiliary power systems which, in turn, are used to comply with the diesel-fueled commercial vehicle idling requirements of title 13, CCR, section 2485(c)(3)(A), additional labeling requirements for the engine or equipment manufacturers apply, as set forth in section 35.B.4 of the "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles," as incorporated by reference in title 13, CCR, section 1956.8(b).

(b) through (k) [No Change.]

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104 and 43105, Health and Safety Code.

**PART 5**

**FINAL REGULATION ORDER**

**Tier 4 Off-Road Compression-Ignition Engines**

**Title 13**

**California Code of Regulations**

**Sections 2421, 2423, 2424, 2425, 2425.1, 2426, 2427**

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## § 2424. Emission Control Labels — 1996 and Later Off-Road Compression-Ignition Engines.

(a) ~~Purpose~~ Purpose. The Air Resources Board recognizes that certain emissions-critical or emissions-related parts must be properly identified and maintained in order for engines to meet the applicable emission standards. The purpose of these specifications is to require engine manufacturers to affix a label (or labels) on each production engine (or equipment) to provide the engine or equipment owner and service mechanic with information necessary for the proper maintenance of these parts in customer use.

(b) ~~Applicability~~ Applicability.

(1) These specifications shall apply to 1996-1999 model year heavy-duty off-road compression-ignition engines, which have been certified to the applicable emission standards pursuant to Health and Safety Code Section 43013.

(2) These specifications shall apply to 2000 and later model year compression-ignition engines, which have been certified to the applicable emission standards pursuant to Health and Safety Code Section 43013.

(3) Engine manufacturers who have certified such engines shall be responsible for complying with these specifications.

(c) ~~Label Content and Location~~ Label Content and Location.

(1) For 1996-1999 heavy-duty off-road compression-ignition engines:

(A) A tune-up label shall be permanently attached to the engine block or other major component in such a way that it will be readily visible after installation of the engine in the equipment. If the equipment obscures the label on the engine, the equipment manufacturer shall attach a supplemental label such that it is readily visible.

(B) In selecting an acceptable location, the manufacturer shall consider the possibility of accidental damage (e.g., possibility of tools or sharp instruments coming in contact with the label). Each label shall be affixed in such a manner that it cannot be removed without destroying or defacing the label, and shall not be affixed to any part which is likely to be replaced during the equipment's useful life. The label(s) shall not be affixed to any component which is easily detached from the engine.

(C) In addition, an engine serial number shall be stamped on the engine block or stamped on a metal label riveted to the engine block. Engine manufacturers shall keep records such that the engine serial number can easily be used to determine if an engine was certified for the applicable model year.

(D) The label shall be in the English language and use block letters and numerals which shall be of a color that contrasts with the background of the label.

(E) The label shall contain the following information:

1. The label heading shall read:

“Important Engine Information.”

2. Full corporate name and trademark of the manufacturer.

3. “This (specify equipment or engine, as applicable) is certified to operate on (specify operating fuel(s)).”

4. ~~Identification of the Exhaust Emission Control System~~ Identification of the Exhaust Emission Control System. Abbreviations may be used and shall conform to the nomenclature and abbreviations found in the Society of Automotive Engineers document J1930 which is incorporated by reference herein [in Section 1977, Title 13, CCR], titled “Diagnostic Acronyms, Terms, and Definitions for Electrical/Electronic Systems.”

5. The specifications and adjustments recommended by the manufacturer, including, if applicable: initial injection timing, and fuel rate (in mm<sup>3</sup>/stroke) at advertised horsepower. These specifications shall indicate the proper transmission position, (if applicable), during tune-up and what accessories, if any, should be in operation, and what systems, if any (e.g., vacuum advance, air pump), should be disconnected during the tune-up. If the manufacturer does not recommend adjustment of the foregoing specifications, the manufacturer shall include in lieu of the “specifications” the single statement “No other adjustments needed.” For all engines, the instructions for tune-up adjustments shall be sufficiently clear on the label to preclude the need for a mechanic or equipment owner to refer to another document in order to correctly perform the adjustments.

6. An unconditional statement of compliance with the appropriate model year California regulations; for example, “This engine conforms to 1996 California regulations for heavy-duty off-road diesel cycle engines as applicable.”

7. Total engine displacement (in cubic centimeters, liters, or cubic inches) and engine family identification.

(F)1. The manufacturer of any engine certified with a clean fuel (i.e., low-sulfur diesel fuel) shall at the time of engine manufacture, affix a permanent legible label specifying the appropriate operating fuel(s).

2. The label shall be located immediately adjacent to each fuel tank filler inlet and outside of any filler inlet compartment. It shall be located so that it is readily visible to any person introducing fuel to such filler inlet; Provided, however, that the Executive Officer shall upon application from an engine manufacturer, approve other label locations that achieve the purpose of this paragraph. If the engine is manufactured separately from the equipment, the label shall be affixed to the engine and located so that it is readily visible. Such labels shall be in English and in block letters, which shall be of a color that contrasts with their background.

(2) For 2000 and later Tier 1, Tier 2, and Tier 3 off-road compression-ignition engines, the label content and location must comply with the requirements in Section 89.110 of the 2000-~~and Later~~ Plus Limited Test Procedures.

(3) For 2008 and Later Tier 4 off-road compression-ignition engines, the label content and location must comply with the requirements in Section 1039.135 of the 2008-2010 Test Procedures or Part I-D of the 2011 and Later test Procedures, as applicable.

\* \* \* \* \*

(l) An emission control information label shall not be altered or removed from an engine, subject to civil penalty under State law, except that a dealer or distributor may remove an incorrect label, prior to the transfer of title of the engine to an ultimate purchaser, and replace the incorrect label with the correct label supplied by the certifying manufacturer or an authorized agent. For the purpose of this section, an incorrect label means an emission control information label that was affixed to an engine in good faith by the certifying manufacturer or authorized agent, but which fails to accurately describe the engine's emission performance as required under this Article due to unintentional or clerical error. In this context, good faith means an honest intent to act without seeking to gain an unfair advantage or to circumvent the regulations. Notwithstanding, an emission control label may be removed and replaced according to the labeling provisions for rebuilt engines in §2423(l). For new replacement engines manufactured in accordance with the provisions of §2423(j), a dealer or distributor may affix supplemental labels, prior to the transfer of title of the engine to an ultimate purchaser, as allowed in §2423(j)(1). Other provisions in §1068.101(b)(7) of the 2011 and Later Test Procedures, Part I-E, may also apply.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104 and 43105, Health and Safety Code.



**§ 2425. Defects Warranty Requirements for 1996 and Later Off-Road Compression-Ignition Engines.**

(a) *Applicability.* This section shall apply to new 1996-1999 model year heavy-duty off-road compression-ignition engines and new 2000 and later model year compression-ignition engines. The warranty period shall begin on the date the engine or equipment is delivered to an ultimate purchaser. The use of alternative fuels shall not void the warranties on any engine certified to use such fuel.

(b) *General Emissions Warranty Coverage.* The manufacturer of each off-road compression-ignition engine shall warrant to the ultimate purchaser and each subsequent purchaser that the engine is:

(1) Designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board pursuant to its authority in Chapters 1 and 2, Part 5, Division 26 of the Health and Safety Code; and

(2) Free from defects in materials and workmanship which cause the failure of a warranted part to be identical in all material respects to the part as described in the engine manufacturer's application for certification for a period of five years or 3,000 hours of operation, whichever occurs first, for all engines rated at 19kW and greater, except as noted below. In the absence of a device to measure hours of use, the engine shall be warranted for a period of five years. For all engines rated less than 19kW, and for constant-speed engines rated under 37kW with rated speeds higher than or equal to 3,000 rpm, the period of two years or 1,500 hours of operation, whichever occurs first, shall apply. In the absence of a device to measure hours of use, the engine shall be warranted for a period of two years.

(c) The warranty on emissions-related parts shall be interpreted as follows:

(1) Any warranted part which is not scheduled for replacement as required maintenance in the written instructions required by Subsection (e) shall be warranted for the warranty period defined in Subsection (b)(2). If any such part fails during the period of warranty coverage, it shall be repaired or replaced by the engine manufacturer according to Subsection (4) below. Any such part repaired or replaced under the warranty shall be warranted for the remaining warranty period.

(2) Any warranted part which is scheduled only for regular inspection in the written instructions required by Subsection (e) shall be warranted for the warranty period defined in Subsection (b)(2). A statement in such written instructions to the effect of "repair or replace as necessary" shall not reduce the period of warranty coverage. Any such part repaired or replaced under warranty shall be warranted for the remaining warranty period.

(3) Any warranted part which is scheduled for replacement as required maintenance in the written instructions required in Subsection (e) shall be warranted for

the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part shall be repaired or replaced by the engine manufacturer according to Subsection (4) below. Any such part repaired or replaced under warranty shall be warranted for the remainder of the period prior to the first scheduled replacement point for the part.

(4) Repair or replacement of any warranted part under the warranty provisions of this article shall be performed at no charge to the owner at a warranty station.

(5) Notwithstanding the provisions of Subsection (4) above, warranty services or repairs shall be provided at all manufacturer distribution centers that are franchised to service the subject engines.

(6) The owner shall not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective, provided that such diagnostic work is performed at a warranty station.

(7) The engine manufacturer shall be liable for damages to other engine components proximately caused by a failure under warranty of any warranted part.

(8) Throughout the engine's warranty period defined in Subsection (b)(2), the engine manufacturer shall maintain a supply of warranted parts sufficient to meet the expected demand for such parts.

(9) Any replacement part, as defined in Section 1900(b)(13), Title 13, may be used in the performance of any maintenance or repairs and must be provided without charge to the owner. It is not necessary for replacement parts to be the same brand or by the same manufacturer as the original part sold with the engine. Such use shall not reduce the warranty obligations of the engine manufacturer.

(10) Add-on or modified parts, as defined in Section 1900(b)(1) and (b)(10), Title 13, that are not exempted by the Air Resources Board may not be used. The use of any non-exempted add-on or modified parts shall be grounds for disallowing a warranty claim made in accordance with this article. The engine manufacturer shall not be liable under this article to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.

(11) The Executive Officer may request and, in such case, the engine manufacturer shall provide, any documents which describe that manufacturer's warranty procedures or policies.

(d) Each manufacturer shall include a copy of the following emission warranty parts list with each new engine, using those portions of the list applicable to the engine.

- (1) Fuel Metering System
  - (A) Fuel injection system.

- (B) Air/fuel ratio feedback and control system.
- (C) Cold start enrichment system.
- (2) Air Induction System
  - (A) Controlled hot air intake system.
  - (B) Intake manifold.
  - (C) Heat Riser Valve and Assembly.
  - (D) Turbocharger/Supercharger Systems.
  - (E) Charge Air Cooling Systems.
- (3) Exhaust Gas Recirculation (EGR) System
  - (A) EGR valve body, and carburetor spacer if applicable.
  - (B) EGR rate feedback and control system.
- (4) Air injection System
  - (A) Air pump or pulse valve.
  - (B) Valves affecting distribution of flow.
  - (C) Distribution manifold.
- (5) Catalyst or Thermal Reactor System
  - (A) Catalytic converter.
  - (B) Thermal reactor.
  - (C) Exhaust manifold.
- (6) Particulate Controls
  - (A) Traps, filters, precipitators, and any other device used to capture particulate emissions.
  - (B) Regenerators, oxidizers, fuel additive devices, and any other device used to regenerate or aid in the regeneration of the particulate control device.
  - (C) Control Device Enclosures and Manifolding.
  - (D) Smoke Puff Limiters.
- (7) Advanced Oxides of Nitrogen (NOx) Controls
  - (A) NOx Adsorbers
  - (B) Lean NOx Catalysts
  - (C) Selective Catalyst Reduction
  - (D) Reductant (urea/fuel) containers/dispensing systems
- (78) Positive Crankcase Ventilation (PCV) System.
  - (A) PCV Valve.
  - (B) Oil Filler Cap.
- (89) Miscellaneous items Used in Above Systems
  - (A) Vacuum, temperature, and time sensitive valves and switches.
  - (B) Electronic control units, sensors, solenoids, and wiring harnesses.
  - (C) Hoses, belts, connectors, assemblies, clamps, fittings, tubing, sealing gaskets or devices, and mounting hardware.
  - (D) Pulleys, belts and idlers.
  - (E) Emission Control Information Labels.

Amend Title 13, California Code of Regulations, § 2425, to read:

**§ 2425. Defects Warranty Requirements for 1996 and Later Off-Road Compression-Ignition Engines.**

(a) through (d) [No Change.]

(e) Each manufacturer shall furnish with each new engine written instructions for the maintenance and use of the engine by the owner. The instructions shall be consistent with this article and applicable regulations contained herein. In addition, for engines less than 19 kilowatts, each manufacturer shall furnish with each new engine a written statement as follows: "In order to operate in California, a diesel-fueled engine in an auxiliary power system used to comply with the Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling requirements of the California Code of Regulations, must have one of the following apply: (1) be equipped with a verified Level 3 in-use strategy for particulate matter control, (2) have its exhaust routed directly into the vehicle's exhaust pipe, upstream of the diesel particulate matter aftertreatment device, or (3) use an alternate particulate matter control strategy with prior Executive Officer approval. (For more details, please see the California Code of Regulations, title 13, section 2485(c)(3)(A).)"

(f) through (g) [No Change.]

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102, 43104 and 43105, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102 and 43205.5, Health and Safety Code.

(F) Any other part with the primary purpose of reducing emissions or that can increase emissions during failure without significantly degrading engine performance.

(e) Each manufacturer shall furnish with each new engine written instructions for the maintenance and use of the engine by the owner. The instructions shall be consistent with this article and applicable regulations contained herein.

(f) Each manufacturer shall submit the documents required by Subsections (d) and (e) with the manufacturer's preliminary application for engine certification for approval by the Executive Officer. Approval by the Executive Officer of the documents required by Subsections (d) and (e) shall be a condition of certification. The Executive Officer shall approve or disapprove the documents required by Subsections (d) and (e) within 90 days of the date such documents are received from the manufacturer. (Title 17, California Code of Regulations (CCR), Section 60030.) Any disapproval shall be accompanied by a statement of the reasons therefore. In the event of disapproval, the manufacturer may file for an adjudicative hearing pursuant to Title 17, California Code of Regulations Division 3, Chapter 1, Subchapter 1.25, Articles 1 and 2, to review the decision of the Executive Officer.

(g) In the application, each manufacturer shall include a statement concerning proper maintenance of the engine to maximize emissions performance. The statement shall include, but not be limited to, information on air filter care and replacement schedule, proper fueling and fuel mixing, engine maintenance, and a maintenance schedule to ensure that the owner returns to a servicing center to check for deposits, debris build-up, etc.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 43104 and 43105, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102 and 43205.5, Health and Safety Code.

**PART 5**

**FINAL REGULATION ORDER**

**Tier 4 Off-Road Compression-Ignition Engines**

**Title 13**

**California Code of Regulations**

**Sections 2421, 2423, 2424, 2425, 2425.1, 2426, 2427**

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**§ 2425. Defects Warranty Requirements for 1996 and Later Off-Road Compression-Ignition Engines.**

(a) ~~Applicability~~ Applicability. This section shall apply to new 1996-1999 model year heavy-duty off-road compression-ignition engines and new 2000 and later model year compression-ignition engines. For 2011 and later model year compression-ignition engines the requirements in §1039.120 and §1039.125 of the 2011 and Later Test Procedures, Part I-D, shall also apply. The warranty period shall begin on the date the engine or equipment is delivered to an ultimate purchaser. The use of alternative fuels shall not void the warranties on any engine certified to use such fuel.

(b) ~~General Emissions Warranty Coverage~~ General Emissions Warranty Coverage. The manufacturer of each off-road compression-ignition engine shall warrant to the ultimate purchaser and each subsequent purchaser that the engine is:

\* \* \* \* \*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 43104 and 43105, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102 and 43205.5, Health and Safety Code.

**§ 2425.1 Defect Investigation and Reporting Requirements.**

(a) ~~Applicability~~ Applicability. This section shall apply to new off-road compression-ignition engines subject to the standards in Section 2423 (b)(1)(B) and the incorporated 2008-2010 or 2011 and Later Test Procedures as applicable, and shall address defects for any of the emission-related components, or systems containing the components listed in Section 2425(d)(1).

(b) ~~General requirements~~ General requirements. Engine manufacturers shall investigate their engines that have been introduced into commerce in California for incorrect, improperly installed, or otherwise defective emission-related components or systems, and shall submit a report to the ARB based on federal triggering thresholds documenting these activities, as required, and their findings. If available, California-specific incidence rates shall also be included in this report.

(c) ~~Investigation and reporting procedures~~ Investigation and reporting procedures. Engine manufacturers shall perform the investigation and reporting procedures specified in Part 1068, Subpart F of the 2008-2010 Test Procedures or Part I-E of the 2011 and Later Test Procedures as applicable.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 43104 and 43105, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102 and 43205.5, Health and Safety Code.



**§ 2426. Emission Control System Warranty Statement.**

(a) Each manufacturer shall furnish a copy of the following statement with each new 1996-1999 heavy-duty off-road compression-ignition engine, using those portions of the statement applicable to the engine.

**CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT**

**YOUR WARRANTY RIGHTS AND OBLIGATIONS**

The **California Air Resources Board** (and manufacturer's name, optional) is pleased to explain the **emission control system warranty** on your **(year)** engine. In California, new heavy-duty off-road engines must be designed, built, and equipped to meet the State's stringent anti-smog standards. (Manufacturer's name) must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel-injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, (manufacturer's name) will repair your heavy-duty off-road engine at no cost to you including diagnosis, parts, and labor.

**MANUFACTURER'S WARRANTY COVERAGE:**

The **(year)** and later heavy-duty off-road engines are warranted for **(warranty period)**. If any emission-related part on your engine is defective, the part will be repaired or replaced by (manufacturer's name).

**OWNER'S WARRANTY RESPONSIBILITIES:**

- As the heavy-duty off-road engine owner, you are responsible for the performance of the **required maintenance listed in your owner's manual**. (Manufacturer's name) recommends that you retain all receipts covering maintenance on your heavy-duty off-road engine, but (manufacturer's name) cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.
- As the heavy-duty off-road engine owner, you should however be aware that (manufacturer's name) may deny you warranty coverage if your heavy-duty off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

- Your engine is designed to operate on (fuel) only. Use of any other fuel may result in your engine no longer operating in compliance with California's emissions requirements.
- You are responsible for initiating the warranty process. The ARB suggests that you present your heavy-duty off-road engine to a (manufacturer's name) dealer as soon as a problem exists. The warranty repairs should be completed by the dealer as expeditiously as possible.

If you have any questions regarding your warranty rights and responsibilities, you should contact (Insert chosen manufacturer's contact) at **1-XXX-XXX-XXXX**.

(b) For 1996-1999 model year heavy-duty off-road compression-ignition engines, each manufacturer shall furnish with each new engine a warranty statement which generally describes the obligations and rights of the engine manufacturer and owner under this article. Engine manufacturers shall also include in the warranty statement a phone number the customer may use to obtain their nearest franchised service center.

(c) Each manufacturer shall submit the documents required by Subsections (a) and (b) with the manufacturer's preliminary application for new engine certification for approval by the Executive Officer. The Executive Officer may reject or require modification of the documents to the extent the submitted documents do not satisfy the requirements of Subsections (a) and (b). Approval by the Executive Officer of the documents required by Subsections (a) and (b) shall be a condition of certification. The Executive Officer shall approve or disapprove the documents required by Subsections (a) and (b) within 90 days of the date such documents are received from the manufacturer. Any disapproval shall be accompanied by a statement of the reasons therefore. In the event of disapproval, the manufacturer may petition the Board to review the decision of the Executive Officer.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102 and 43205.5, Health and Safety Code.

**PART 5**

**FINAL REGULATION ORDER**

**Tier 4 Off-Road Compression-Ignition Engines**

**Title 13**

**California Code of Regulations**

**Sections 2421, 2423, 2424, 2425, 2425.1, 2426, 2427**

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## § 2426. Emission Control System Warranty Statement.

(a) Each manufacturer shall furnish a copy of the following statement with each new 1996-1999 model year heavy-duty off-road compression-ignition engines and each new 2011 and later model year compression-ignition engine, using those portions of the statement applicable to the engine.

### CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT

#### YOUR WARRANTY RIGHTS AND OBLIGATIONS

The **California Air Resources Board** (and manufacturer's name, optional) is pleased to explain the **emission control system warranty** on your **(years)** engine. In California, new heavy-duty off-road engines must be designed, built, and equipped to meet the State's stringent anti-smog standards. (Manufacturer's name) must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel-injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, (manufacturer's name) will repair your heavy-duty off-road engine at no cost to you including diagnosis, parts, and labor.

#### MANUFACTURER'S WARRANTY COVERAGE:

The **(year)** and later heavy-duty off-road engines are warranted for **(warranty period)**. If any emission-related part on your engine is defective, the part will be repaired or replaced by (manufacturer's name).

#### OWNER'S WARRANTY RESPONSIBILITIES:

- As the ~~heavy-duty~~ off-road engine owner, you are responsible for the performance of the **required maintenance listed in your owner's manual**. (Manufacturer's name) recommends that you retain all receipts covering maintenance on your ~~heavy-duty~~ off-road engine, but (manufacturer's name) cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.
- As the ~~heavy-duty~~ off-road engine owner, you should however be aware that (manufacturer's name) may deny you warranty coverage if your ~~heavy-duty~~ off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

- Your engine is designed to operate on (fuel) only. Use of any other fuel may result in your engine no longer operating in compliance with California's emissions requirements.
- You are responsible for initiating the warranty process. The ARB suggests that you present your ~~heavy-duty~~ off-road engine to a (manufacturer's name) dealer as soon as a problem exists. The warranty repairs should be completed by the dealer as expeditiously as possible.

If you have any questions regarding your warranty rights and responsibilities, you should contact (Insert chosen manufacturer's contact) at **1-XXX-XXX-XXXX**.

(b) For 1996-1999 model year heavy-duty off-road compression-ignition engines and 2011 and later model year compression-ignition engines, each manufacturer shall furnish with each new engine a warranty statement which generally describes the obligations and rights of the engine manufacturer and owner under this article. Engine manufacturers shall also include in the warranty statement a phone number the customer may use to obtain their nearest franchised service center.

\* \* \* \* \*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102 and 43205.5, Health and Safety Code.

**§ 2427. Production Engine Testing, Selection, Evaluation, and Enforcement Action.**

*(a) Compliance Test Procedures.*

(1) These procedures are applicable to the 1996-1999 model year heavy-duty off-road compression-ignition engine family groups (as defined in Sections 3 and 11 of the 1996-1999 Heavy-Duty Test Procedures) or any subgroups within an engine family group selected for compliance testing pursuant to this section.

(2) The Executive Officer may, with respect to any new engine family group or subgroup being sold, offered for sale, or manufactured for sale in California, order an engine manufacturer to make available for compliance testing and/or inspection a reasonable number of engines, and may direct that the engines be delivered to the state board at the Haagen-Smit Laboratory, 9528 Telstar Avenue, El Monte, California or where specified by the Executive Officer. The Executive Officer may also, with respect to any new engine family group or subgroup being sold, offered for sale, or manufactured for sale in California, have a manufacturer compliance test and/or inspect a reasonable number of engines at the manufacturer's facility under the supervision of an ARB Enforcement Officer. Engines shall be representatively selected from sources specified by the Executive Officer according to a method approved by him/her, which insofar as practical shall exclude engines which would result in an unreasonable disruption of the manufacturer's distribution system. To the extent practical, the Executive Officer shall test a representative configuration (as defined in the 1996-1999 Heavy-Duty Test Procedures) from the engine family group in order to minimize manufacturers' expense and inconvenience in testing different engine configurations.

A subgroup of an engine family group may be selected for compliance testing only if the Executive Officer has reason to believe that the emissions characteristics of that subgroup are substantially in excess of the evaluation of the emissions of the engine family group as a whole.

(3) For all 1996-1999 heavy-duty off-road compression-ignition engines selected for compliance testing, the selection and testing of engines and the evaluation of data shall be made in accordance with the procedures set forth herein.

(4) For manufacturers that have more than one engine family group, the Air Resources Board or its designated laboratory shall procure and test at the manufacturer's expense no more than one engine family group per year, if compliance testing is required.

Notwithstanding the above, if a manufacturer fails to demonstrate compliance with the emission standards after one engine family group has been tested, the ARB or its designated laboratory may test additional engine family groups at the manufacturer's expense, until compliance is demonstrated on one engine family group or all of a manufacturer's engine family groups have been tested. However, the ARB may

conduct engine enforcement testing pursuant to the engine test procedures specified in Section 2423, at its own expense. In such an instance, the Executive Officer shall order testing only in those cases where evidence such as quality audit test data or in-use test data indicate that engines may not be in compliance.

(5) All testing shall be conducted in accordance with the applicable model year certification emission test procedures. Break-in before testing may be performed on test engines to the same extent it is performed on assembly-line quality audit testing engines (See sSubsection (b)). No break-in or modifications, adjustments, or special preparation or maintenance will be allowed on engines chosen for compliance testing without the written consent of the Executive Officer. Such consent shall not be unreasonably withheld where such adjustment or alteration is required to render the engine testable and reasonably operative.

(6) If the manufacturer elects to specify a different break-in or adjustments, they will be performed by the manufacturer under the supervision of ARB personnel.

(7) Correction of damage or maladjustment which may reasonably be found to have resulted from shipment of the engine is permitted only after testing the engine, except where 100 percent of the manufacturer's production is given that inspection or maintenance by the manufacturer's own personnel. Exceptions are allowed in the cases where the damage results in the engine being unsafe to operate, inoperable, or unable to complete the emission test. Additionally, an exception is allowed if the damage results in engine performance deficiencies which would be obvious in customer service and which would cause the customer to seek repair of the engine. The manufacturer may request that the engine be repaired from shipping damage, and be retested. If the Executive Officer concurs, the engine may be retested, and the original test results may be replaced by the after-repair test results.

(8) Engines shall be representatively chosen from the selected engine family group or subgroup. Manufacturers shall indicate which sampling plan (as described in paragraphs (9) and (10), below) they prefer to use prior to the start of testing. Once testing has begun, manufacturers may not switch to the other sampling plan; the generated test results will be final. Each chosen engine shall be tested according to the 1996-1999 Heavy-Duty Test Procedures to determine its emissions. Unique specialty hardware and personnel normally necessary to prepare the engine for the performance of the test as set forth in the applicable test procedures shall be supplied by the manufacturer within seven days after request. Failure to supply this unique specialty hardware or personnel may not be used by the manufacturer as a cause for invalidation of the subsequent tests.

*(9) Primary Sampling Plan.*

(A) Engines shall be tested in groups of five until a "Pass" or "Fail" decision is reached for each pollutant independently for the engine family group or subgroup in accordance with the following table:



Number of Engines Tested	Decide "Fail" If "U" is greater than or equal to	Decide "Pass" If "U" is less than or equal to
5	2.18	-0.13
10	2.11	0.51
15	2.18	0.88
20	2.29	1.16

where:

$$U = \frac{\sum_{i=1}^n 3(x_i - \Phi_0)}{\sum_{i=1}^n (3(x_i - \Phi_0)^2)^{0.5}}$$

$x_i$  = the projected emissions of one pollutant for the  $i$ th engine tested.

$\Phi_0$  = the applicable model year emission standard for that pollutant.

$n$  = the number of engines tested.

(B) The Executive Officer shall find that a group of engines has failed the compliance testing pursuant to the above table if he or she finds that the average emissions of the engines within the selected engine family group or subgroup exceed the applicable model year new engine emission standard for at least one pollutant.

(C) If no decision can be reached after 20 engines have been tested, the Executive Officer shall not make a "Fail" decision for the selected engine family group or subgroup on the basis of these 20 tests alone. Under these circumstances the Executive Officer shall elect to test 10 additional engines. If the average emissions from the 30 engines tested exceed any one of the exhaust emission standards for which a "Pass" decision has not been previously made, the Executive Officer shall render a "Fail" decision.

(10) *Alternate Sampling Plan for Low Volume Engine Family Groups.*

Any manufacturer subject to new engine compliance testing on an engine family group with a sales volume of less than 2000 engines per year may use the alternative sampling and testing schedule below.

<i>Number of Engines Tested</i>	<i>Decide "Fail" If number of failed engines is greater than or equal to</i>	<i>Decide "Pass" If number of failed engines is less than or equal to</i>
1	No Failure Decision	No Passing Decision
2	No Failure Decision	0
3	3	0
4	4	1
5	4	1
6	5	2
7	5	2
8	6	3
9	6	4
10	6	5

(11) If the Executive Officer determines, in accordance with the procedures set forth herein, that an engine family group, engine family, or any subgroup within an engine family exceeds the emission standards for one or more pollutants, the manufacturer may be subject to being enjoined from any further sales of such products in the State of California pursuant to Section 43017 of the Health and Safety Code. Prior to seeking to enjoin a manufacturer, the Executive Officer shall consider quality audit test results, if any, and any additional test data or other information provided by the manufacturers.

(12) Engines selected for inspection shall be checked to verify the presence of those emissions-related components specified in the manufacturer's application for certification, and for the accuracy of any adjustments, part numbers and labels specified in that application. If any engine selected for inspection fails to conform to any applicable law in Part 5 (commencing with Section 43000) of Division 26 of the Health and Safety Code, or any regulation adopted by the state board pursuant thereto, other than an emissions standard applied to new engines to determine "certification" as specified in Chapter 9, the Executive Officer shall notify the manufacturer and may seek to enjoin the manufacturer from any further sales of such products in the State of California pursuant to Section 43017 of the Health and Safety Code. Prior to seeking to enjoin a manufacturer, the Executive Officer shall consider any information provided by the manufacturer.

*(b) Quality-Audit Test Procedures.*

(1) The 1996-1999 model year heavy-duty off-road compression-ignition engines certified for sale in California shall be subject to the Quality-Audit requirements specified herein. Each manufacturer shall use the quality-audit test procedures specified herein.

(2) These procedures specify the quality-audit test procedures in conjunction with the 1996-1999 Heavy-Duty Test Procedures. An engine is in compliance with these

quality-audit standards and test procedures only when all portions of these quality-audit test procedures are fulfilled.

(3) Air Resources Board (ARB) personnel and mobile laboratories shall have access to engine or equipment assembly plants, distribution facilities, and test facilities for the purpose of engine selection, testing, and observation. Scheduling of access shall be arranged with the designated manufacturer's representative and shall not unreasonably disturb normal operations (See Section 6 of the 1996-1999 Heavy-Duty Test Procedures).

*(4) Applicability.*

These procedures shall apply to all certified 1996-1999 model year heavy-duty off-road compression-ignition engine family groups.

If a manufacturer cannot provide actual California sales data, it shall provide its total production and an estimate of California sales. The manufacturer shall also provide supporting material for its estimate.

*(5) Engine Sample Selection.*

For each family group with California sales volumes of 150 units or more per year, the manufacturer shall select for quality audit testing a representative sample of three engines or one percent of production, whichever is greater, from the highest sales volume engine family within the entire engine family group. For engine family groups with California sales volumes of less than 150 units per year, no testing shall be required unless requested by the Executive Officer based upon information and belief that such engine family groups are in noncompliance with applicable regulations. Each selected engine for quality-audit testing must pass the inspection test, by being equipped with the appropriate emission control systems certified by the ARB. The procedure for selecting engines must be submitted to the Chief, Mobile Source Division, 9528 Telstar Avenue, El Monte, CA, 91731, prior to the start of production for the 1996 model year.

*(6) Engine Preparation and Preconditioning.*

(A) The engine shall be tested after the manufacturer has determined that the emissions have stabilized. Engine manufacturers shall report the break-in schedule used on each test engine.

The manufacturer shall submit to the Executive Officer the schedule for hours of use accumulation or engine run-in and any changes to the schedule with each quarterly report.

(B) If an engine is shipped to a remote facility for quality-audit testing, and adjustment or repair is necessary because of such shipment, the manufacturer shall

perform the necessary adjustments or repairs only after the initial test of the engine. Exceptions are allowed in the cases where the damage results in the engine being unsafe to operate, inoperable, or unable to complete the emission test. Additionally, an exception is allowed if the damage results in engine performance deficiencies which would be obvious in customer service and which would cause the customer to seek repair of the engine.

Manufacturers shall report to the Executive Officer in the quarterly report, all adjustments or repairs performed on engines prior to each test. In the event a retest is performed, an application may be made to the Executive Officer, within ten days of the emission test, for permission to substitute the after-repair test results for the original test results. When requested by the manufacturer, the Executive Officer will either affirm or deny the application within ten working days from receipt of the request.

(C) If a manufacturer determines that the emission test results of an engine are invalid, the engine must be retested. Emission results from all tests shall be reported. The manufacturer shall include a detailed report on the reasons for each invalidated test in the quarterly report.

*(7) Quality-Audit Engine Selection Criteria.*

(A) Engines shall be representatively selected.

(B) At the end of each calendar quarter, all of the data accumulated during the quarter shall be reported to the Executive Officer. Upon accumulation of sufficient data, the compliance of the engine family group with the emission standards is determined.

*(8) Standards and Test Procedures; Evaluation.*

The exhaust sampling and analytical procedures shall be those described in the 1996-1999 Heavy-Duty Test Procedures. An engine family group is considered to have failed the quality audit test if the average emissions do not comply with the applicable certification standards. Any corrective action to bring the engines into compliance with the standards must be applied to all engines in the engine family group reasonably expected to be in noncompliance based on the audit data and other relevant information.

*(9) Reports.*

Each engine manufacturer shall submit a report to the ARB within 45 calendar days of the end of each calendar quarter and of the model year. More frequent reports may be required if the Executive Officer invokes this section at the end of each month. Each engine manufacturer shall review the test results of each engine family group at the end of each month.

The quarterly report shall include the following:

(A) The total production and sample size for each engine family group.

(B) A description of each test engine (i.e., date of test, engine family group, engine size, engine identification number, fuel system, engine code or calibration number, and test location).

(C) The break-in schedule used on each test engine.

(D) The exhaust emission data for HC, CO, NO<sub>x</sub> and PM for each test engine.

The data reported shall be rounded to one significant figure beyond the number of significant figures in the applicable standard as follows for all engines:

HC	CO	NO <sub>x</sub>	PM
.XX	.XX	.XX	.XXX

(E) The retest emissions data, as described in paragraph (b)(6)(C) above for any engine failing the initial test, and description of the corrective measures taken, including specific components replaced or adjusted.

(F) A statistical analysis of the quality-audit test results stating:

1. Number of engines tested.
2. Average emissions and standard deviations of the sample for HC, CO, NO<sub>x</sub>, and PM.

(G) All aborted test data and reasons for any aborted tests.

(10) When assembly-line engines exceed an emission standard, as set forth herein, or when data submitted by the manufacturer indicates that assembly-line quality-audit testing is being improperly performed, the manufacturer may be subject to being enjoined from any further sales of such products in the State of California pursuant to Section 43017 of the Health and Safety Code. Prior to seeking to enjoin a manufacturer, the Executive Officer shall consider any information provided by the manufacturer, including any corrective action to the noncomplying engine family group. Enforcement penalties shall be imposed only for egregious violations (e.g., those situations where emissions from a few engines significantly exceed emission standards, or where the number of engines exceeding the emission standards are significant).

(c) *Selective Enforcement Audit.*

(1)(A) The 2000 and later model year Tier 1, Tier 2, and Tier 3 off-road compression-ignition engines certified for sale in California shall be subject to the Selective Enforcement Audit requirements specified in Subpart F of the 2000 ~~and Later~~ Plus Limited Test Procedures.

(B) The 2008 and later model year Tier 4 off-road compression-ignition engines certified for sale in California shall be subject to the Selective Enforcement Audit requirements specified in Subpart E of Part 1068 of the 2008 and Later Test Procedures.

(2) These procedures specify the Selective Enforcement Audit test procedures in conjunction with the 2000 ~~and Later~~Plus Limited Test Procedures and the 2000 and Later Test Procedures. An engine is in compliance with these Selective Enforcement Audit standards and test procedures only when all portions of these Selective Enforcement Audit test procedures are fulfilled.

(3) Air Resources Board (ARB) personnel and mobile laboratories shall have access to engine or equipment assembly plants, distribution facilities, and test facilities for the purpose of engine selection, testing, and observation. Scheduling of access shall be arranged with the designated manufacturer's representative and shall not unreasonably disturb normal operations.

(d) Any manufacturer obtaining certification under this part shall supply to the Executive Officer, upon request, a reasonable number of production engines selected by the Executive Officer which are representative of the engines, emission control systems, fuel systems, and transmissions offered and typical of production models available for sale under the certificate. These engines shall be supplied for testing at such time and place and for such reasonable periods as the Executive Officer may require. Heavy-duty engines supplied under this paragraph may be required to be mounted in chassis and appropriately equipped for operation on a chassis dynamometer.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102, 43104 and 43105, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104 and 43210-43212, Health and Safety Code.

**PART 5**

**FINAL REGULATION ORDER**

**Tier 4 Off-Road Compression-Ignition Engines**

**Title 13**

**California Code of Regulations**

**Sections 2421, 2423, 2424, 2425, 2425.1, 2426, 2427**

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**§ 2427. Production Engine Testing, Selection, Evaluation, and Enforcement Action.**

(a) ~~Compliance Test Procedures~~ Compliance Test Procedures.

\* \* \* \* \*

(9) ~~Primary Sampling Plan~~ Primary Sampling Plan.

\* \* \* \* \*

(10) ~~Alternate Sampling Plan for Low Volume Engine Family Groups~~ Alternate Sampling Plan for Low Volume Engine Family Groups.

\* \* \* \* \*

(b) ~~Quality Audit Test Procedures~~ Quality-Audit Test Procedures.

\* \* \* \* \*

(4) ~~Applicability~~ Applicability.

These procedures shall apply to all certified 1996-1999 model year heavy-duty off-road compression-ignition engine family groups.

If a manufacturer cannot provide actual California sales data, it shall provide its total production and an estimate of California sales. The manufacturer shall also provide supporting material for its estimate.

(5) ~~Engine Sample Selection~~ Engine Sample Selection.

For each family group with California sales volumes of 150 units or more per year, the manufacturer shall select for quality audit testing a representative sample of three engines or one percent of production, whichever is greater, from the highest sales volume engine family within the entire engine family group. For engine family groups with California sales volumes of less than 150 units per year, no testing shall be required unless requested by the Executive Officer based upon information and belief that such engine family groups are in noncompliance with applicable regulations. Each selected engine for quality-audit testing must pass the inspection test, by being equipped with the appropriate emission control systems certified by the ARB. The procedure for selecting engines must be submitted to the Chief, Mobile Source Division, 9528 Telstar Avenue, El Monte, CA, 91731, prior to the start of production for the 1996 model year.

(6) ~~Engine Preparation and Preconditioning~~ Engine Preparation and Preconditioning.

\* \* \* \* \*

(7) ~~Quality-Audit Engine Selection Criteria~~ Quality-Audit Engine Selection Criteria.

(A) Engines shall be representatively selected.

(B) At the end of each calendar quarter, all of the data accumulated during the quarter shall be reported to the Executive Officer. Upon accumulation of sufficient data, the compliance of the engine family group with the emission standards is determined.

(8) ~~Standards and Test Procedures; Evaluation~~ Standards and Test Procedures; Evaluation.

The exhaust sampling and analytical procedures shall be those described in the 1996-1999 Heavy-Duty Test Procedures. An engine family group is considered to have failed the quality audit test if the average emissions do not comply with the applicable certification standards. Any corrective action to bring the engines into compliance with the standards must be applied to all engines in the engine family group reasonably expected to be in noncompliance based on the audit data and other relevant information.

(9) ~~Reports~~ Reports.

\* \* \* \* \*

(c) ~~Selective Enforcement Audit~~ Selective Enforcement Audit.

(1)(A) The 2000 and later model year Tier 1, Tier 2, and Tier 3 off-road compression-ignition engines certified for sale in California shall be subject to the Selective Enforcement Audit requirements specified in Subpart F of the 2000 Plus Limited Test Procedures.

(B) The 2008 and later model year Tier 4 off-road compression-ignition engines certified for sale in California shall be subject to the Selective Enforcement Audit requirements specified in Subpart E of Part 1068 of the 2008-2010 Test Procedures or Part I-E of the 2011 and Later Test Procedures as applicable.

(2) These procedures specify the Selective Enforcement Audit test procedures in conjunction with the 2000 Plus Limited Test Procedures and the 2000 and Later Test Procedures. An engine is in compliance with these Selective Enforcement Audit standards and test procedures only when all portions of these Selective Enforcement Audit test procedures are fulfilled.

(3) Air Resources Board (ARB) personnel and mobile laboratories shall have access to engine or equipment assembly plants, distribution facilities, and test facilities for the purpose of engine selection, testing, and observation. Scheduling of access shall be arranged with the designated manufacturer's representative and shall not unreasonably disturb normal operations.

(d) Any manufacturer obtaining certification under this part shall supply to the Executive Officer, upon request, a reasonable number of production engines selected by the Executive Officer which are representative of the engines, emission control systems, fuel systems, and transmissions offered and typical of production models available for sale under the certificate. These engines shall be supplied for testing at such time and place and for such reasonable periods as the Executive Officer may require. Heavy-duty engines supplied under this paragraph may be required to be mounted in chassis and appropriately equipped for operation on a chassis dynamometer.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102, 43104 and 43105, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104 and 43210-43212, Health and Safety Code.

## FINAL REGULATION ORDER, PART 1

Note: Amendments to the regulations are shown with underline text for additions and ~~strikeout text for deletions~~. Newly adopted regulations are shown without underline as permitted by California Code of Regulations, title 1, section 8. Subsection headings are shown in italics and should be italicized in Barclays California Code of Regulations.

Amend California Code of Regulations, title 13, sections 2430, 2431, 2433, 2434, and 2438 to read:

### **Article 4.5. Off-Road Large Spark-Ignition Engines**

#### **§ 2430. Applicability.**

(a) (1) This article applies to large off-road spark-ignition engines 25 horsepower and greater produced on or after January 1, 2001 and all equipment and vehicles produced on or after January 1, 2001 that use such engines. Beginning January 1, 2007, this article applies to large off-road spark-ignition engines above 19 kilowatt (kW) and all equipment and vehicles that use such engines.

(2) Every new off-road large spark-ignition (LSI) engine that is manufactured for sale, sold, or offered for sale in California, or that is introduced, delivered or imported into California for introduction into commerce and that is subject to any of the standards prescribed in this article and documents incorporated by reference therein, must be certified for use and sale by the manufacturer through the Air Resources Board and covered by an Executive Order, issued pursuant to Chapter 9, Article 4.5, Section 2433.

(3) This article does not apply to engines in vehicles that are subject to requirements of Title 13, California Code of Regulations, Chapter 9, Article 3, Off-Highway Recreational Vehicles and Engines, including any related provisions and guidelines that are applicable to Off-Highway Recreational Vehicles and Engines.

(b) Each part of this article is severable, and in the event that any part of this chapter or article is held to be invalid, the remainder of the article remains in full force and effect.

(c) This article and documents incorporated by reference herein include provisions for emissions certification, labeling requirements, warranty, in-use compliance testing, and production line testing.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150, 43151, 43152, 43153, - 43154, 43205.5, and 43210, 43210.5, 43211 and -43212, Health and Safety Code.

## FINAL REGULATION ORDER, PART 1

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Amend California Code of Regulations, title 13, sections 2430, 2431, 2433, 2434, and 2438 to read:

### **Article 4.5. Off-Road Large Spark-Ignition Engines**

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NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150, 43151, 43152, 43153, 43154, 43205.5, and 43210, 43210.5, 43211 and 43212, Health and Safety Code.

**§ 2431. Definitions.**

**DEFINITIONS**

(a) The definitions in Section 1900 (b), Chapter 1, Title 13 of the California Code of Regulations apply to this Article with the following additions:

(1) to (18) [No Change]

(19) "Family Emission Level or FEL" means an emission level that is declared by the manufacturer to serve for the averaging, banking, and trading program and in lieu of an emission standard for certification. The FEL serves as the engine family's emission standard for emissions compliance efforts. If the manufacturer does not declare an FEL for an engine family, the applicable emissions standard must be treated as that engine family's FEL for the purposes of any provision of this Article. The FEL must be expressed to the same number of decimal places as the applicable emission standard.

(1920) [No Change]

(2021) [No Change]

(2422) [No Change]

(2223) [No Change]

(2324) [No Change]

(2425) [No Change]

(2526) [No Change]

(2627) [No Change]

(2728) "Off-Road Large Spark-ignition Engines" or "LSI Engines" means any engine that produces a gross horsepower 25 and greater horsepower or is designed (e.g., through fueling, engine calibrations, valve timing, engine speed modifications, etc.) to produce 25 and greater horsepower (greater than 19 kilowatts on or after January 1, 2007). If an engine family has models at or above 25 horsepower and models below 25 horsepower, only the models at or above 25 horsepower (greater than 19 kilowatts on or after January 1, 2007) would be considered LSI engines. The engine's operating characteristics are significantly similar to the theoretical Otto combustion cycle with the engine's primary means of controlling power output being to limit the amount of air that is throttled into the combustion chamber of the engine. LSI engines or alternate fuel powered LSI internal combustion engines are designed for powering, but not limited to powering, forklift trucks, sweepers, generators, and

industrial equipment and other miscellaneous applications. All engines and equipment that fall within the scope of the preemption of Section 209(e)(1)(A) of the Federal Clean Air Act, as amended, and as defined by regulation of the Environmental Protection Agency, are specifically excluded from this category.

Specifically excluded from this category are: 1) engines operated on or in any device used exclusively upon stationary rails or tracks; 2) engines used to propel marine vessels; 3) internal combustion engines attached to a foundation at a location for at least 12 months; 4) off-road recreational vehicles and snowmobiles; and 5) stationary or transportable gas turbines for power generation.

~~(2829)~~ [No Change]

~~(2930)~~ [No Change]

~~(3031)~~ [No Change]

~~(3132)~~ [No Change]

~~(3233)~~ [No Change]

~~(3334)~~ [No Change]

~~(3435)~~ [No Change]

~~(3536)~~ [No Change]

~~(3637)~~ [No Change]

~~(3738)~~ [No Change]

~~(3839)~~ [No Change]

~~(3940)~~ [No Change]

~~(4041)~~ [No Change]

~~(4142)~~ [No Change]

~~(4243)~~ [No Change]

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150, 43151, 43152, 43153, - 43154, 43205.5, and 43210, 43210.5, 43211 and 43212, Health and Safety Code.

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Amend California Code of Regulations, title 13, sections 2430, 2431, 2433, 2434, and 2438 to read:

### **Article 4.5. Off-Road Large Spark-Ignition Engines**

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**NOTE:** Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150, 43151, 43152, 43153, 43154, 43205.5, and 43210, 43210.5, 43211 and 43212, Health and Safety Code.



**§ 2433. Exhaust Emission Standards and Test Procedures - Off-Road Large Spark-Ignition Engines.**

(a) This section applies to new off-road large spark-ignition engines produced on or after January 1, 2001. For the purpose of this section, these engines are also referred to as "new off-road LSI engines."

(b) Standards.

(1)(A) Exhaust Emission Standards. Exhaust emissions from off-road large spark-ignition engines manufactured for sale, sold, or offered for sale in California, or that are introduced, delivered or imported into California for introduction into commerce, must not exceed:

Exhaust Emission Standards  
(grams per brake horsepower-hour)  
[grams per kilowatt-hour]<sup>(1)</sup>

<i>Model Year</i>	<i>Engine Displacement</i>	<i>Durability Period</i>	<i>HC + NOx</i>	<i>Carbon Monoxide</i>
2002 and subsequent	≤1.0 liter	1,000 hours or 2 years	9.0 [12.0]	410 [549]
2001 - 2003 <sup>(2),(3)</sup>	> 1.0 liter	N/A	3.0 [4.0]	37.0 [49.6]
2004 - 2006 <sup>(4)</sup>	> 1.0 liter	3500 hours or 5 years	3.0 [4.0]	37.0 [49.6]
2007 and subsequent - 2009	> 1.0 liter	5000 hours or 7 years	<del>3.0</del> 2.0 [4.0] [2.7]	<del>37.0</del> 3.3 [49.6] [4.4]
<u>2010 and subsequent</u> <sup>(5),(6)</sup>	<u>&gt; 1.0 liter</u>	<u>5000 hours or 7 years</u>	<u>0.6</u> [0.8]	<u>15.4</u> [20.6]

- Note: (1) For 2006 and previous model years, sStandards in grams per kilowatt-hour are given only as a reference. For 2007 and subsequent model years, pPollutant emissions reported to ARB by manufacturers must be in grams per kilowatt-hourbrake horsepower-hour.
- (2) Small volume manufacturers are not required to comply with these emission standards.
- (3) Manufacturers must show that at least 25 percent of its California engine sales comply with the standards in 2001, 50 percent in 2002, and 75 percent in 2003.

- (4) The standards for in-use compliance for engine families certified to the standards in the row noted are 4.0 g/bhp-hr (5.4 g/kW-hr) hydrocarbon plus oxides of nitrogen and 50.0 g/bhp-hr (67.0 g/kW-hr) carbon monoxide, with a useful life of 5000 hours or 7 years. In-use averaging, banking, and trading credits may be generated for engines tested in compliance with these in-use compliance standards. If the in-use compliance level is above 3.0 but does not exceed 4.0 g/bhp-hr hydrocarbon plus oxides of nitrogen or is above 37.0 but does not exceed 50.0 g/bhp-hr carbon monoxide, and based on a review of information derived from a statistically valid and representative sample of engines, the Executive Officer determines that a substantial percentage of any class or category of such engines exhibits within the warranty periods noted in Section 2435, an identifiable, systematic defect in a component listed in that section, which causes a significant increase in emissions above those exhibited by engines free of such defects and of the same class or category and having the same period of use and hours, then the Executive Officer may invoke the enforcement authority under Section 2439, Title 13, California Code of regulations to require remedial action by the engine manufacturer. Such remedial action is limited to owner notification and repair or replacement of defective components, without regard to the requirements set forth in Section 2439(b)(5) or Section 2439(c)(5)(B)(vi). As used in the section, the term "defect" does not include failures that are the result of abuse, neglect, or improper maintenance.
- (5) For severe-duty engines, the HC+NOx standard is 2.7 g/kW-hr and the CO standard is 130.0 g/kW-hr.
- (6) Small volume manufacturers are required to comply with these emission standards in 2013.

(B) For the 2007 through 2009 model years, you may alternatively certify your engines according to the following formula instead of the standards in paragraph (b)(1)(A) of this section:

$$\frac{(HC+NO_x) \times CO^{0.784}}{100} \leq 8.57.$$

Where: HC + NO<sub>x</sub> = hydrocarbon plus oxides of nitrogen family emissions level (FEL) in g/kW-hr  
CO = carbon monoxide FEL in g/kW-hr

The HC+NO<sub>x</sub> and CO emission levels selected to satisfy this formula, rounded to the nearest 0.1 g/kW-hr, become the emission standards that apply for those engines. You may not select an HC+NO<sub>x</sub> FEL higher than 2.7 g/kW-hr or a CO FEL higher than 20.6 g/kW-hr.

(C) Field Testing Standards. The field testing standards for model year 2007 and subsequent off-road large spark-ignition engines are described in subpart F, Title 40 CFR Sections 1048.101(c), as adopted July 13, 2005.

(2)(A) Optional Exhaust Emission Standards. Manufacturers may certify off-road large spark-ignition engines manufactured for sale, sold, or offered for sale in California, or that are introduced, delivered or imported into California for introduction into commerce to the following optional low emission standards.

Optional Exhaust Emission Standards  
(grams per brake horsepower-hour)  
[grams per kilowatt-hour]<sup>(1)</sup>

<u>Model Year</u>	<u>Engine Displacement</u>	<u>Durability Period</u>	<u>HC+NOx</u>	<u>Carbon Monoxide</u>
<u>2007 - 2009</u>	<u>&gt; 1.0 liter</u>	<u>5000 hours or 7 years</u>	<u>1.5</u> <u>[2.0]</u>	<u>4.8</u> <u>[6.4]</u>
<u>2007 - 2009</u>	<u>&gt; 1.0 liter</u>	<u>5000 hours or 7 years</u>	<u>1.0</u> <u>[1.3]</u>	<u>8.3</u> <u>[11.1]</u>
<u>2007 - 2009</u>	<u>&gt; 1.0 liter</u>	<u>5000 hours or 7 years</u>	<u>0.6</u> <u>[0.8]</u>	<u>15.4</u> <u>[20.6]</u>
<u>2007 - 2009</u>	<u>&gt; 1.0 liter</u>	<u>5000 hours or 7 years</u>	<u>0.4</u> <u>[0.5]</u>	<u>15.4</u> <u>[20.6]</u>
<u>2007 - 2009</u>	<u>&gt; 1.0 liter</u>	<u>5000 hours or 7 years</u>	<u>0.2</u> <u>[0.3]</u>	<u>15.4</u> <u>[20.6]</u>
<u>2007 - 2009</u>	<u>&gt; 1.0 liter</u>	<u>5000 hours or 7 years</u>	<u>0.1</u> <u>[0.1]</u>	<u>15.4</u> <u>[20.6]</u>
<u>2010 and subsequent</u>	<u>&gt; 1.0 liter</u>	<u>5000 hours or 7 years</u>	<u>0.4</u> <u>[0.5]</u>	<u>15.4</u> <u>[20.6]</u>
<u>2010 and subsequent</u>	<u>&gt; 1.0 liter</u>	<u>5000 hours or 7 years</u>	<u>0.2</u> <u>[0.3]</u>	<u>15.4</u> <u>[20.6]</u>
<u>2010 and subsequent</u>	<u>&gt; 1.0 liter</u>	<u>5000 hours or 7 years</u>	<u>0.1</u> <u>[0.1]</u>	<u>15.4</u> <u>[20.6]</u>

Note: (1) Pollutant emissions reported to ARB by manufacturers must be in grams per kilowatt-hour.

(B) Field Testing Standards. The field testing standards for optional emission standard off-road large spark-ignition engines shall be 140 percent of the corresponding OLES HC+NO<sub>x</sub> standard and 150 percent of the corresponding OLES CO standard, rounded to the nearest tenth of one gram, using the field testing procedures described in subpart F, Title 40 CFR Section 1048.101(c), as adopted July 13, 2005.

(23) Crankcase Emissions. No crankcase emissions shall be discharged into the ambient atmosphere from any new 2001 or later model year off-road LSI engines.

(4) Evaporative Emission Standards. Starting in the 2007 model year, engines over one liter that run on a volatile liquid fuel (such as gasoline), must meet the following evaporative emissions standards and requirements:

(A) Evaporative hydrocarbon emissions may not exceed 0.2 grams per gallon of fuel tank capacity when measured with the test procedures for evaporative emissions as described in subpart F, Title 40 Code of Federal Regulations (CFR) Sec.1048, as adopted July 13, 2005.

(B) For nonmetallic fuel lines, you must specify and use products that meet the Category 1 specifications in SAE J2260 (issued November 1996).

(C) Liquid fuel in the fuel tank may not reach boiling during continuous engine operation in the final installation at an ambient temperature of 30° C. Note that gasoline with a Reid vapor pressure of 62 kPa (9 psi) begins to boil at about 53° C.

(D) Design-based certification as described in subpart F, Title 40 CFR Sections 1048.105 and 1048.245, as adopted July 13, 2005, may be used instead of generating new emission data.

(c) Test Procedures. The test procedures for determining certification and compliance with the standards for exhaust emissions from new model year 2001 through 2006 off-road LSI engines with engine displacement greater than 1.0 liter sold in the state are set forth in "California Exhaust Emission Standards and Test Procedures for New 2001 and Later through 2006 Off-Road Large Spark-ignition Engines, Parts I and II," adopted September 1, 1999, and as last amended March 2, 2007. The test procedures for determining certification and compliance with the standards for exhaust and evaporative emissions from new model year 2007 through 2009 off-road LSI engines with engine displacement greater than 1.0 liter sold in the state are set forth in "California Exhaust and Evaporative Emission Standards and Test Procedures for New 2007 through 2009 Off-Road Large Spark-ignition Engines (2007-2009 Test Procedure 1048)," adopted March 2, 2007. The test procedures for determining certification and compliance with the standards for exhaust and evaporative emissions from new model year 2010 and subsequent off-road LSI engines with engine displacement greater than 1.0 liter sold in the state are set forth in "California Exhaust and Evaporative Emission Standards and Test Procedures for New 2010 and Later Off-Road Large Spark-ignition Engines (2010 and Later Test

Procedure 1048),” adopted March 2, 2007. The test procedures for determining compliance with the standards for exhaust and evaporative emissions for new model year 2007 and subsequent off-road LSI engines with engine displacement greater than 1.0 liter sold in the state are set forth in the “California Exhaust and Evaporative Emission Standards and Test Procedures for New 2007 and Later Off-Road Large Spark-Ignition Engines (Test Procedures 1065 and 1068)”, adopted March 2, 2007.

(d) The test procedures for determining certification and compliance with the standards for exhaust emissions from new off-road LSI engines with engine displacement equal to or less than 1.0 liter sold in the state are set forth in “California Exhaust Emission Standards and Test Procedures for 1995-2004 and Later Small Off-Road Engines,” as last amended ~~March 23, 1999~~ July 26, 2004 or “California Exhaust Emission Standards and Test Procedures for 2005 and Later Small Off-Road Engines,” adopted July 26, 2004.

(e) ~~Replacement Engines~~ Replacement Engines.

(1) [Reserved]

(2) (A) Beginning in 2004, a new off-road large spark-ignition engine intended solely to replace an engine in a piece of off-road equipment that was originally produced with an engine manufactured prior to the applicable implementation date as described in paragraph (b), shall not be subject to the emissions requirements of paragraph (b) provided that:

(i) The engine manufacturer has ascertained that no engine produced by itself or the manufacturer of the engine that is being replaced, if different, and certified to the requirements of this article, is available with the appropriate physical or performance characteristics to repower the equipment; and

(ii) Unless an alternative control mechanism is approved in advance by the Executive Officer, the engine manufacturer or its agent takes ownership and possession of the engine being replaced; and

(iii) The replacement engine is clearly labeled with the following language, or similar alternate language approved in advance by the Executive Officer:

THIS ENGINE DOES NOT COMPLY WITH CALIFORNIA OFF-ROAD OR ON-HIGHWAY EMISSION REQUIREMENTS. SALE OR INSTALLATION OF THIS ENGINE FOR ANY PURPOSE OTHER THAN AS A REPLACEMENT ENGINE IN AN OFF-ROAD VEHICLE OR PIECE OF OFF-ROAD EQUIPMENT WHOSE ORIGINAL ENGINE WAS NOT CERTIFIED IS A VIOLATION OF CALIFORNIA LAW SUBJECT TO CIVIL PENALTY.

(B) At the beginning of each model year, the manufacturer of replacement engines must provide, by engine model, an estimate of the number of replacement engines it expects to produce for California for that model year.

(C) At the conclusion of the model year, the manufacturer must provide, by engine model, the actual number of replacement engines produced for California during the model year, and a description of the physical or performance characteristics of those models that indicate that certified replacement engine(s) were not available as per paragraph (A).

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150, 43151, 43152, 43153, - 43154, 43205.5, and 43210, 43210.5, 43211 and-43212, Health and Safety Code.

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## Final Regulation Order

Note: This document is printed in a style to indicate changes from the existing provisions. All existing language is indicated by plain type. All additions to language are indicated by underlined text. All deletions to language are indicated by ~~strikeout~~.

Amend Article 4.5, Chapter 9, Division 3, Title 13, California Code of Regulations, to read as follows:

### Chapter 9. Off-Road Vehicles and Engines Pollution Control Devices Article 4.5. Off-Road Large Spark-Ignition Engines

#### § 2433. Emission Standards and Test Procedures - Off-Road Large Spark-Ignition Engines.

(a) [No Change]

(b) *Standards.*

(1) (A) *Exhaust Emission Standards.* Exhaust emissions from off-road large spark-ignition engines manufactured for sale, sold, or offered for sale in California, or that are introduced, delivered or imported into California for introduction into commerce, must not exceed:

Exhaust Emission Standards  
(grams per brake horsepower-hour)  
[grams per kilowatt-hour]<sup>(1)</sup>

<i>Model Year</i>	<i>Engine Displacement</i>	<i>Durability Period</i>	<i>Hydrocarbon plus Oxides of Nitrogen HC + NO<sub>x</sub></i>	<i>Carbon Monoxide</i>
2002 and subsequent 2010	≤ 1.0 liter	1,000 hours or 2 years	9.0 [12.0]	410 [549]
2011 and subsequent	≤ 825 cc	<u>1,000 hours or 2 years</u>	<u>6.0</u> <u>[8.0]</u>	<u>410</u> <u>[549]</u>
2011 - 2014	> 825 cc - ≤ 1.0 liter	<u>1,000 hours or 2 years</u>	<u>4.8</u> <u>[6.5]</u>	<u>280</u> <u>[375]</u>
2015 and subsequent	> 825 cc - ≤ 1.0 liter	<u>1,000 hours or 2 years</u>	<u>0.6</u> <u>[0.8]</u>	<u>15.4</u> <u>[20.6]</u>
2001 - 2003 <sup>(2),(3)</sup>	> 1.0 liter	N/A	3.0 [4.0]	37.0 [49.6]
2004 - 2006 <sup>(4)</sup>	> 1.0 liter	3500 hours or 5 years	3.0 [4.0]	37.0 [49.6]
2007 - 2009	> 1.0 liter	5000 hours or 7 years	2.0 [2.7]	3.3 [4.4]
2010 and subsequent <sup>(5),(6)</sup>	> 1.0 liter	5000 hours or 7 years	0.6 [0.8]	15.4 [20.6]

- Note: (1) For 2006 and previous model years, standards in grams per kilowatt-hour are given only as a reference. For 2007 and subsequent model years, pollutant emissions reported to ARB by manufacturers must be in grams per kilowatt-hour.
- (2) Small volume manufacturers are not required to comply with these emission standards.
- (3) Manufacturers must show that at least 25 percent of its California engine sales comply with the standards in 2001, 50 percent in 2002, and 75 percent in 2003.
- (4) The standards for in-use compliance for engine families certified to the standards in the row noted are 4.0 g/bhp-hr (5.4 g/kW-hr) hydrocarbon plus oxides of nitrogen and 50.0 g/bhp-hr (67.0 g/kW-hr) carbon monoxide, with a useful life of 5000 hours or 7 years. In-use averaging, banking, and trading credits may be generated for engines tested in compliance with these in-use compliance standards. If the in-use compliance level is above 3.0 but does not exceed 4.0 g/bhp-hr hydrocarbon plus oxides of nitrogen or is above 37.0 but does not exceed 50.0 g/bhp-hr carbon monoxide, and based on a review of information derived from a statistically valid and representative sample of engines, the Executive Officer determines that a substantial percentage of any class or category of such engines exhibits within the warranty periods noted in Section 2435, an identifiable, systematic defect in a component listed in that section, which causes a significant increase in emissions above those exhibited by engines free of such defects and of the same class or category and having the same period of use and hours, then the Executive Officer may invoke the enforcement authority under Section 2439, Title 13, California Code of regulations to require remedial action by the engine manufacturer. Such remedial action is limited to owner notification and repair or replacement of defective components, without regard to the requirements set forth in Section 2439(b)(5) or Section 2439(c)(5)(B)(vi). As used in the section, the term "defect" does not include failures that are the result of abuse, neglect, or improper maintenance.
- (5) For severe-duty engines, the HC+NOx standard is 2.7 g/kW-hr and the CO standard is 130.0 g/kW-hr.
- (6) Small volume manufacturers are required to comply with these emission standards in 2013.

(B) [No Change]

(C) [No Change]

(2) (A) *Optional Exhaust Emission Standards*. Manufacturers may certify ~~off-road large spark-ignition~~ LSI engines manufactured for sale, sold, or offered



for sale in California, or that are introduced, delivered or imported into California for introduction into commerce to the following optional low emission standards.

Optional Exhaust Emission Standards  
(grams per brake horsepower-hour)  
[grams per kilowatt-hour]<sup>(1)</sup>

<i>Model Year</i>	<i>Engine Displacement</i>	<i>Durability Period</i>	<i>HC+NOx</i>	<i>Carbon Monoxide</i>
2007 - 2009	> 1.0 liter	5000 hours or 7 years	1.5 [2.0]	4.8 [6.4]
2007 - 2009	> 1.0 liter	5000 hours or 7 years	1.0 [1.3]	8.3 [11.1]
2007 - 2009	> 1.0 liter	5000 hours or 7 years	0.6 [0.8]	15.4 [20.6]
2007 - 2009	> 1.0 liter	5000 hours or 7 years	0.4 [0.5]	15.4 [20.6]
2007 - 2009	> 1.0 liter	5000 hours or 7 years	0.2 [0.3]	15.4 [20.6]
2007 - 2009	> 1.0 liter	5000 hours or 7 years	0.1 [0.1]	15.4 [20.6]
2010 and subsequent	> 1.0 liter	5000 hours or 7 years	0.4 [0.5]	15.4 [20.6]
2010 and subsequent	> 1.0 liter	5000 hours or 7 years	0.2 [0.3]	15.4 [20.6]
2010 and subsequent	> 1.0 liter	5000 hours or 7 years	0.1 [0.1]	15.4 [20.6]

Note: (1) Pollutant emissions reported to ARB by manufacturers must be in grams per kilowatt-hour.

(B) *Field Testing Standards.* The field testing standards for optional emission standard ~~off road large spark-ignition LSI~~ engines shall be 140 percent of the corresponding ~~OLES optional~~ HC+NOx standard and 150 percent of the corresponding ~~OLES optional~~ CO standard, rounded to the nearest tenth of one gram, using the field testing procedures described in subpart F, Title 40 CFR Section 1048.101(c), as adopted July 13, 2005.

(3) *Crankcase Emissions.* No crankcase emissions shall be discharged into the ambient atmosphere from any new 2001 or later model year off-road LSI engines.

(4) *Evaporative Emission Standards.*

(A) Starting in the 2007 model year, LSI engines over one liter that run on a volatile liquid fuel (such as gasoline), must meet the following evaporative emissions standards and requirements:

1.(A) Evaporative hydrocarbon emissions may not exceed 0.2 grams per gallon of fuel tank capacity when measured with the test procedures for evaporative emissions as described in subpart F, Title 40 Code of Federal Regulations (CFR) Sec.1048, as adopted July 13, 2005.

2.(B) For nonmetallic fuel lines, you must specify and use products that meet the Category 1 specifications in SAE J2260 (issued November 1996).

3.(C) Liquid fuel in the fuel tank may not reach boiling during continuous engine operation in the final installation at an ambient temperature of 30° C. Note that gasoline with a Reid vapor pressure of 62 kPa (9 psi) begins to boil at about 53° C.

4.(D) Design-based certification as described in subpart F, Title 40 CFR Sections 1048.105 and 1048.245, as adopted July 13, 2005, may be used instead of generating new emission data.

(B) Starting with the 2011 model year, LSI engines with an engine displacement less than or equal to 1.0 liter that run on a volatile liquid fuel (such as gasoline), must meet the evaporative emission requirements for small off-road engines, which are specified in Title 13, Chapter 15, Article 1, except that the small volume tank exemption set out in Title 13 section 2766 is not available for such LSI engines and/or equipment manufacturers that use such LSI engines.

(5) *Recreational Vehicle Engines.* Except as noted below, starting with the 2011 MY, LSI engines with an engine displacement less than or equal to 1.0 liter used in off-highway motor vehicles that, with the exception of payload capacity, meet the "Off-Road Sport Vehicle" or "Off-Road Utility Vehicle" definition in Title 13, Section 2411, must meet the exhaust emission standards in Section 2433 (b)(1)(A). LSI engines with an engine displacement greater than 825 cc but less than or equal to 1.0 liter need not meet the 2015 and subsequent exhaust emission standards in Section 2433 (b)(1)(A). These engines are subject to the test procedures and certification procedures for off-highway recreational vehicles and engines which are specified in Title 13, Chapter 9, Article 3.

(c) *Test Procedures.* The test procedures for determining certification and compliance with the standards for exhaust emissions from new model year 2001 through 2006 off-road LSI engines with engine displacement greater than 1.0 liter sold in the state are set forth in "California Exhaust Emission Standards and Test Procedures for New 2001 through 2006 Off-Road Large Spark-ignition Engines,

Parts I and II," adopted September 1, 1999, and as last amended March 2, 2007. The test procedures for determining certification and compliance with the standards for exhaust and evaporative emissions from new model year 2007 through 2009 off-road LSI engines with engine displacement greater than 1.0 liter sold in the state are set forth in "California Exhaust and Evaporative Emission Standards and Test Procedures for New 2007 through 2009 Off-Road Large Spark-ignition Engines (2007-2009 Test Procedure 1048)," adopted March 2, 2007. The test procedures for determining certification and compliance with the standards for exhaust and evaporative emissions from new model year 2010 and subsequent off-road LSI engines with engine displacement greater than 1.0 liter sold in the state are set forth in "California Exhaust and Evaporative Emission Standards and Test Procedures for New 2010 and Later Off-Road Large Spark-ignition Engines (2010 and Later Test Procedure 1048)," adopted March 2, 2007, as last amended November 21, 2008. The test procedures for determining compliance with the standards for exhaust and evaporative emissions for new model year 2007 and subsequent off-road LSI engines with engine displacement greater than 1.0 liter sold in the state are set forth in the "California Exhaust and Evaporative Emission Standards and Test Procedures for New 2007 and Later Off-Road Large Spark-Ignition Engines (Test Procedures 1065 and 1068)", adopted March 2, 2007.

(d) (1) The test procedures for determining certification and compliance with the standards for exhaust emissions from new off-road-LSI engines with an engine displacement equal to or less than or equal to 1.0 liter sold in the state are set forth in "California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines," as last amended July 26, 2004 or "California Exhaust Emission Standards and Test Procedures for 2005 and Later Small Off-Road Engines," adopted July 26, 2004.

(2) The test procedures for determining certification and compliance with the standards for evaporative emissions from new model year 2011 and subsequent LSI engines with an engine displacement less than or equal to 1.0 liter are set forth in "Test Procedure for Determining Permeation Emissions from Small Off-Road Engines and Equipment Fuel Tanks (TP-901)," adopted July 26, 2004, "Test Procedure for Determining Diurnal Evaporative Emissions from Small Off-Road Engines and Equipment (TP-902)," adopted July 26, 2004, "Certification and Approval Procedure for Small Off-Road Engine Fuel Tanks (CP-901)", adopted July 26, 2004, and "Certification and Approval Procedures for Evaporative Emission Control Systems (CP-902)", adopted July 26, 2004.

(e) [No Change]

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150, 43151, 43152, 43153, 43154, 43205.5, 43210, 43210.5, 43211 and 43212, Health and Safety Code.

**PART 10**

**FINAL REGULATION ORDER**

**Large Spark-Ignition Engines**

**Title 13 California Code of Regulations**

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## FINAL REGULATION ORDER

Note: This document is written in a style to indicate changes from the existing provisions. All existing regulatory language is indicated by plain type. All additions to the regulatory language are indicated by underlined type. All deletions to the regulatory language are indicated by ~~strikeout~~. Only those portions containing modifications from existing provisions are included. All other portions remain unchanged and are indicated by the symbol [ \* \* \* \* ] for reference.

### Article 4.5 Off-Road Large Spark-Ignition Engines

Amend § 2433, title 13, California Code of Regulations, to read as follows:

#### § 2433. Emission Standards and Test Procedures—Off-Road Large Spark-Ignition Engines.

\* \* \* \* \*

(c) *Test Procedures.* The test procedures for determining certification and compliance with the standards for exhaust emissions from new model year 2001 through 2006 off-road LSI engines with engine displacement greater than 1.0 liter sold in the ~~s~~State are set forth in “California Exhaust Emission Standards and Test Procedures for New 2001 through 2006 Off-Road Large Spark-ignition Engines, Parts I and II,” adopted September 1, 1999, and as last amended March 2, 2007. The test procedures for determining certification and compliance with the standards for exhaust and evaporative emissions from new model year 2007 through 2009 off-road LSI engines with engine displacement greater than 1.0 liter sold in the state are set forth in “California Exhaust and Evaporative Emission Standards and Test Procedures for New 2007 through 2009 Off-Road Large Spark-ignition Engines (2007-2009 Test Procedure 1048),” adopted March 2, 2007. The test procedures for determining certification and compliance with the standards for exhaust and evaporative emissions from new model year 2010 and subsequent off-road LSI engines with engine displacement greater than 1.0 liter sold in the state are set forth in “California Exhaust and Evaporative Emission Standards and Test Procedures for New 2010 and Later Off-Road Large Spark-ignition Engines (2010 and Later Test Procedure 1048),” adopted March 2, 2007, and as last amended ~~November 21, 2008~~ October 25, 2012. The test procedures for determining compliance with the standards for exhaust and evaporative emissions for new model year 2007 and subsequent off-road LSI engines with engine displacement greater than 1.0 liter sold in the state are set forth in the “California Exhaust and Evaporative Emission Standards and Test Procedures for New 2007 and Later Off-Road Large Spark-Ignition Engines

(Test Procedures 1065 and 1068)”, adopted March 2, 2007, and as last amended October 25, 2012.

(d)(1) The test procedures for determining certification and compliance with the standards for exhaust emissions from new LSI engines with an engine displacement less than or equal to 1.0 liter sold in the state are set forth in “California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines,” as last amended July 26, 2004; ~~or~~ “California Exhaust Emission Standards and Test Procedures for 2005-2012 ~~and Later~~ Small Off-Road Engines,” adopted July 26, 2004, and as last amended October 25, 2012; and, the collective “California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines; Engine-Testing Procedures (Part 1054),” adopted October 25, 2012; and, the “California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines; Engine-Testing Procedures (Part 1065),” adopted October 25, 2012.

\* \* \* \* \*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150, 43151, 43152, 43153, 43154, 43205.5, 43210, 43210.5, 43211 and 43212, Health and Safety Code.

## FINAL REGULATION ORDER, PART 1

Note: Amendments to the regulations are shown with underline text for additions and ~~strikeout text for deletions~~. Newly adopted regulations are shown without underline as permitted by California Code of Regulations, title 1, section 8. Subsection headings are shown in italics and should be italicized in Barclays California Code of Regulations.

Amend California Code of Regulations, title 13, sections 2430, 2431, 2433, 2434, and 2438 to read:

### **Article 4.5. Off-Road Large Spark-Ignition Engines**

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**NOTE:** Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150, 43151, 43152, 43153, 43154, 43205.5, and 43210, 43210.5, 43211 and 43212, Health and Safety Code.



## 2434. Emission Control Labels - 2001 and Later Off-Road Large Spark-ignition Engines

- (a) ~~Purpose.~~ Purpose. [No Change]
- (b) ~~Applicability.~~ Applicability. [No Change]

- (c) ~~Label Content and Location.~~ Label Content and Location.

(1) A tune-up label made of a permanent material must be welded, riveted or otherwise permanently attached to the engine block or other major component in such a way that it will be readily visible after installation of the engine in the equipment. If the equipment obscures the label on the engine, the equipment manufacturer must attach a supplemental label such that it is readily visible.

(2) In selecting an acceptable location, the manufacturer must consider the possibility of accidental damage (e.g., possibility of tools or sharp instruments coming in contact with the label). Each label must be affixed in such a manner that it cannot be removed without destroying or defacing the label, and must not be affixed to any part which is likely to be replaced during the equipment's useful life. The label(s) must not be affixed to any component which is easily detached from the engine.

(3) In addition, an engine serial number and date of engine manufacture (month and year) must be stamped on the engine block or stamped on a metal label riveted or permanently attached to the engine block. Engine manufacturers must keep records such that the engine serial number can easily be used to determine if an engine was certified for the applicable model year. Alternative engine serial number identification methods or tracking number may be allowed with prior approval from the Executive Officer.

(4) The label must be in the English language and use block letters and numerals which must be of a color that contrasts with the background of the label.

(5) The label must contain the following information:

(A) The label heading must read:

“Important Engine Information.”

(B) Full corporate name and trademark of the manufacturer.  
(C) "THIS ENGINE IS CERTIFIED TO OPERATE ON (specify operating fuel(s))."

(D) Identification of the Exhaust Emission Control System.  
Abbreviations may be used and must conform to the nomenclature and abbreviations found in the Society of Automotive Engineers document J1930 which is incorporated by reference in Section 1977, Title 13, CCR, entitled "Electrical/Electronic Systems Diagnostic Terms, Definitions, Abbreviations, and Acronyms."

(E) The maintenance specifications and adjustments recommended by the engine manufacturer, including, as applicable: spark plug gap width, valve lash, ignition timing, idle air/fuel mixture setting procedure and value (e.g., idle CO, idle speed drop), and high idle speed. These specifications must indicate the proper transmission position, (if applicable), during tune-up and what accessories, if any, should be in operation, and what systems, if any (e.g., vacuum advance, air pump), should be disconnected during the tune-up. If the manufacturer does not recommend adjustment of the foregoing specifications, the manufacturer must include in lieu of the "specifications" the single statement "No other adjustments needed." For all engines, the instructions for tune-up adjustments must be sufficiently clear on the label to preclude the need for a mechanic or equipment owner to refer to another document in order to correctly perform the adjustments.

(F) Any specific fuel or engine lubricant requirement (e.g., research octane number, engine lubricant type).

(G) An unconditional statement of compliance with the appropriate model year (for 2001-2003) or (2004 and subsequent) California regulations; for example, "This engine conforms to 2002 California regulations for off-road large spark-ignition engines and is certified to 3.0 g/bhp-hr HC+NOx and 37 g/bhp-hr CO." or "This engine conforms to 2006~~7~~ California regulations for off-road large spark-ignition engines and is certified to 0.8 g/kW-hr [0.6 g/bhp-hr] HC+NOx and 20.6 g/kW-hr [15.4 g/bhp-hr] CO."

(H) Total engine displacement (in cubic inches and/or liters) of the engine upon which the engine label is attached.

(I) The engine family identification (i.e., engine family name and manufacturer's own engine group/code).

(6) (A) The manufacturer of any engine certified with a clean fuel (i.e. natural gas) must at the time of engine manufacture, affix a permanent legible label specifying the appropriate operating fuel(s).

(B) The label must be located immediately adjacent to each fuel tank filler inlet and outside of any filler inlet compartment. It must be located so that it is readily visible to any person introducing fuel to such filler inlet; provided, however, that the Executive Officer must upon application from an engine manufacturer, approve other label locations that achieve the purpose of this paragraph. If the engine is manufactured separately from the equipment, the label must be affixed to the engine and located so that it is readily visible. Such labels must be in English and in block letters which must be of a color that contrasts with their background.



## FINAL REGULATION ORDER, PART 1

Note: Amendments to the regulations are shown with underline text for additions and ~~strikeout text for deletions~~. Newly adopted regulations are shown without underline as permitted by California Code of Regulations, title 1, section 8. Subsection headings are shown in italics and should be italicized in Barclays California Code of Regulations.

Amend California Code of Regulations, title 13, sections 2430, 2431, 2433, 2434, and 2438 to read:

### **Article 4.5. Off-Road Large Spark-Ignition Engines**

*(Faint, illegible text)*

*(Faint, illegible text)*

*(Faint, illegible text)*

*(Faint, illegible text)*

*(Faint, illegible text)*

*(Faint, illegible text)*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150, 43151, 43152, 43153, 43154, 43205.5, and 43210, 43210.5, 43211 and 43212, Health and Safety Code.

**§ 2438. In-Use Compliance Program**

(a) through (d) [No Change]

(e)(1) through (e)(6) [No Change]

(e)(7) Credit Calculation.

(A) For each participating engine family, emission credits (positive or negative) are to be calculated according to the following equation and rounded, in accordance with ASTM E29-93a, to the nearest gram. ASTM E29-93a has been incorporated by reference. Consistent units are to be used throughout the equation. The following equation is used to determine the credit status for an engine family whether generating positive or negative in-use emission credits:

$$\text{Credits (grams)} = \text{SALES} \times (\text{STD} - \text{CL}) \times \text{POWER} \times \text{AF} \times \text{LF} \times \text{UL}$$

Where:

**SALES** = the number of eligible sales tracked to the point of first retail sale in the U.S. for the given engine family during the model year.

**STD** = the emission standard or family emission level in g/bhp-hr or g/kW-hr, as appropriate and as noted in California Code of Regulations, Title 13, Section 2433.

**CL** = compliance level of the in-use testing in g/bhp-hr or g/kW-hr, as appropriate and as approved by ARB.

**UL**= useful life in hours (5000 hours for engines with displacement) greater than 1.0 liter.

**Power** = the average power of an engine family in bhp or kW (sales weighted). The power of each configuration is the rated output in horsepower as determined by SAE J1349 (June 1995) or J1995 (June 1995), as applicable. These procedures have been incorporated by reference.

**LF** = Load factor; Fraction of rated engine power utilized in-use (0.32 for engines with displacement greater than 1.0 liter.

**AF** = adjustment factor for the number of tests conducted, as determined from the following table, except that when a manufacturer concedes failure before completion of testing, the adjustment factor shall be 1.0:

Number of Engines Tested	Adjustment Factor
2*, 4	0.5
6	0.75
8	0.9
10	1.0

\*Small volume manufacturer

(B) [No Change]

(e)(8) through (e)(10) [No Change]

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150, 43151, 43152, 43153, - 43154, 43205.5, ~~and~~ 43210, 43210.5, 43211 and ~~43212~~, Health and Safety Code.

## Chapter 9. Off-Road Vehicles and Engines Pollution Control Devices

### Article 4.7. Spark-Ignition Marine Engines

#### § 2440. Applicability.

(a)

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- (3) ~~Spark-ignition-inboard-and sterndrive/inboard~~ inboard marine engines produced by the engine manufacturer to be used solely for competition are exempt from the requirements of this article, except section 2443.1, provided that the marine watercraft in which the engine is installed is designed, built, and used solely for competition. Marine watercraft not registered with a nationally-recognized organization that sanctions professional competitive events or used for amateur or occasional competition do not meet the competition exemption criteria.

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Note: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.

Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

§ 2442. **Emission Standards.**

- (a) Model year 2001 and later model year spark-ignition personal watercraft and outboard marine engines:
- (1) Exhaust emissions from new spark-ignition marine engines manufactured for sale, sold, or offered for sale in California, or that are introduced, delivered or imported into California for introduction into commerce must not exceed the hydrocarbon plus oxides of nitrogen (HC+NO<sub>x</sub>) exhaust emission standards listed in Table 1.1 nor the carbon monoxide (CO) exhaust emission standards listed in Table 1.2 during its designated useful life:

**Table 1.1.**

<b>Corporate Average Emission Standards by Implementation Date HC+NO<sub>x</sub> (g/kW-hr)</b>			
<b>Model Year</b>	<b>Max. Family Emission Limit (FEL)</b>	<b>P<sub>tx</sub> &lt; 4.3 kW<sup>1</sup></b>	<b>P<sub>tx</sub> ≥ 4.3 kW<sup>1</sup></b>
2001-2003	Not Applicable	81.00	$(0.25 \times (151+557/P_{tx}^{0.9})) + 6.0$
2004-2007	80	64.80	$(0.20 \times (151+557/P_{tx}^{0.9})) + 4.8$
2008 and Later <sup>2</sup>	44	30.00	$(0.09 \times (151+557/P_{tx}^{0.9})) + 2.1$

1. For 2010 and subsequent model years, an engine or engine family's power category is based on maximum engine power; otherwise maximum rated power may be used.

2. For 2010 and subsequent model years, standards are measured in total hydrocarbons plus oxides of nitrogen.



Table 1.2

**Outboard and Personal Watercraft Carbon Monoxide Standards**

<u>ENGINE CATEGORY</u>	<u>MODEL YEAR</u>	<u>POWER CATEGORY<sup>a</sup></u> [kilowatts]	<u>CO STANDARD</u> [grams per kilowatt-hour]
<u>OB/PWC<sup>b</sup></u>	<u>2009 and later</u>	<u>kW ≤ 40</u>	<u>500 - 5 x P<sup>c</sup></u>
		<u>kW &gt; 40</u>	<u>300.0</u>

a. For 2010 and subsequent model years, an engine or engine family's power category is based on maximum engine power; otherwise maximum rated power may be used.

b. Abbreviation for "Outboard and Personal Water Craft" engines

c. P is defined as maximum rated power or maximum engine power (see footnote a) in kilowatts (kW)

where:

$P_{tx}$  is the average power in kilowatts (kW) (sales-weighted) of the total number of spark-ignition marine engines produced for sale in California in model year x. Engine power must be calculated using the Society of Automotive Engineers (SAE) standard J1228, November 1991, incorporated herein by reference. Engine manufacturers must not determine  $P_{tx}$  by combining the power outputs of outboard engines with the power outputs of personal watercraft engines.

- (2) An engine manufacturer may comply with the standards directly on an individual engine family basis. Consequently in Table 1.1, FELs are not applicable for any model year and  $P_{tx}$  means the average power in kW (sales-weighted) of the subject engine family produced for sale in California in model year x.

Compliance with the  $HC+NO_x$  standards on a corporate average basis is determined as follows:

$$\frac{\sum_{j=1}^n (PROD_{jx})(FEL_{jx})(P_{jx})}{\sum_{j=1}^n (PROD_{jx})(P_{jx})} = STD_{ca}$$

where:

n = Total number of engine families (by category)

$PROD_{jx}$  = Number of units each engine family j produced for sale in California in model year x.

$FEL_{jx}$  = The Family Emission Limit (FEL) for engine family  $j$  in model year  $x$ , which must be determined by the engine manufacturer subject to the following conditions: (1) no individual engine family FEL shall exceed the maximum allowed value as specified in Table 1.1; (2) no engine family designation or FEL shall be amended in a model year unless the engine family is recertified; and (3) prior to sale or offering for sale in California, each engine family must be certified in accordance with the test procedures referenced in section 2447 and must meet the engine manufacturer's FEL as a condition of the Executive Order. Before certification, the engine manufacturer must also submit estimated production volumes for each engine family to be offered for sale in California.

$P_{jx}$  = The average power in kW (sales-weighted) of engine family  $j$  produced for sale in California in model year  $x$ . Engine power must be calculated using SAE standard J1228, November 1991, incorporated herein by reference.

$STD_{ca}$  = An engine manufacturer's calculated corporate average HC+NO<sub>x</sub> exhaust emissions from those California spark-ignition marine engines subject to the California corporate average HC+NO<sub>x</sub> exhaust emission standard determined from Table 1.1, as established by an Executive Order certifying the California production for the model year. This Executive Order must be obtained prior to the issuance of certification Executive Orders for individual engine families for the model year.

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(b) Model year 2003 and later model year spark-ignition ~~inboard and sterndrive~~/inboard marine engines:

(1) Exhaust emissions from all new model year 2003 and later spark-ignition ~~inboard and sterndrive~~/inboard marine engines must not exceed the exhaust emission standards listed in Table 2.1(a) for standard performance engines and 2.1(b) for high performance engines, for the designated emission durability test period.

(A) Prior to Model Year 2007 certification, each engine manufacturer must select either Option 1 (OPT 1) or Option 2 (OPT 2) for its entire production of standard performance engines for the 2007 and 2008 model years.

**Table 2.1(a)**  
**Standard Performance Inboard/Sterndrive/Inboard Marine Engine Standards**

MODEL YEAR	RATED POWER CATEGORY <sup>1</sup> [kilowatts]	COMPLIANCE OPTION <sup>12</sup>	DURABILITY [hours / years]	EXHAUST STANDARDS			SUPPLEMENTAL MEASURE <sup>45</sup>
				NMHC <sup>23</sup> +NO <sub>x</sub> [grams per kilowatt-hour]	TYPE <sup>34</sup>	CO [grams per kilowatt-hour]	
2003 - 2006	kW ≤ 373	N/A	N/A	16.0	AVE <sup>6</sup>	N/A	None
2007	kW ≤ 373	OPT 1	N/A	16.0 (55%)	AVE <sup>6</sup>		None
			480 / 10	5.0 (45%)	FIXED		Low-Permeation Fuel Line Hoses
2008	kW ≤ 373	OPT 1	N/A	14.0	FIXED		None
			480 / 10	5.0 (75%)	FIXED		None
		OPT 2	480 / 10	5.0	FIXED		Low-Permeation Fuel Line Hoses
			480 / 10	5.0 <sup>6,7,8</sup>	FIXED		75.0 <sup>7,9</sup>
2009 and later	373 < kW ≤ 485	N/A	480 / 10	5.0 <sup>6</sup>	AVE		
			50 <sup>6</sup> / 1	5.0 <sup>6</sup>	AVE		

**Notes:**

1. For 2010 and subsequent model years, an engine or engine family's power category is based on maximum engine power; otherwise maximum rated power may be used
12. Once a manufacturer has chosen an option, that option must continue to be used exclusively across product lines
23. The non-methane component of hydrocarbon For 2010 and subsequent model years, standards are measured in total hydrocarbons plus oxides of nitrogen; however, the non-methane component of hydrocarbon may be substituted in prior years
34. Corporate averaging (AVE) may be used to demonstrate compliance with the exhaust emission standard, except where a FIXED standard is required
45. Supplemental measures may be different than shown, but must provide equal and verifiable emission reductions to those indicated
5. For the purpose of durability testing, engine components that have been approved with an hourly warranty period shorter than the full hourly durability period per § 2445-1 (c)(3)(C)4, may be replaced at the specified warranty interval
6. The corporate average calculation may be met with or without power weighting for these years
67. All engines ≤ 373 kW must meet a 5.0 g/kW-hr NMHC+NO<sub>x</sub> capping standard. For engines > 373 kW, the standard may be met by sales averaging with engines equal to or less than 373 kW. A single engine family certified under the discontinuation allowance in § 2442(g)(2) may continue to meet current certification levels for HC+NO<sub>x</sub> and no more than 150 g/kW-hr for CO over the engine's useful life provided that the manufacturer certifying such an engine family also certifies one or more engine families to family emissions limits sufficiently low to enable compliance on a corporate average basis
8. Large volume manufacturers that produce high performance engines and qualified intermediate volume manufacturers are required to certify one or more engine families to a family emissions limit lower than the HC+NO<sub>x</sub> standard when complying with high performance engines on a corporate average basis
9. Standard performance engines > 6.0 liter displacement may alternatively meet a 25 g/kW-hr standard for Modes 2-5 of the ISO 8178-4 E4 marine test cycle
710. The same or better supplemental emission control hardware used to meet the standard comply in 2007 must be used every model year thereafter and all fuel hoses (i.e., not just the fuel line hose) must be low-permeation hoses

(A) At the time of, or prior to, model year 2009 certification, each large volume manufacturer that intends to produce high performance engines or qualified intermediate volume manufacturer must declare whether it will comply with the high performance exhaust standard of 5.0 g/kW-hr HC+NO<sub>x</sub> through averaging or whether it will comply with the less stringent small volume high performance HC+NO<sub>x</sub> exhaust standard through the incorporation of enhanced evaporative control systems on vessels using standard performance engines for 2009 and subsequent model year engine production.

**Table 2.1(b)**  
**High Performance Sterndrive/Inboard Marine Engine Standards**

MODEL YEAR	POWER <sup>a</sup> CATEGORY <i>[kilowatts]</i>	DURABILITY <i>[hours / years]</i>	HC <sup>b</sup> +NO <sub>x</sub> STANDARD <i>[grams per kilowatt-hour]</i>		CO STANDARD <i>[grams per kilowatt-hour]</i>
			Small Volume Manufacturers or Intermediate Volume Manufacturers that are not Qualified Intermediate Volume Manufacturers	Large Volume or Qualified Intermediate Volume Manufacturers	
2009 - 2010	373 < kW ≤ 485	150 <sup>c</sup> / 3	16.0 <sup>d</sup>	5.0 <sup>e</sup>	350.0 <sup>d</sup>
	kW > 485	50 <sup>c</sup> / 1	25.0 <sup>d</sup>		
2011 and later	373 < kW ≤ 485	150 <sup>c</sup> / 3	16.0 <sup>d</sup>	5.0 <sup>e</sup>	350.0 <sup>d</sup>
	kW > 485	50 <sup>c</sup> / 1	22.0 <sup>d</sup>		

- a For 2010 and subsequent model years, an engine or engine family's power category is based on maximum engine power; otherwise maximum rated power may be used
- b For 2010 and subsequent model years, standards are measured in total hydrocarbons plus oxides of nitrogen; however, the non-methane component of hydrocarbon may be substituted in prior years
- c For the purpose of durability testing, engine components that have been approved with an hourly warranty period shorter than the full hourly durability period per § 2445.1 (c)(3)(C)4, may be replaced at the specified warranty interval
- d These standards are fixed except that engine families certified under the discontinuation allowance in Title 13, California Code of Regulations, § 2442(g)(2) may continue to meet current certification levels for HC+NO<sub>x</sub> over the engine's useful life provided that the manufacturer certifying such an engine family also certifies one or more engine families to family emissions limits sufficiently low to enable compliance on a corporate average basis
- e This standard may be met on a corporate average basis between high performance engines and/or between standard performance and high performance engines. Alternately, large volume manufacturers that produce high performance engines and qualified intermediate volume manufacturers may comply with the exhaust standards for small volume manufacturers provided a sufficient number of vessels with the manufacturer's standard performance engines are equipped with enhanced evaporative control systems as noted in Title 13, California Code of Regulations, § 2442(b)(5). Manufacturers must declare their intent to use this alternative prior to certifying engines for the 2009 model year and must continue to certify future model year engines using this alternative exclusively across product lines

- (C) (A)No crankcase emissions shall be discharged into the ambient atmosphere from 2003 and later spark-ignition inboard and sterndrive/inboard marine engines.
- (D) (B)Production and sale of spark-ignition marine engines that result in noncompliance with the California standard for the model year shall cause an engine manufacturer to be subject to: revocation or suspension of Executive Orders for the applicable engine families; enjoinder from any further sales, or distribution, of such noncompliant engine families, in the State of California pursuant to section 43017 of the Health and Safety Code; and all other remedies available under Part 5, Division 26 of the Health and Safety Code. Before seeking remedial action against the engine manufacturer, the Executive Officer will consider any information provided by the equipment manufacturer.

(E) (C)For each engine family, the engine manufacturer shall submit the total number of engines produced for sale in California, or the total number of engines produced for sale nationally, ninety (90) days after the end of the model year.

(2) Evaporative Requirements for All High Performance Engine Manufacturers and Boat Manufacturers:

(A) For 2009 and subsequent model year engines, each engine manufacturer must provide written instructions, as part of the installation materials provided to boat manufacturers, to use enhanced evaporative control systems on any boat that is manufactured for sale, sold, or offered for sale in California, or that is introduced, delivered or imported into California for introduction into commerce. The engine manufacturer shall also provide evidence to the Executive Officer, as part of its application for certification, that the supplier(s) of the enhanced evaporative control system has designed the system components to meet or exceed the diurnal and permeation design specifications listed in Table 2.2 throughout the useful life of the engine.

**Table 2.2 Sterndrive/Inboard Marine Evaporative Design Specifications**

	<u>PERMEATION STANDARDS<sup>1</sup></u> <i>[grams per square meter per day]</i>	<u>DIURNAL STANDARD<sup>2</sup></u> <i>[grams per gallon per day]</i>	<u>TEST TEMPERATURES</u> <i>[degrees Celsius]</i>
Fuel Hoses	15.0	—	23 ± 2
Fuel Tank	1.5	—	28 ± 2
Trailerable Boat	—	0.40	25.6 – 32.2
Nontrailerable Boat	—	0.16	27.6 – 30.2

1. Fuel hoses and tank permeation testing requires fuel with 10% ethanol content.

2. Diurnal testing requires fuel with 9 pounds per square inch (psi) Reid Vapor Pressure volatility and a 24-hour fuel temperature cycle.

(B) For 2009 and subsequent model year engines, each boat manufacturer must install an enhanced evaporative control system on every boat that is manufactured for sale, sold, or offered for sale in California that uses a high performance engine.

(3) (2)Compliance with the standards on a corporate averaging basis is calculated as follows:

$$\frac{\sum_{j=1}^n (PROD_{jx})(EL_{jx})}{\sum_{j=1}^n (PROD_{jx})} = \text{Corporate Average}$$

$$\frac{\sum_{j=1}^n (PROD_{jx})(EL_{jx})(P_{jx})}{\sum_{j=1}^n (PROD_{jx})(P_{jx})} = \text{Corporate Average}$$

where:

- n = Total number of engine families available for averaging
- PROD<sub>jx</sub> = Number of engines in engine family j produced for sale in California in model year x.
- EL<sub>jx</sub> = The measured NMHC+NO<sub>x</sub> emission levels for engine family j in model year x; or for engines > 485 kW, the manufacturer may choose to use 30 g/kW-hr as per paragraph (F) below.
- P<sub>jx</sub> = The average power in kW (sales-weighted) of engine family j produced for sale in California in model year x. Engine power must be calculated using SAE standard J1228, November 1991, incorporated herein by reference.
  - (A) During the engine manufacturer's production year, for each engine family, the engine manufacturer shall provide the Executive Officer within 45 days after the last day in each calendar quarter the total number of spark-ignition marine engines produced for sale in California and their applicable EL(s).
  - (B) The Executive Order certifying the California production for a model year must be obtained prior to the issuance of certification Executive Orders for individual engine families for the model year.
  - (C) The engine manufacturer's average NMHC+NO<sub>x</sub> exhaust emissions must meet the corporate average standard at the end of the engine manufacturer's production for the model year. At the end of the model year, the manufacturer must calculate a corrected corporate average using sales or eligible sales rather than projected sales.

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(F) ~~Engines exceeding 485 kilowatts maximum rated power. In lieu of exhaust emission testing, manufacturers may certify using a default exhaust emissions level of 30.0 grams per kilowatt-hour of NMHC+NO<sub>x</sub> in their corporate averaging calculation.~~

(4) (3) Alternate Requirements for Standard Performance Manufacturers:

(A) Requirements of engine manufacturers and boat manufacturers under Option 2 and using Low Permeation Fuel Line Hose:

(A) 1. Each engine manufacturer that chooses Option 2 must provide written instructions, as part of the installation materials provided to purchasers of the engine, to use Low Permeation Fuel Line Hose for the primary fuel line connecting the fuel tank to the engine of any boat that is manufactured for sale, sold, or offered for sale in California, or that is introduced, delivered or imported into California for introduction into commerce.

(B) 2. Each boat manufacturer must install Low Permeation Fuel Line Hose for the primary fuel line connecting the fuel tank to the engine of any boat that is manufactured for sale, sold, or offered for sale in California that uses an engine from a manufacturer that chooses Option 2.

(4) (B) Supplemental Measures: Prior to Model Year 2007 certification, manufacturers choosing Option 2 may request Executive Officer approval of a supplemental measure as an alternative to meeting the requirements of paragraph (b)(3). In determining whether to approve a request, the Executive Officer will consider the following:

(A) 1. Whether the proposed supplemental measure would achieve reductions in NMHC+NO<sub>x</sub> equivalent to using Low-Permeation Fuel Line Hoses,

(B) 2. The engine manufacturer's measures to ensure successful implementation of the proposed supplemental measure,

- (C) 3. The durability of the proposed supplemental measure, and
- (D) 4. Any additional information the Executive Officer deems relevant.

(5) Alternate Requirements for Large Volume and Qualified Intermediate Volume Manufacturers.

In lieu of complying with the 5.0 g/kW-hr HC+NO<sub>x</sub> exhaust standard in Table 2.1(b) for high performance engines, a large volume or qualified intermediate volume engine manufacturer may certify high performance engines to the same HC+NO<sub>x</sub> exhaust standards as required for small volume manufacturers in Table 2.1(b) provided that they do either (A) or (B):

A. The manufacturer ensures that a sufficient number of boats using standard performance engines are equipped with enhanced evaporative control systems to fully compensate for the change in emission benefits from allowing compliance to the less stringent standard. Unless a lower percentage is demonstrated sufficient by the certifying manufacturer, a minimum of fifteen percent annually of the manufacturer's standard performance engine production for California must be installed in boats equipped with enhanced evaporative control systems. Beginning with the 2009 model year and for all model years thereafter, the following would apply:

1. Each engine manufacturer must provide written instructions, as part of the installation materials provided to purchasers of the engine, to use enhanced evaporative control systems on any boat that is manufactured for sale, sold, or offered for sale in California, or that is introduced, delivered or imported into California for introduction into commerce that uses a standard performance engine intended to qualify the engine manufacturer to certify its high performance engines using the HC+NO<sub>x</sub> standards intended for small volume high performance manufacturers in Table 2.1(b) of this section. The engine manufacturer shall also provide evidence to the Executive Officer, as part of its application for certification, that the supplier(s) of the enhanced evaporative control system has designed the system components to meet or exceed the diurnal and permeation design specifications listed in Table 2.2 throughout the useful life of the engine.



2. Each boat manufacturer must install an enhanced evaporative control system on every boat that is manufactured for sale, sold, or offered for sale in California that uses a standard performance engine intended to qualify the engine manufacturer to certify its high performance engines using the HC+NO<sub>x</sub> standards intended for small volume high performance manufacturers in Table 2.1(b) of this section.

B. The manufacturer reduces by other means emissions sufficient to fully compensate for the change in emission benefits from allowing compliance to the less stringent standard.

1. The manufacturer must submit a plan prior to certification of any high performance engine family. The Executive Officer must approve a plan before certifying any of the manufacturer's engine families. To be approved, the plan must meet the following criteria:

i. The total emissions benefit of the measures must provide reductions equivalent to the 5.0 g/kw-hr HC+NO<sub>x</sub> standard.

ii. The emissions reductions achieved from the measures must be verifiable.

iii. The measures must be enforceable.

iv. Except as allowed by Sections 2442(g)(2), or 2442(g)(3), no engine families can exceed the emissions standards in 2442(b).

v. The plan must include backstop provisions to be followed in the event that a measure or measures are not able to be fully implemented.

2. If the manufacturer does not implement the plan as approved, the Executive Officer may rescind certification of the affected engine families until a revised plan is approved.

(c) Not-to-Exceed (NTE) Limits

Exhaust emissions from all new model year 2010 and later spark-ignition marine engines subject to the standards in Tables 1.1, 1.2, and 2.1(a) of § 2442, and measured according to the methods in Part I, section 20., paragraph (c) of the incorporated Test Procedures, must not exceed the applicable NTE limits defined as follows:

(1) NTE limits are calculated for each pollutant as the product of the individual standard (STD) for that pollutant and the applicable NTE multiplier (M). The mathematical expression of this equation is "NTE Limit = (STD) × (M)."

(A) (STD) is defined as either:

1. the emission standard specified in Tables 1.1, 1.2, or 2.1(a) of § 2442 for each pollutant for an engine family not certified using averaging, or;
2. the FEL (or corporate averaging equivalent) for each pollutant for an engine family certified using any form of averaging.

(B) (M) is defined as follows:

1. For engine families certified with a catalytic converter, the values listed in Table 2.3 below shall apply across the applicable zone specified in Part I, section 20., paragraph (c) of the incorporated Test Procedures; or

Table 2.3  
NTE Multipliers for Catalyst-Equipped Engines

<u>Pollutant</u>	<u>Subzone 1</u>	<u>Subzone 2</u>
<u>HC+NO<sub>x</sub></u>	<u>1.50</u>	<u>1.00</u>
<u>CO</u>	<u>N/A</u>	<u>1.00</u>

2. For two-stroke engine families certified without a catalytic converter, the values listed in Table 2.4 below shall apply. Compliance with the NTE Limits for these engine families shall be based on the weighted discrete mode emissions measurement method specified in Part I, section 20., paragraph (c) of the incorporated Test Procedures; or

Table 2.4  
NTE Multipliers for Two-Stroke Engines without Catalysts

<u>Pollutant</u>	<u>All Test Points</u>
<u>HC+NO<sub>x</sub></u>	<u>1.2</u>
<u>CO</u>	<u>1.2</u>

3. For all other engine families that do not meet the criteria in (c)(1)(B)1. or (c)(1)(B)2. above, the values listed in Table 2.5 below shall apply across the applicable zone specified in Part I, section 20., paragraph (c) of the incorporated Test Procedures.

Table 2.5  
NTE Multipliers for Four-Stroke Engines without Catalysts

<u>Pollutant</u>	<u>Subzone 1</u>	<u>Subzone 2</u>
<u>HC+NO<sub>x</sub></u>	<u>1.40</u>	<u>1.60</u>
<u>CO</u>	<u>1.50</u>	<u>1.50</u>

- (2) Each NTE Limit shall be rounded to the same number of decimal places as the applicable standard in Tables 1.1, 1.2, or 2.1(a) of § 2442 for each pollutant.
- (3) NTE limits do not apply in the 2010 through 2012 model years to engine families that are certified based on carryover emission data from the 2009 model year. This may include models that were certified to federal requirements only, so long as no new testing is otherwise required per the provisions for certification and the issuance of an Executive Order contained in this article or the test procedures incorporated by reference in § 2447.
- (4) NTE limits do not apply to high performance engines.
- (d) Voluntary Standards. Model Year 2009 and later spark-ignition marine engines:
- (1) Manufacturers may voluntarily certify their engines to the full useful life exhaust and evaporative emission standards in Table 3 below.
- (2) Marine vessels powered by engines certified to the voluntary standards in Table 3 below and equipped with a fully compliant OBD-M system (see § 2444.2) shall display a five-star consumer/environmental emission label (see § 2443.2 and § 2443.3).

**Table 3 - Voluntary Standards**

HC <sup>1</sup> +NO <sub>x</sub> STANDARD <i>[grams per kilowatt-hour]</i>	CO STANDARD <i>[grams per kilowatt-hour]</i>	PERMEATION STANDARDS <i>[grams per square meter per day]</i>		DIURNAL STANDARD <sup>2</sup> <i>[grams per gallon per day]</i>
		Hose <sup>3</sup>	Tank <sup>4</sup>	
2.50	50.0	15.0	1.5	0.4

1. The exhaust standard includes total hydrocarbons

2. Diurnal testing assumes a trailerable boat and requires fuel with 9 pounds per square inch (psi) volatility and a 24 hour fuel temperature cycle of 25.6 to 32.2 °Celsius

3. Fuel line permeation testing requires gasoline fuel with 10% ethanol content and must be performed at a test temperature of 23 ± 2 °Celsius

4. Fuel tank permeation testing requires gasoline fuel with 10% ethanol content and must be performed at a test temperature of 28 ± 2 °Celsius

(3) Spark-ignition marine engines certified to the voluntary standards are subject to the same in-use compliance and recall requirements as engines certified to the required exhaust and evaporative standards.

(e) New Replacement Engine Requirements for Engine Manufacturers. A new spark-ignition marine engine produced solely to replace an engine originally manufactured in accordance with the requirements of § 2442 shall be identical in specifications to the most stringent certified emissions configuration currently available that can be installed in a vessel or personal watercraft without unreasonable modifications, as determined by the Executive Officer. A new replacement engine with emissions performance less than maximum stringency shall be allowed only if all engines of greater stringency are incompatible with the vessel or personal watercraft and so long as the emissions performance of the new replacement engine is at least as stringent as that of the engine being replaced. New replacement engines that do not comply with current year emission requirements must be labeled as follows:

“SALE OR INSTALLATION OF THIS ENGINE FOR ANY PURPOSE OTHER THAN TO REPLACE AN ENGINE OF SIMILAR OR LESS STRINGENT EMISSIONS PERFORMANCE IS A VIOLATION OF CALIFORNIA LAW SUBJECT TO CIVIL PENALTY.”

(e)(f) The test equipment and test procedures for determining compliance with these standards are set forth in Parts III and IV, respectively, of the “Test Procedures.”

(g) Special Provisions for Engine and/or Vessel Manufacturers

(1) Jet Boat Engines

- (A) Jet boat engine families previously certified to the HC+NO<sub>x</sub> standards for outboard engines and personal watercraft in § 2442(a) may continue to be certified to those standards until 2012 with the additional requirement for 2010 and subsequent model years to comply with the applicable carbon monoxide standards for OB/PWC engines in Table 1.2.
- (B) Beginning in 2010, all new jet boat engine families shall comply with the standards for sterndrive/inboard engines in § 2442(b) upon introduction, except that these new jet boat engine families may be cross-category averaged with any other jet boat or personal watercraft engine family to comply with those standards until 2012.
1. Notwithstanding subparagraph 2. below, an engine family certified to the § 2442(a) standards prior to 2010, but not previously used in a jet boat application would be considered a new jet boat engine family in 2010.
  2. Replacements for discontinued jet boat engine families. In 2010 and 2011, if a jet boat engine certified to the § 2442(a) standards prior to 2010 is discontinued, the manufacturer may introduce a replacement engine family that complies with the § 2442(a) standards, provided that the replacement engine family is certified to an FEL at or below the certified emissions level of the family it replaces.
- (C) Jet boat engines previously certified in the same engine family with personal watercraft engines must be certified separately and to a unique engine family beginning in 2012. All other jet boat engines, including replacements for discontinued jet boat engine families, must be certified separately and to a unique engine family beginning in 2010.
- (D) The OBD-M requirements in § 2444.2 would apply to new jet boat engine families in 2010 and to all jet boat engine families in 2012.

(2) Discontinuation of Marinized Sterndrive/Inboard Engines.

Sterndrive/inboard engine manufacturers who marinize base engines produced by another manufacturer may request a discontinuation allowance from the Executive Officer, subject to the following:

- (A) The base engine manufacturer has announced that it plans to discontinue the base engine.
- (B) Each marinizer may have a discontinuation allowance for only one engine family in effect at any time. As an alternative to the "one engine family" stipulation, manufacturers may petition the Executive Officer to allow a modified grouping of engines based on factors that logically link the engines to be discontinued including, but not necessarily limited to, the pre-maritized base configuration of the engines (e.g., the same base engine offered in one family with fuel injection and another family with carburetion).
- (C) The discontinuation allowance would allow the marinizing manufacturer to continue to certify the engine family to be discontinued to emission levels that are less stringent than the standards otherwise required for sterndrive/inboard engines in § 2442 (b) for a total of four model years, provided that on a corporate average basis, the manufacturer meets the required standards in § 2442 (b).
- (D) Manufacturers shall not certify engine families to emission levels less stringent than those in effect for previous model year versions of the same or similar engine family. Fluctuations in certification levels from year to year due to component variation would not violate this prohibition unless the fluctuations result in an exceedance of the standards to which the engine family was previously certified.
- (E) Manufacturers shall comply with all applicable OBD-M and evaporative requirements in effect for:
1. any previously uncertified engine family certified for the first time under paragraph (g)(2) of this section to emission levels that are less stringent than the standards otherwise required for sterndrive/inboard engines in § 2442 (b); and
  2. any current production engine family that has previously been certified with OBD-M or evaporative systems.
- (F) The applicable requirements of §§ 2442(b)(3), 2443.1, and 2443.2, including averaging, records keeping, reporting, and labeling, shall be applicable to manufacturers employing the discontinuation allowance provisions of this paragraph (g)(2).

(3) General Hardship Relief Provision

Manufacturers may petition the Executive Officer at any time to issue temporary relief from any of the requirements of this Article that would result in extreme financial or technical hardship to the manufacturer. The Executive Officer shall consider the following in determining whether or not to grant the manufacturer's request for relief and the extent to which relief is provided:

- (A) The manufacturer could not have reasonably anticipated the situation for which relief is requested and has substantiated that the circumstances resulting in the hardship were beyond its control to avert; and
  - (B) The manufacturer has exhausted all existing relief provisions in trying to remedy the situation; and
  - (C) The manufacturer has proposed an effective, implementable, and enforceable plan to make up for any emission benefits that would be lost should the requested relief be provided.
- (h) Practices for Rebuilding Engines. The rebuilding practices described in Part I, Section 7 of the incorporated test procedures shall apply to all spark-ignition marine engines subject to the requirements of § 2442 that are rebuilt after December 31, 2009, including those engines that were originally manufactured on, or prior to, December 31, 2009.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.  
Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

**§ 2443.1. Emission Control Labels - Model Year 2001 and Later Spark-Ignition Marine Engines.**

(a) \*\*\*\*\*

(b) Applicability. This section applies to:

- (1) Model year 2001 and later spark-ignition personal watercraft and outboard marine engines and model year 2003 and later spark-ignition ~~inboard~~ and sterndrive/inboard marine engines, which have been certified to the applicable emission standards pursuant to Health and Safety Code section 43013;

\*\*\*\*\*

(c) Engine Label and Location.

\*\*\*\*\*

- (2)
  - (B) ~~Inboard and Sterndrive/Inboard~~ Inboard Engines. In selecting an acceptable location, the engine manufacturer must consider visibility and the possibility of accidental damage (e.g., possibility of tools or sharp instruments coming in contact with the label). The engine label must be affixed in such a manner that it cannot be removed without destroying or defacing the label. The engine label must contain the unique identification number that has been assigned to the engine, pursuant to subsection (a) of this section. If the engine manufacturer claims there is inadequate space to attach the label, the Executive Officer will determine a suitable location.

\*\*\*\*\*

(4) The engine label must contain the following information:

(A) \*\*\*\*\*

(B) The full corporate name or trademark of the engine manufacturer.

- (i)
  - 1. An engine manufacturer may request the Executive Officer's approval to delete its name and trademark, and substitute the name and trademark of another engine



manufacturer, original equipment manufacturer or third-party distributor.

(ii)

2. Approval under paragraph (4)(B)(i)1. above does not relieve the engine manufacturer granted an engine family Executive Order of any requirements imposed by these provisions on the applicable engines.

\*\*\*\*\*

- (D) Identification of the Exhaust and/or Evaporative Emission Control System(s) (Abbreviations may be used and must conform to the nomenclature and abbreviations provided in the latest revision of the Society of Automotive Engineer's (SAE) procedure J1930, "Electrical/Electronic Systems Diagnostic Terms, Definitions, Abbreviations and Acronyms", and as specified in section 1977, Title 13, California Code of Regulations).

\*\*\*\*\*

- (G) An unconditional statement of compliance with the appropriate model year California regulations. For example, "THIS ENGINE CONFORMS TO (model year) CALIFORNIA EMISSION REGULATIONS FOR SPARK-IGNITION MARINE ENGINES." For an engine family certified in California with an FEL different from the FEL assigned federally for the engine family, the following statement shall be appended to the unconditional statement of compliance: "...AND IS CERTIFIED TO (specify FEL) g/kW-hr HC+NO<sub>x</sub> ENGINE FAMILY EXHAUST EMISSION STANDARD IN CALIFORNIA."

- (H) The engine and evaporative family identification(s) (i.e., engine and, where applicable, evaporative family name(s)). The engine and evaporative family identification(s) shall be in accordance with the current format(s) used by the United States Environmental Protection Agency.

\*\*\*\*\*

- (d) ~~For Inboard and Stern Drive~~/Inboard Engines used solely for Competition.

\*\*\*\*\*

- (4) \*\*\*\*\*

- (B) The full corporate name or trademark of the engine manufacturer.

(i)

1. An engine manufacturer may request the Executive Officer's approval to delete its name and trademark, and substitute the name and trademark of another engine manufacturer, original equipment manufacturer or third-party distributor.

(ii)

2. Approval under paragraph (4)(B)(i)1. above does not relieve the engine manufacturer granted an engine family Executive Order of any requirements imposed by these provisions on the applicable engines.

\*\*\*\*\*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.  
Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

§ 2443.2. Consumer / Environmental Label Requirements.

(a)

\*\*\*\*\*

(b) Applicability. This section applies to:

- (1) Model year 2001 and later spark-ignition personal watercraft and outboard marine engines and model year 2003 and later spark-ignition ~~inboard and sterndrive~~/inboard marine engines, which have been certified to the applicable emission standards pursuant to Health and Safety Code section 43013;

\*\*\*\*\*

(c)

\*\*\*\*\*

- (1) Facsimiles of the label format are shown in Figure 1.

Figure 1



(NOTE: Labels are not to scale.)

(A) The engine manufacturer must ensure that the label has the following characteristics:

(i)

1. Oval shape;

(ii)

2. Dimensions of no less than three inches wide by two and a half inches high, except that it may be no less than

two inches by one and two-thirds inches high for engines that have power outputs of 11.2 kW (15 hp) or less;

(iii)

3. Watermark

(i) For all except five star labels, Aa watermark as shown in Figure 2 that is a clear laminate. The watermark must cover the entire label and be screened at no less than fifteen percent; and

(ii) For five star labels, a colored or black and white watermark consisting of the central portion of the California State flag as shown in the five star label format in Figure 1. The watermark must cover the entire label and be screened at no less than fifteen percent; and

(iv)

4. All written information required by paragraph (c)(4)(B) must be in the English language and the font must be sans serif. The characters must be a minimum of two (2) millimeters in height except as specified in paragraph (b)(1)(B)(i)(d)(c)(1)(B)5., and of a color that contrasts with the background on which it is displayed.

Figure 2



(B) Multiple levels of cleanliness. Progressively clean engines shall carry the following notations (as applicable):

(i)

1. An engine that has an FEL or that has been certified at or below the hydrocarbon plus oxides of nitrogen standard listed in Table 1 of this section for Tier 1 must include the phrase "LOW EMISSION" and a single star symbol as shown in Figure 1.

(ii)

2. An engine that has an FEL or that has been certified at or below the hydrocarbon plus oxides of nitrogen standard listed in Table 1 of this section for Tier 2 must include the phrase "VERY LOW EMISSION" and two star symbols as shown in Figure 1.

(iii)

3. An engine that has an FEL or that has been certified at or below the hydrocarbon plus oxides of nitrogen standard listed in Table 1 of this section for Tier 3 must include the phrase "ULTRA LOW EMISSION" and three star symbols as shown in Figure 1.

(iv)

4. An engine that has an FEL or that has been certified at or below the hydrocarbon plus oxides of nitrogen standard listed in Table 1 of this section for Tier 4 must include the phrase "SUPER ULTRA LOW EMISSION" and four star symbols as shown in Figure 1.

5. An engine that has an FEL or that has been certified at or below the hydrocarbon plus oxides of nitrogen standard listed in Table 1 of this section for Tier 5 must include the phrase "LEVEL FIVE EXTREMELY CLEAN" and five star symbols as shown in Figure 1.

Table 1.

Hydrocarbon plus Oxides of Nitrogen Standards (in g/kW-hr)		
<i>Tier</i>	<i>P &lt; 4.3</i>	<i>P ≥ 4.3</i>
1	81.00	$(0.25 \times (151+557/P^{0.9})) + 6.0$
2	64.80	$(0.20 \times (151+557/P^{0.9})) + 4.8$
3	30.00	$(0.09 \times (151+557/P^{0.9})) + 2.1$
4	5.0	5.0
<u>5</u>	<u>2.5</u>	<u>2.5</u>

Where P means the average power in kW (sales-weighted) of the subject engine family.

(iv)

6. All phrases encircling the top portion must have block characters that are a minimum of five (5) millimeters in height except that the characters may be three (3) millimeters for labels sized as allowed pursuant to paragraph (c)(1)(A)(i)2. for engines that have power outputs of 11.2 kW (15 hp) or less.

(C) Language other than that specified in paragraph (b)(1)(B) must not be used unless permitted by the Executive Officer.

(D) The color of the outer oval and stars on the labels must contrast with the engine cover or watercraft hull. The color of the interior oval (i.e., background for the stars) must contrast with the color of the outer oval and stars.

(2) Label Location. For outboard engines, a single label must be permanently affixed to the back of the engine cover or cowling. For personal watercraft, a single label must be affixed two to three inches to the right of the required location of the California Assigned Vessel Number displayed on the port side of the hull. For ~~inboard and sterndrive~~/inboard engines, labels must be affixed to the engine and to the port side of the hull, either to the right or left and in close proximity to the required location of the California Assigned Vessel Number. Each label must be manufactured and permanently affixed so that it cannot be removed without destroying or defacing the label, must be readily visible and must not be affixed to any location that is likely to be replaced during the engine's useful life. For the purposes of this paragraph, readily visible means that the label's shape and number of stars are discernible from a distance of 100 feet.

\* \* \* \* \*

(5) ~~For Inboard and Sterndrive~~/Inboard Marine Engines:

\* \* \* \* \*

(e) Replacement engines installed in hulls, cowlings or watercraft that had been previously labeled in accordance with these specifications must have identical or improved emissions to that of the original certified engine in accordance with the provisions in § 2442 (e).

\* \* \* \* \*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

**§ 2444.1. In-Use Compliance Testing and Recall Regulations – Model Year 2001 and Later Spark-Ignition Marine Engines.**

(a) Applicability. This section applies to model year 2001 and later spark-ignition personal watercraft and outboard marine engines, which have been certified to the applicable emission standards pursuant to Health and Safety Code section 43013. Spark-ignition ~~inboard and sterndrive/inboard~~ marine engines shall comply with the in-use compliance testing and recall requirements found in Title 13, California Code of Regulations, Section 2111 through 2140 and 2147.e

(b) \* \* \* \* \*

(3) \* \* \* \* \*

(B) \*~~e~~ \* \* \*

A minimum of two (2) engines per family provided that no engine fails any standard. For each failing engine, two (2) more engines must be tested until the total number equals ten.

For engine families of less than 50 engines (California sales) for the identified model year or for engine manufacturers who make less than or equal to 200 engines (California sales) for that model year, a minimum of one engine per family provided that this engine does not fail any standard. If this engine fails, two (2) more engines shall be tested. For each additional engine failure, the engine manufacturer must continue testing two (2) additional engines until the total number ~~g~~ equals eleven.

3.e If an engine family was certified using carryover emission data and has been previously tested under paragraph (b)(3)(B) without an ordered recall, then only one engine for that family must be tested. If this engine fails any standard, testing must be conducted as outlined in paragraphs (b)(3)(B), as applicable.e

\*~~e~~ \* \* \*ee

(E) \* \*~~e~~ \*~~e~~e



(i)  
1. engine family production in California is less than or equal to 20 per year; or

(ii)  
2. engines cannot be obtained for testing because they are used substantially in watercraft that are not conducive to engine removal such as large watercraft where the engine cannot be removed without dismantling either the engine or the watercraft; or

(iii)  
3. other compelling circumstances associated with the structure of the industry and uniqueness of spark-ignition marine engine applications. Such alternatives shall be designed to determine whether the engine family is in compliance in-use.

(F) \* \* \* \* \*

(G) \* \* \* \* \*

(i)  
1. A test engine must have a maintenance and use history representative of actual in-use conditions.

- a. The engine manufacturer must obtain information from the end users regarding the accumulated usage, maintenance, operating conditions and storage of the test engines.
- b. Documents used in the procurement process must be maintained as required by section 30 of the Test Procedures.

(ii)  
2. The engine manufacturer may perform minimal "set-to-specification" maintenance on components of a test engine that are not subject to parameter adjustment. Maintenance may include only that which is listed in the owner's manual for engines with the amount of service and age of the acquired test engine. Documentation shall be maintained and retained as required by section 30 of the Test Procedures.

(iii)

3. At least one valid emission test, performed according to the test procedures outlined in Part IV of the Test Procedures is required for each in-use engine.

(iv)  
4. The Executive Officer may waive portions or requirements of the test procedures, if any, that are not necessary to determine in-use compliance.

(v)  
5. If a selected in-use engine fails to comply with any applicable emission standard, the engine manufacturer must determine the reason for noncompliance. The engine manufacturer must report all such reasons of noncompliance within fifteen days of completion of testing.

\*\*\*\*\*

\*\*\*\*\*

(e)

(4) Record keeping and Reporting Requirements.

(A) \*\*\*\*\*

(i)  
1. Engine family and emission recall campaign number designated by the engine manufacturer.

(ii)  
2. Date engine/watercraft owner notification was begun, and date completed.

(iii)  
3. Number of engines involved in the voluntary or ordered recall campaign.

~~(iv)~~  
4. Number of engines known or estimated to be affected by the nonconformity and an explanation of how this number was determined.

~~(v)~~  
5. Number of engines inspected pursuant to the voluntary or ordered recall plan.

~~(vi)~~  
6. Number of inspected engines found to be affected by the nonconformity.

~~(vii)~~  
7. Number of engines receiving repair under the recall plan and a listing of these engines' engine identification numbers.

~~(viii)~~  
8. Number of engines determined to be ineligible for recall action due to removed or modified parts.

~~(ix)~~  
9. A copy of any service bulletins transmitted to dealers or other authorized repair facilities which pertain to the nonconformity to be corrected and that have not previously been reported.

~~(x)~~  
10. A copy of all communications transmitted to engine/watercraft owners that relate to the nonconformity and that have not previously been submitted.

(B) If the engine manufacturer determines that any of the information submitted pursuant to paragraph (4)(A) above has changed or was incorrect, revised information and an explanation must be submitted. Responses to subsections (4)(A)~~(v)~~5., ~~(vi)~~6., ~~(vii)~~7., ~~(viii)~~8. and ~~(ix)~~9. above shall be cumulative totals.

(C) \*\*\*\*\*

~~(i)~~  
1. To whom notification was given;

~~(ii)~~

2. Whose engines were repaired or inspected under the recall plan; and

(iii)

3. Whose engines were determined not to qualify for repair due to removed or modified components.

(D)

\*\*\*\*\*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.

Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

(3) High Performance Engines

All 2009-2010 model year spark-ignition high performance sterndrive/inboard marine engines shall comply with the requirements for subsections (b) through (i) below, except as noted and applicable. For all 2011 model year and later spark-ignition high performance sterndrive/inboard marine engines, the requirements in italics shall also apply.

This section shall be implemented according to the provisions of the following subsections or by means determined by the Executive Officer to be equivalent in meeting the requirements of this section.

~~This section shall be implemented according to the provisions of the following subsections or by means determined by the Executive Officer to be equivalent in meeting the requirements of this section.~~

(b) General requirements.

- (1) Spark-ignition sterndrive and inboard/inboard marine engines sold as new shall be equipped with an integrated malfunction detection and notification system, hereinafter known as On-Board Diagnostics-Marine (OBD-M) system, to identify emission-related malfunctions of the catalyst, fuel system, primary oxygen sensors used for feedback fuel control, secondary oxygen sensors (if

equipped) used for catalyst monitoring, computer-sensed comprehensive components, and the on-board computer itself, by means of diagnostic trouble codes stored in non-volatile computer memory. For this section, a computer-sensed comprehensive component is any electronic device that:

- (A) provides information to the on-board computer and significantly impacts emissions when malfunctioning; or
  - (B) is used to enable or disable any other OBD-M monitoring strategy.
- (2) ~~For model years 2010 and subsequent, the OBD-M system shall not be required to identify engine misfire per the provisions in subsection (c)(5) unless such monitoring is determined necessary by the Executive Officer to preserve or protect the catalyst system except as otherwise permitted in these regulations. The Executive Officer shall (as part of the in-water testing and development program to be conducted in conjunction with U.S. EPA, the U.S. Coast Guard, the marine industry, and catalyst manufacturers) identify whether, and to what extent, misfire in spark-ignition inboard and stern-drive marine engines may affect catalyst durability and performance. If the Executive Officer determines that engine misfire is a significant factor in reducing the durability and/or performance of marine catalysts, engine manufacturers shall be required to incorporate appropriate misfire detection diagnostics into the OBD-M system. In that case, the provisions in subsection (c)(5) shall be considered sufficient for satisfying the obligation to monitor misfire. Alternate misfire monitoring strategies shall be considered by the Executive Officer and may be implemented in lieu of subsection (c)(5) if demonstrated by the engine manufacturer to provide an equivalent degree of catalyst protection. Otherwise the provisions of that subsection shall be voluntary. In making a determination, the Executive Officer shall consider the cost effectiveness of requiring additional monitoring to address the concerns identified by the test program in addition to the leadtime necessary to modify existing hardware and software, to add misfire detection hardware (e.g., sensors) if necessary, and to develop engine-specific calibrations to accommodate misfire monitoring. Notwithstanding, misfire monitoring shall not be required prior to the 2009 model year, and may be delayed beyond that date pending Executive Officer discretion.~~
- (3) The OBD-M system shall not be required to detect any emissions-related malfunction that prevents the engine from starting. The OBD-M system shall not be required to monitor any emissions-related component or system if the only reliable way to accomplish such monitoring would either significantly impair

engine/vessel operability or decrease the safety involved with operating the engine/vessel.

- (4) OBD-M systems shall have the capability to activate an audio or visual alert device located on the marine vessel to inform vessel occupants in the event of a malfunction, and to transmit diagnostic information locally via a standardized data link connector.
- (5) Spark-ignition sterndrive and /inboard marine vessels shall be equipped with an audio alert device and/or visual alert device that is compatible with the activation function of the OBD-M system on the installed engine.
  - (A) If equipped, the audio alert device shall provide sufficient volume and intensity to be readily perceptible to vessel occupants during normal modes of vessel operation and occupant activity, but shall not exceed applicable maximum noise levels as set by authorized federal or State agencies. Further, the audio alert device shall in no way impede the function of required sound-signaling devices, or other safety-related devices, already present on the vessel. The audio alert device shall sound briefly in the engine-run key position before engine cranking to indicate that the audio alert device is functional.
  - (B) If equipped, the visual alert device shall provide sufficient activation and be located such that it is readily visible under normal lighting conditions, but shall in no way impede the function of any visual distress-signaling device, fog signal, or navigational light. The visual alert device shall activate in the engine-run key position before engine cranking to indicate that the visual alert device is functional and shall, when activated, display the phrase "Service Required" or an equivalent standardized phrase or symbol to be determined as specified in Subsection (h).
- (6) Malfunction thresholds for catalyst, misfire, fuel system, oxygen sensor, and computer-sensed comprehensive component diagnostics shall be determined by the engine manufacturer. However, the engine manufacturer must demonstrate that the determination of these thresholds is sufficient for detecting emission-related malfunctions in a timely and meaningful manner subject to Executive Officer approval (see Subsection (f)(2)).
- (7) Regarding diagnostic system monitoring and audio/visual alert device activation requirements, engine manufacturers are required to define monitoring conditions that are representative of typical

in-use operation, and which will result in the routine execution and completion of all OBD-M diagnostics in-use.

- (8) For model years 2007-2008 on engines complying with paragraph (a)(1) of this section, and for model years 2008-2009 on engines complying with paragraph (a)(2) of this section, and for model years 2009-2010 on engines complying with paragraph (a)(3) of this section, activation of the audio/visual alert device upon detection of excessive engine misfire or a catalyst, fuel system, or oxygen sensor malfunction shall be optional. However, there are no exemptions from storing diagnostic trouble codes in non-volatile computer memory during these model years for any malfunction. The OBD-M must be capable of fully communicating stored information to a generic scan tool via the standardized data link connector.
- (9) Engine manufacturers may employ alternate statistical audio/visual alert device activation and diagnostic trouble code storage protocols to those specified in these requirements, subject to Executive Officer approval, based on comparable timeliness in detecting a malfunction and evaluating system performance.
- (10) Should emission control devices/strategies be introduced on the engine in addition to those identified herein as requiring monitoring (e.g., exhaust gas recirculation), the engine manufacturers shall notify the Executive Officer and submit a plan for monitoring the new device/strategy prior to its incorporation into the OBD-M system. This would not apply to carbon canisters, non permeable fuel tanks, or low-permeation hoses ~~should they be used to comply with the supplemental emission reduction requirements of evaporative requirements for high performance engines in § 2442(b)(2), the Option 2 requirements for standard performance engines in § 2442(b)(4), or the alternative requirements for large volume dual category manufacturers in § 2442(b)(5) in Section 2442(b)(1).~~
- (11) Engine manufacturers may request Executive Officer approval to disable any diagnostic strategy at ambient engine starting temperatures below forty (40) degrees Fahrenheit (low ambient temperature conditions may be determined based on intake air or engine coolant temperature at engine starting), and at elevations above six thousand five hundred (6,500) feet above sea level provided the engine manufacturer submits data and/or an engineering evaluation which adequately demonstrate that monitoring would be unreliable when such conditions exist. Notwithstanding, diagnostic system disablement may be requested at other ambient engine starting temperatures if the engine manufacturer adequately demonstrates with data and/or an



engineering evaluation that misdiagnosis would occur due to the impact of such ambient temperatures on the performance of the component itself.

- (12) Engine manufacturers may disable individual monitors that can be affected by running out of fuel, provided disablement will not occur when the fuel level is above fifteen percent of the nominal capacity of the fuel tank.
- (13) The Executive Officer may grant an extension for compliance with the requirements of this section, with respect to an engine model or engine family, if the engine manufacturer demonstrates that a present electronic control system cannot be modified in time for the ~~2007, or 2008, or 2009~~ model year, as applicable per subsection (a) of this section, because major design changes, not consistent with the engine manufacturer's projected changeover schedule, would be needed to comply with the provisions of the regulation. The period of extension shall not exceed that period of time necessary to enable modification of the electronic control system in accordance with the engine manufacturer's projected changeover schedule, or a period of two years, whichever first occurs. Engine manufacturers requesting an extension shall, no later than six months prior to the applicable model year, submit to the Executive Officer a written request for exemption, setting forth the required demonstration and specifying the period for which the extension is requested.
- (14) All engines certified to the 5.0 gram per kilowatt-hour NMHC+NO<sub>x</sub> standard, including those engines certified using the corporate averaging provisions in 2442(b) and discontinuation allowance in 2442(g)(2), must be equipped with OBD-M for the engine's emission-related components. Notwithstanding, current production engines not yet required to possess an OBD-M system would not be required to incorporate OBD-M under the discontinuation allowance until the allowance had expired.

(c) Monitoring requirements.

(1) Catalyst monitoring.

(A) Purpose and scope:

(i)

1.

The diagnostic system shall monitor the catalyst system on spark-ignited marine engines to ensure that the performance of the catalyst has not been compromised due to engine misfire or other factors that can decrease catalyst durability.

(ii)

2.

Manufacturers of spark-ignited lean-burn marine engines may request that the Executive Officer exempt such applications from these catalyst monitoring requirements if it can be demonstrated that a reliable monitoring technology is not available. The Executive Officer shall approve such a request upon determining that all reasonable monitoring technologies have been considered to the extent possible.

(B) Malfunctioning criteria:

(i)

1.

The catalyst system shall be considered malfunctioning when the temperature of the measured catalyst(s) exceeds a threshold value, as determined by the engine manufacturer, indicating abnormally high operating temperature; or when the catalyst temperature fails to reach a minimum value, as determined by the engine manufacturer, indicating "light-off" of the catalyst after a manufacturer-specified time interval has elapsed.

(ii)

2.

Subject to executive officer approval, alternate malfunction criteria (e.g., correlating oxygen sensor frequencies to catalyst conversion efficiency) may be employed by the engine manufacturer if the alternate criteria are appropriate and would provide for enhanced monitoring capability.

(C) Monitoring conditions:

(i)

1.

The engine manufacturer shall define conditions for monitoring the catalyst with the constraints that the check shall:

- a. be conducted at the earliest acceptable opportunity encountered after the beginning of each operating cycle; and
- b. the monitoring system shall operate at least once per in-use operating cycle during which the engine manufacturer-defined monitoring conditions are met.

(D) Malfunctioning notification and diagnostic trouble code storage:

(i)

1. Upon detection of a catalyst malfunction, the audio/visual alert device shall be activated and a diagnostic trouble code stored no later than the end of the next operating cycle during which monitoring occurs provided the malfunction is again present.

(ii)

2. The diagnostic system shall temporarily disable catalyst monitoring when a malfunction exists that could affect the proper evaluation of catalyst efficiency.

(iii)

3. The monitoring method for the catalyst(s) shall be capable of detecting when a catalyst trouble code has been cleared (except diagnostic system self-clearing), but the catalyst has not been replaced (e.g., catalyst over-temperature approaches may not be acceptable).

(2) Fuel system monitoring.

(A) Purpose and scope:

The diagnostic system shall monitor the fuel delivery system for its ability to dynamically adjust fuel delivery.

(B) Malfunction criteria:

The engine manufacturer shall establish malfunction criteria to monitor the fuel delivery system. If the engine is equipped with fuel trim circuitry, the engine manufacturer shall include as one of the malfunction criteria the condition where the trim circuitry has used up all of the trim adjustment allowed within the engine manufacturer's selected limit(s). Engine manufacturers may compensate the criteria limit(s) appropriately for changes in altitude or for other similar identifiable operating conditions when they occur.

(C) Monitoring conditions:

The fuel system shall be monitored continuously for the presence of a malfunction.

(D) Malfunction notification and diagnostic trouble code storage:

(i)  
1.

For fuel systems with short-term trim only capability, the diagnostic system shall store a diagnostic trouble code after the fuel system has attained the criteria limit for an engine manufacturer-defined time interval sufficient to determine a malfunction. If the malfunction criteria limit and time interval are exceeded, the audio/visual alert device shall be activated and a diagnostic trouble code stored no later than the end of the next operating cycle in which the criteria and interval are again exceeded; unless operating conditions similar to those under which the problem was originally detected (manufacturer-defined conditions) have been encountered without such an exceedance, in which case the initial temporary code and stored conditions may be erased. Furthermore, if similar operating conditions are not encountered during forty (40) operating cycles subsequent to the initial detection of a malfunction, the initial temporary code and stored conditions may be erased.

(ii)  
2.

For fuel systems with long-term fuel trim capability, upon attaining a long-term based malfunction criteria limit independent of, or in combination with, the short-term trim system status, the audio/visual alert device shall be activated and a diagnostic trouble code stored no later than the end of the next operating cycle if the malfunction is again detected. If the malfunction is not detected during the second operating cycle, the audio/visual alert device shall be activated and a diagnostic trouble code stored no later than the next operating cycle in which the malfunction is again detected; unless operating conditions similar to those under which the problem was originally detected (manufacturer-defined conditions) have been encountered without an indication of a malfunction, in which case the initial temporary code and stored conditions may be erased. Furthermore, if similar operating conditions are not encountered during forty (40) operating cycles subsequent to the initial detection of a malfunction, the initial temporary code and stored conditions may be erased.

(3) Oxygen sensor monitoring.

(A) Purpose and scope:

(i)

1. The diagnostic system shall monitor the output voltage and response rate of all primary (fuel control) oxygen (lambda) sensors for malfunction. It shall also monitor secondary oxygen sensors when used as a monitoring device for proper output voltage and/or response rate. Response rate is the time required for the oxygen sensor to switch from lean-to-rich once it is exposed to a richer than stoichiometric exhaust gas mixture or from rich-to-lean when exposed to a leaner than stoichiometric exhaust gas mixture. As a precaution, measuring oxygen sensor switching frequency may not be an adequate indicator of oxygen sensor response rate, particularly at low speeds.

(ii)

2. Either the lean-to-rich or both the lean-to-rich and rich-to-lean response rates shall be checked. Response rate checks shall evaluate the portions of the sensor's dynamic signal that are most affected by sensor malfunctions such as aging or poisoning.

Engine manufacturers may observe the voltage envelope of the sensor when cycled at a frequency of 1.5 Hertz or greater, as determined by the engine manufacturer, to evaluate a slow response rate sensor (i.e., a slow sensor cannot achieve maximum and/or minimum voltage as will a good sensor, given a properly chosen switching frequency and fuel step change for the check). With Executive Officer approval, engine manufacturers may use alternative parameters to comply with this requirement such as voltage ranges and fuel-air switching frequencies based on a determination that the modifications will result in an accurate and timely evaluation of the sensor.

(iii)

3. For sensors with different characteristics, the engine manufacturer shall submit data and an engineering evaluation to the Executive Officer for approval based on showing equivalent evaluation of the sensor.

(B) Malfunction criteria:

An oxygen sensor shall be considered malfunctioning when the voltage, response rate, or other criteria, as determined by the engine manufacturer, are exceeded, or when sensor output characteristics are no longer sufficient (e.g., lack of sensor switching) for use as a diagnostic system monitoring device (e.g., for catalyst efficiency monitoring).

(C) Monitoring conditions:

(i)

1.

The engine manufacturer shall define conditions for monitoring the oxygen sensor(s) with the constraints that the check shall:

- a. be conducted at the earliest acceptable opportunity encountered after the beginning of each operating cycle; and
- b. operate at least once per in-use operating cycle during which the engine manufacturer-defined monitoring conditions are met.

(ii)

2.

For primary oxygen sensors(s) used for fuel control, the response rate and output voltage shall be monitored for malfunction after the engine has commenced closed-loop operation. If the oxygen sensor(s) is used as part of the monitoring strategy for the catalyst, the oxygen sensor(s) diagnostics should be scheduled to execute before the catalyst diagnostics begin.

(D) Malfunction notification and diagnostic trouble code storage: Upon detection of any oxygen sensor malfunction, the diagnostic system shall store a diagnostic trouble code and the audio/visual alert device shall activate no later than the end of the next operating cycle during which monitoring occurs provided the malfunction is again present.

(4) Computer-sensed comprehensive component monitoring.

(A) Purpose and scope:

The diagnostic system shall monitor for malfunction any computer-sensed electronic engine components not otherwise described in this subsection that provide input to

(directly or indirectly) the on-board computer, and that: 1) can affect emissions during any reasonable in-use operating condition, or 2) are used as part of the diagnostic strategy for any other monitored system or component.

(i)

1. The monitoring system shall have the capability of detecting, *at a minimum*, lack of circuit continuity *and out of range values to ensure proper operation of the input device*. The determination of out of range values shall include logic evaluation of available information to determine if a component is operating within its normal range (e.g., a low throttle position sensor voltage would not be reasonable at a high engine speed with a high mass airflow sensor reading). To the extent feasible, said logic evaluation shall be "two-sided" (i.e., verify a sensor output is not inappropriately high or low).

(ii)

2. Computer-sensed comprehensive components may include, but are not limited to, the engine speed sensor, crank angle sensor, knock sensor, throttle position sensor, coolant temperature sensor, cam position sensor, and other electronic components such as sensors and fuel injectors.

(iii)

3. The coolant temperature sensor shall be monitored for achieving a stabilized minimum temperature level that is needed to achieve closed-loop operation within an engine manufacturer-specified time interval after starting the engine. The time interval shall be a function of starting engine coolant temperature and/or a function of intake air temperature. Engine manufacturers may suspend or delay the diagnostic if the engine is subjected to conditions which could lead to false diagnosis (e.g., engine operation at idle for more than 50 to 75 percent of the warm-up time).

(B) Malfunction criteria:

Computer-sensed comprehensive components shall be considered malfunctioning when, *at a minimum*, lack of circuit continuity *or engine manufacturer-specified out-of-range values occur*.

(C) Monitoring conditions:

Computer-sensed components shall be monitored continuously for *proper range of values and circuit continuity*.

*For rationality monitoring (where applicable), engine manufacturers shall define appropriate operating conditions that are representative of typical in-use operation and will result in the routine execution and completion of all diagnostics in-use. Rationality monitoring shall occur at least once per operating cycle during which the engine manufacturer-defined monitoring conditions are met.*

(D) Malfunction notification and diagnostic trouble code storage:

Upon detecting a malfunction, the diagnostic system shall store a diagnostic trouble code and activate the audio/visual alert device no later than the end of the next operating cycle during which monitoring occurs provided the malfunction is again detected.

(5) Misfire monitoring.

~~The provisions in this subsection shall be considered voluntary unless otherwise determined by the Executive Officer according to subsection (b)(2) above.~~

(A) Purpose and scope:

The diagnostic system shall identify the occurrence of engine misfire that can result in damage to the catalyst system. Identification of the misfiring cylinder is not required, however all patterns of misfire must be identified regardless of whether it occurs in a single or multiple number of cylinders.

(B) Malfunctioning criteria:

The diagnostic system shall identify a malfunction when the total number of misfires evaluated in 200 crankshaft-revolution increments for each engine speed and load condition exceeds a percentage (determined by the engine manufacturer to cause damage to the catalyst system) of the total number of firing events in each increment. These threshold percentages shall be provided in the certification documentation. Subject to Executive Officer approval, an interval longer than 200 crankshaft-revolutions may be used. The engine manufacturer shall submit in the certification documentation catalyst temperature data versus percent misfire over the full range of engine speed and load conditions. Alternatively, catalyst temperature data may be submitted for every 500 rpm increment along the Propeller Law curve beginning



at engine idle and continuing throughout the "Not to Exceed Zone" for marine propulsion engines with Fixed- and Variable-pitch propellers, as defined in 40 CFR, section 94.106, (July 1, 2001), which is incorporated by reference herein. The data shall be obtained from a representative cross section (from small to large displacements) of an engine manufacturer's production. Up to three such engine evaluations shall be documented per engine manufacturer, though an engine manufacturer may submit more data, if desired. An engineering evaluation shall be provided for establishing malfunction criteria for the remainder of engine families in the engine manufacturer's product line. The Executive Officer shall waive the evaluation requirement each year if, in the judgment of the Executive Officer, technological changes do not affect the previously determined malfunction criteria.

(C) Monitoring conditions:

(i)

1. Monitoring for misfire shall be continuous from engine starting under all steady-state positive torque engine speeds and load conditions.

(ii)

2. As an exception to monitoring misfire during all positive torque operating conditions, engine manufacturers may disable misfire monitoring in the engine operating region bound by the positive torque line (i.e., engine load with the transmission in neutral), and the two following engine operating points:

- a. an engine speed of 3,000 rpm with the engine load at the positive torque line; and
- b. the redline engine speed (defined in section 2441) with the engine's manifold vacuum at four inches of mercury lower than that at the positive torque line.

Misfire detection systems unable to detect all misfire patterns under all required conditions shall be evaluated for compliance by the Executive Officer based on, but not limited to, the following factors:

- c. the magnitude of the region(s) in which misfire detection is limited,

- d. the degree to which misfire detection is limited in the region(s) (i.e., the probability of detection of misfire events),
- e. the frequency with which said region(s) are expected to be encountered in-use,
- f. the type of misfire patterns for which misfire detection is troublesome, and
- g. demonstration that the monitoring technology employed is not inherently incapable of detecting misfire under required conditions (i.e., compliance can be achieved on other engines).

The evaluation shall be based on the following misfire patterns:

- h. equally spaced misfire occurring on randomly selected cylinders,
- i. single cylinder continuous misfire; and
- j. paired cylinder (cylinders firing at the same crank angle) continuous misfire.

Further, with Executive Officer approval, the engine manufacturer may disable misfire monitoring or employ higher malfunction criteria when misfire cannot be distinguished from other effects (e.g., turbulence causing the propeller to alternately emerge from then re-submerge into the water.) when using the best reasonably available monitoring technology. The engine manufacturer shall present data and/or an engineering evaluation to the Executive Officer to justify the proposed action. Executive Officer approval shall be based on the extent to which monitoring is expected to be disabled in relation to the capabilities of the best available monitoring technologies as applied to other engines. However, any such disablement occurring within the first 5 seconds after engine starting shall not require Executive Officer approval. Additionally, for engines with greater than eight cylinders, the Executive Officer shall waive the requirements of this section provided the engine manufacturer submits data and/or an engineering evaluation which adequately

demonstrates that misfire detection throughout the required operating region cannot be achieved when employing proven monitoring technology (i.e., a technology that provides for compliance with these requirements on other engines) and provided misfire is detected to the fullest extent permitted by the technology.

(D) Malfunction notification and diagnostic trouble code storage:

(i)

1.

Upon detection of the level of misfire specified in subsection (b)(5)(B) above, the following criteria shall apply for audio/visual alert device activation and diagnostic trouble code storage:

- a. A temporary diagnostic trouble code shall be stored no later than after the third exceedance of the specified misfire level when operating in the region bound by modes 2 through 5 of the spark-ignition marine engine test cycle and no later than after the first exceedance of the specified misfire level when operating at any other engine speed and load condition during a single operating cycle. If the level of misfire is exceeded again (a single exceedance) during the following operating cycle, or the next operating cycle in which similar conditions are encountered (manufacturer defined conditions), the audio/visual alert device shall activate, a diagnostic trouble code shall be stored, and the audio/visual alert device shall remain continuously activated, even if the misfire ceases. The initial temporary code and stored conditions may be erased if misfire is not detected during the following operating cycle and similar conditions have been encountered without an exceedance of the specified misfire level. The code and conditions may also be erased if similar operating conditions are not encountered during forty operating cycles subsequent to the initial detection of a malfunction.
- b. Notwithstanding, in engines that provide fuel shutoff and default fuel control to prevent over fueling during misfire conditions, the audio/visual alert device need not activate

provided that the fuel shutoff and default control shall be activated as soon as misfire is detected. Fuel shutoff and default fuel control may be deactivated only to permit fueling outside of the misfire range.

- (d) Additional audio/visual alert device activation and diagnostic trouble code storage protocol.
  - (1) Audio/visual alert device activation: For all emission-related components/systems, upon final determination of a malfunction, the OBD-M system shall activate an audio or visual alert device.
    - (A) If so equipped, visual alert devices shall remain activated continuously whenever a malfunction has been identified by the OBD-M system, and may be deactivated only according to the provisions in paragraph (2) below, or with a scan tool after appropriate repairs have been effected.
    - (B) If so equipped, audio alert devices may remain activated continuously when a malfunction has been identified by the OBD-M system; however, the Executive Officer shall consider alternative strategies in which the audio alert is activated on a discontinuous, but repetitive, basis. To be acceptable, discontinuous audio alert strategies must convey a sense of urgency to vessel operators regarding the presence of OBD-M malfunctions.

Upon fulfillment of the standardization processes referred to in subsection (g) below, a protocol for audio alert device activation shall be specified authorizing only discontinuous activation. A standardized notification format is necessary to facilitate consumer association of the audio alert pattern with the identification of an OBD-M malfunction independent of manufacturer or platform. OBD-M system designers are encouraged to cooperate fully with each other and the ARB early on in this endeavor to minimize the redesigning of OBD- M audio alert activation algorithms once a standardized protocol has been finalized.

- (C) The diagnostic system shall store a diagnostic trouble code whenever the audio/visual alert device is activated. The diagnostic system shall activate the audio/visual alert device and shall store a diagnostic trouble code whenever the engine enters a default or "limp home" mode of operation. The diagnostic system shall activate the audio/visual alert device and shall store a diagnostic trouble code whenever the engine control system fails to enter closed-loop operation

(if employed) within an engine manufacturer specified minimum time interval.

- (2) Audio/visual alert device deactivation:
  - (A) *Misfire and Fuel System Malfunctions*: For *misfire* or fuel system malfunctions, the audio/visual alert device may be deactivated if the fault does not recur when monitored during three subsequent sequential operating cycles in which conditions are similar to those under which the malfunction was first determined.
  - (B) *All Other Malfunctions*: For all other faults, the audio/visual alert device may be deactivated after three subsequent sequential operating cycles during which the monitoring system responsible for activating the audio/visual alert device functions without detecting the malfunction and if no other malfunction has been identified that would independently activate the audio/visual alert device according to the requirements outlined above.
- (3) Erasing a diagnostic trouble code: The diagnostic system may erase a diagnostic trouble code if the same fault is not re-registered in at least forty (40) engine warm-up cycles, and the audio/visual alert device is not activated for that diagnostic trouble code.
- (e) Tampering protection: Computer-coded engine operating parameters shall not be changeable without the use of specialized tools and procedures (e.g. soldered or potted computer components or sealed (or soldered) computer enclosures). Subject to Executive Officer approval, engine manufacturers may exempt from this requirement those product lines that are unlikely to require protection. Criteria to be evaluated in making an exemption include, but are not limited to, current availability of performance chips, high performance capability of the engine, and sales volume.
- (f) Certification documentation: The engine manufacturer shall submit the following documentation for each engine family at the time of certification. With Executive Officer approval, one or more of the documentation requirements specified in this section may be waived or altered if the information required would be redundant or unnecessarily burdensome to generate:
  - (1) A written description of the functional operation of each monitoring strategy within the diagnostic system.

- (2) A table providing the following information for each monitored component or system (either computer-sensed or -controlled) of the emission control system:
    - (A) corresponding diagnostic trouble code.
    - (B) monitoring method or procedure for malfunction detection.
    - (C) primary malfunction detection parameter and its type of output signal.
    - (D) fault criteria limits used to evaluate output signal of primary parameter.
    - (E) other monitored secondary parameters and conditions (in engineering units) necessary for malfunction detection.
    - (F) monitoring time length and frequency of checks.
    - (G) criteria for activating the audio/visual alert device.
  - (3) A logic flowchart describing the general method of detecting malfunctions for each monitored emission-related component or system. To the extent possible, abbreviations in SAE J1930 "Electrical/Electronic Systems Diagnostic Terms, Definitions, Abbreviations, and Acronyms," May 1998, shall be used. J1930 is incorporated by reference herein. The information required in the ~~chart~~ table under (2) above may instead be included in this flow chart, provided all of the information required in (2) is included.
  - (4) A listing and block diagram of the input parameters used to calculate or determine calculated load values and the input parameters used to calculate or determine fuel trim values.
  - (5) Any other information determined by the Executive Officer to be necessary to demonstrate compliance with the requirements of this section.
- (g) Confirmatory testing: The ARB may perform confirmatory testing of engine manufacturers' diagnostic systems for compliance with requirements of this section in accordance with malfunction criteria submitted in the engine manufacturer's approved certification documentation. The ARB or its designee may install appropriately deteriorated or malfunctioning components in an otherwise properly functioning test engine (or simulate a deteriorated or malfunctioning component response) in order to test the fuel system, oxygen sensor, catalyst system, and misfire (if applicable) monitors for compliance with the applicable constraints in this section.

Diagnostic systems of a representative sample of engines that uniformly fail to meet the requirements of this section may be recalled for correction.

- (h) Standardization: ~~The spark-ignition inboard and stern-drive marine industry, in cooperation with ARB, will develop and adhere to standardized specifications for the implementation of OBD-M, including diagnostics trouble code formats, communication, and scan tool protocols.~~ To ensure universal compatibility regarding diagnostic trouble code formats, communication protocols, and scan tool connectivity, OBD-M systems must incorporate the standardized conventions defined in the Society of Automotive Engineers (SAE) implementation guidance document J1939-05, issued February 2008, as well as the other standardized conventions referenced elsewhere in this section. Manufacturers may petition the Executive Officer to use updated versions of the referenced standardized conventions or the temporary employment of alternative conventions under the provisions of § 2442(g)(3).
- (i) Implementation schedule.
  - (1) ~~These OBD-M requirements, unless otherwise specified, shall be implemented beginning with the 2007 model year for engines complying with (a)(1) of this section, and with the 2008 model year for engines complying with (a)(2) of this section, and with the 2009 model year for engines complying with (a)(3) of this section.~~
  - (2) ~~All engine manufacturers shall meet these OBD-M requirements by the 2009 model year for engines complying with (a)(1) of this section, and the 2010 model year for engines complying with (a)(2) of this section, and the 2011 model year for engines complying with (a)(3) of this section.~~
  - (3) The Executive Officer, upon receipt of an application from the engine manufacturer, may certify the engines in question even though said engines may not comply with one or more of the requirements of these subsections. Such certification is contingent upon the extent to which these requirements are satisfied overall on the engine applications in question and a demonstrated good-faith effort to meet these requirements in full by evaluating and considering the best available monitoring technology. Each incident of non-compliance will be recorded as a deficiency.
    - (A) Engine manufacturers of non-complying systems shall be subject to fines pursuant to section 43016 of the California Health and Safety Code for each deficiency identified subject to the following limitations:

(i)  
1. The specified fines shall apply to the third and subsequently identified deficiencies, with the exception that fines shall apply to all monitoring system deficiencies wherein a required monitoring strategy is completely absent from the OBD-M system; and

(ii)  
2. Engine manufacturers may not carry over monitoring system deficiencies for more than two model years unless it can be adequately demonstrated that substantial engine hardware modifications and additional lead time beyond two years would be necessary to correct the deficiency, in which case the deficiency may be carried over for three model years.

(B) For the third deficiency and every deficiency thereafter identified in an engine model, the fines shall be in the amount of \$25 per deficiency per engine for non-compliance with any of the monitoring requirements specified in this section. Total fines per engine under this section shall not exceed \$250 per engine and shall be payable to the State Treasurer for deposit in the Air Pollution Control Fund.

NOTE: Authority cited: Sections 39515, 39600, 39601, 43013, 43018, 43104, and 44036.2, Health and Safety Code; Sections 27156 and 38395 Vehicle Code.  
Reference: Sections 39002, 39003, 39667, 43000, 43004, 43008.6, 43013, 43016, 43018, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43204, and 44036.2, Health and Safety Code; Sections 27156, 38391, and 38395, Vehicle Code.



(10)

(10) Evaporative System

(A) Carbon Canister(s)

(B) Fuel Tank(s)

(C) Purge Valve(s)

(11) Miscellaneous Items Used in Above Systems

(A) Hoses, clamps, fittings, tubing, sealing gaskets or devices,  
and mounting hardware

(B) Pulleys, belts and idlers

(C) Vacuum, temperature, check, and time sensitive valves and  
switches

(D) Electronic Controls

(g) Exclusions.

(1)

\*\*\*\*\*

(2) Engine manufacturers must warrant engines for the yearly warranty period specified in paragraph (c). For Outboard and Personal Watercraft engines, and for ~~inboard~~/sterndrive/inboard engines greater than 485 kilowatts, manufacturers may warrant engines for the hour warranty period if the engines:

(A) are equipped with hour meters; (an ECM-integrated hour meter for ~~inboard~~/sterndrive/inboard engines)

\*\*\*\*\*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.

Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

**§ 2445.2. Emission Control Warranty Statements.**

- (a) Each engine manufacturer must provide a verbatim copy of the following statement with each new 2001 model year and later spark-ignition personal watercraft and outboard marine engine and with each new 2003 model year and later spark-ignition ~~inboard and sterndrive~~/inboard marine engine, using those portions of the statement applicable to the engine.

**CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT  
YOUR WARRANTY RIGHTS AND OBLIGATIONS**

The California Air Resources Board (and engine manufacturer's name, optional) is (are) pleased to explain the emission control system warranty on your (model year)(~~inboard, sterndrive~~/inboard, outboard, or personal watercraft) engine. In California, new (~~inboard, sterndrive~~/inboard, outboard, or personal watercraft) engines must be designed, built and equipped to meet the State's stringent anti-smog standards. (Engine manufacturer's name) must warrant the emission control system on your (~~inboard, sterndrive~~/inboard, outboard, or personal watercraft) engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your (~~inboard, sterndrive~~/inboard, outboard or personal watercraft) engine.

Your emission control system may include parts such as the carburetor or fuel injection system, the ignition system, and catalytic converter. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, (engine manufacturer's name) will repair your (~~inboard, sterndrive~~/inboard, outboard or personal watercraft) engine at no cost to you, including diagnosis, parts and labor.

**MANUFACTURER'S WARRANTY COVERAGE:**

(For spark-ignition personal watercraft and outboard marine engines:) Select emission control parts from model year 2001 and later (outboard or personal watercraft) engines are warranted for 4 years, or for 250 hours of use, whichever first occurs first.

(For 2003 - 2005 spark-ignition ~~inboard and sterndrive~~/inboard marine engines:) Select emission control parts from model year 2003 - 2005 (~~inboard or sterndrive~~/inboard) engines are warranted for 2 years.

(For 2006 - 2008 spark-ignition ~~inboard~~ and sterndrive/inboard marine engines certified according to Option 1 in Section 2442(b)(1):)  
Select emission control parts from model year 2006 - 2008 (~~inboard~~ or sterndrive/inboard) engines are warranted for 2 years.

(For 2006 - 2007 spark-ignition ~~inboard~~ and sterndrive/inboard marine engines certified according to Option 2 in Section 2442(b)(1):)  
Select emission control parts from model year 2006 - 2007 (~~inboard~~ or sterndrive/inboard) engines are warranted for 2 years.

(For 2008 spark-ignition ~~inboard~~ and sterndrive/inboard marine engines certified according to Option 2 in Section 2442(b)(1):)  
Select emission control parts from model year 2008 (~~inboard~~ or sterndrive/inboard) engines are warranted for 3 years or 480 hours, whichever first occurs.

(For 2009 and later spark-ignition ~~inboard~~ and sterndrive/inboard marine engines 373 kilowatts and less:)  
Select emission control parts from model year 2009 and later (~~inboard~~ or sterndrive/inboard) engines are warranted for 3 years or 480 hours, whichever first occurs.

(For 2009 and later spark-ignition ~~inboard~~ and sterndrive/inboard marine engines greater than 373 kilowatts, but less than or equal to 485 kilowatts:)  
Select electronic emission-related control parts from model year 2009 and later (~~inboard~~ or sterndrive/inboard) engines are warranted for 3 years or 480 hours, whichever first occurs. Select mechanical emission-related components are warranted for 3 years or 150 hours of operation, whichever first occurs.

(For 2009 and later spark-ignition ~~inboard~~ and sterndrive/inboard marine engines greater than 485 kilowatts:)  
Select electronic emission-related control parts from model year 2009 and later (~~inboard~~ or sterndrive/inboard) engines are warranted for 3 years or 480 hours, whichever first occurs. Select mechanical emission-related components are warranted for 1 year or 50 hours of operation, whichever first occurs.

However, warranty coverage based on the hourly period is only permitted for engines that are equipped with hour meters as defined in s 2441(a)(13) or their equivalent. If any emission-related part on your engine is defective under warranty, the part will be repaired or replaced by (engine manufacturer's name).

## OWNER'S WARRANTY RESPONSIBILITIES:

– As the (~~inboard~~, sterndrive/inboard, outboard or personal watercraft) engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. (Engine manufacturer's name) recommends that you retain all receipts covering maintenance on your (~~inboard~~, sterndrive/inboard, outboard or personal watercraft) engine, but (engine manufacturer's name) cannot deny warranty solely for the lack of receipts or your failure to ensure the performance of all scheduled maintenance.

– As the (~~inboard~~, sterndrive/inboard, outboard or personal watercraft) engine owner, you should however be aware that (engine manufacturer's name) may deny you warranty coverage if your (~~inboard~~, sterndrive/inboard, outboard or personal watercraft) engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

– You are responsible for presenting your (~~inboard~~, sterndrive/inboard, outboard or personal watercraft) engine to a (engine manufacturer's name) distribution center as soon as a problem exists. The warranty repairs will be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact (Insert chosen contact of engine manufacturer) at 1-XXX-XXX-XXXX.

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NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.

Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

**§ 2446. 2001 and Later Model Year Production-Line Test Procedures and Selective Enforcement Auditing Regulations for Spark-Ignition Marine Engines.**

(a) Applicability. This section applies to 2001 and later spark-ignition personal watercraft and outboard marine engines. The allowable methods of production-line testing are specified in subsections (b) and (c), unless the engine manufacturer can satisfactorily provide an alternate method that shows an equivalent assurance of compliance to that of subsection (b). The engine manufacturer must choose only one method for each model year and submit its method of production-line testing to the Executive Officer for approval no later than 90 days prior to the start of the subject model year production. The 2003 and later spark-ignition ~~inboard and sterndrive/inboard~~ marine engines are only subject to the selective enforcement audit requirements specified within subsections (d) and (e) of this section. ~~Inboard and sterndrive engines certified using the provision in Section 2442(b)(2)(F) are exempt from this Section.~~

(b) 2001 and Later Model Year Quality-Audit Production Line Test Procedures

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(4) \*\*\*\*\*

(B) \*\*\*\*\*

~~(i)~~

1. The total production and sample size for each engine family.

~~(ii)~~

2. Engine identification numbers and explanation of the identification code.

~~(iii)~~

3. The applicable emissions standards or Family Emission Levels for each engine family.

4. A description of each test engine or equipment (i.e., date of test, engine family, engine size, engine or equipment identification number, fuel system, dynamometer power absorber setting in horsepower or kilowatts, engine code or calibration number, and test location).

~~(v)~~  
5. The exhaust emission data for HC+NO<sub>x</sub> for each test engine or equipment. The data reported shall provide two significant figures beyond the number of significant figures in the applicable emission standard.

~~(vi)~~  
6. The retest emissions data, as described in Paragraph ~~(v)~~5. above for any engine or unit of equipment failing the initial test, and description of the corrective measures taken, including specific components replaced or adjusted.

~~(vii)~~  
7. A statistical analysis of the quality-audit test results for each engine family stating:

- ~~1.~~
  - a. Number of engines or units of equipment tested.
- ~~2.~~
  - b. Average emissions and standard deviations of the sample for HC+NO<sub>x</sub>.

~~(viii)~~  
8. Every aborted test data and reason for the aborted test.

~~(ix)~~  
9. The applicable quarterly report shall include the date of the end of the engine manufacturer's model year production for an engine family.

~~(x)~~  
10. The required information for all engine families in production during the quarter regardless of sample size.

~~(xi)~~  
11. The start and stop dates of batch-produced engine family production.

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(c)

(1)

(A)

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(i)

1. For newly certified engine families: After two (2) engines are tested, the engine manufacturer will calculate the required sample size for the model year according to the Sample Size Equation in paragraph (c)(1)(B) of this section.

(ii)

2. For carry-over engine families: After one engine is tested, the engine manufacturer must combine the test with the last test result from the previous model year and then calculate the required sample size for the model year according to the Sample Size Equation in paragraph (B) of this section.

(iii)

3. The engines must be representative of the engine manufacturer's California sales. Each engine will be selected from the end of the assembly line. All engine models within the engine family must be included in the sample pool. Each selected engine for quality-audit testing must pass the inspection test, by being equipped with the appropriate emission control systems certified by the ARB. The procedure for randomly selecting engines or units of equipment must be submitted to the Chief, Mobile Source Operations Division, P.O. Box 8001, 9528 Telstar Avenue, El Monte, CA, 91734-8001, before the start of production for the first year of production.

(iv)

- 4.
- a. Prior to the beginning of the 2001 model year, if an engine manufacturer cannot provide actual California sales data, it must provide its total production and an estimate of California sales at the end of the model year. The engine manufacturer must also provide supporting material for its estimate.
  - b. For the 2001 and later model years, engine manufacturers must provide actual California sales, or other information acceptable to the Executive Officer, including, but not limited to, an estimate based on market analysis and federal production or sales.



- (B) (i)1. Engine manufacturers must calculate the required sample size for the model year for each engine family using the Sample Size Equation below. N is calculated from each test result. The number N indicates the number of tests required for the model year for an engine family. N is recalculated after each test. Test results used to calculate the variables in the Sample Size Equation must be final deteriorated test results as specified in paragraph (c)(3)(C).

$$N = \left[ \frac{(t_{95} * \sigma)}{(x - FEL_{jx})} \right]^2 + 1$$

where:

- N = Required sample size for the model year.
- T<sub>95</sub> = 95% confidence coefficient. It is dependent on the actual number of tests completed, n, as specified in the table in paragraph (c)(1)(B)(ii)2. of this section. It defines one-tail, 95% confidence intervals.
- FEL<sub>jx</sub> = Family Emission Limit
- σ = Actual test sample standard deviation calculated from the following equation:

$$\sigma = \sqrt{\frac{\sum (X_i - x)^2}{n - 1}}$$

where:

- X<sub>i</sub> = Emission test result for an individual engine
- x = Mean of emission test results of the actual sample
- n = The actual number of tests completed in an engine family

(ii)2. Actual Number of Tests (n) and 1-tail Confidence Coefficients (t<sub>95</sub>) are listed in Table 3 below:

Table 3

Actual Number of Tests (n) and 1-tail Confidence Coefficients (t<sub>95</sub>)

<i>n</i>	<i>t</i> <sub>95</sub>	<i>n</i>	<i>t</i> <sub>95</sub>	<i>n</i>	<i>t</i> <sub>95</sub>
2	6.31	12	1.80	22	1.72
3	2.92	13	1.78	23	1.72
4	2.35	14	1.77	24	1.71
5	2.13	15	1.76	25	1.71
6	2.02	16	1.75	26	1.71
7	1.94	17	1.75	27	1.71
8	1.90	18	1.74	28	1.70
9	1.86	19	1.73	29	1.70
10	1.83	20	1.73	30	1.70
11	1.81	21	1.72	∞	1.645

(iii)

3. An engine manufacturer must distribute the testing of the remaining number of engines needed to meet the required sample size N, evenly throughout the remainder of the model year.

(iv)

4. After each new test, the required sample size, N, is recalculated using updated sample means, sample standard deviations and the appropriate 95% confidence coefficient.

(v)

5. An engine manufacturer must continue testing and updating each engine family's sample size calculations according to paragraphs (c)(1)(B)~~(i)~~1. through (c)(1)(B)~~(iv)~~4. of this section until a decision is made to stop testing as described in paragraph (c)(1)(B)~~(vi)~~6. of this section or a noncompliance decision is made pursuant to paragraph (c)(2)(A)~~(v)~~5. of this section.

(vi)

6. If, at any time throughout the model year, the calculated required sample size, N, for an engine family is less than or equal to the actual sample size, n, and the sample mean, x, for each regulated pollutant is less than or equal to the FEL for that pollutant, the engine manufacturer may stop testing that engine family except as required by paragraph (c)(2)(A)~~(vi)~~6.

(vii)

7. If, at any time throughout the model year, the sample mean,  $\bar{x}$ , for any regulated pollutant is greater than the FEL, the engine manufacturer must continue testing that engine family at the appropriate maximum sampling rate.

(viii)

8. The maximum required sample size for an engine family (regardless of the required sample size,  $N$ , as calculated in paragraph (c)(1)(B)(i)1. of this section) is thirty (30) tests per model year.

(ix)

9. Engine manufacturers may elect to test additional randomly chosen engines. All additional randomly chosen engines tested in accordance with the testing procedures specified in the Test Procedures must be included in the Sample Size and Cumulative Sum equation calculations as defined in paragraphs (c)(1)(B)(i)1. and (c)(2)(A)(i)1. of this section, respectively.

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(2)

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(A)

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(i)

1. Engine manufacturers must construct the following Cumulative Sum Equation for each regulated pollutant for each engine family. Test results used to calculate the variables in the Cumulative Sum Equation must be final deteriorated test results as defined in paragraph (c)(3)(C).

$$C_i = \max[0 \text{ or } (C_{i-1} + X_i - (FEL_{jx} + F))]$$

where:

$C_i$  = The current Cumulative Sum statistic

$C_{i-1}$  = The previous Cumulative Sum statistic. Prior to any testing, the Cumulative Sum statistic = 0 (i.e.,  $C_0 = 0$ )

- $X_i$  = The current emission test result for an individual engine
- $FEL_{jx}$  = Family Emission Limit
- $F$  =  $0.25 \times \sigma$

After each test,  $C_i$  is compared to the action limit,  $H$ ; the quantity that the Cumulative Sum statistic must exceed, in two (2) consecutive tests, before the engine family may be determined to be in noncompliance for purposes of paragraphs (a)(2)(A)(iv)4. and (a)(2)(A)(v)5.

- $H$  = The Action Limit. It is  $5.0 \times \sigma$  and is a function of the standard deviation,  $\sigma$ .
- $\sigma$  = The sample standard deviation and is recalculated after each test.

(ii)

2. After each engine is tested, the Cumulative Sum statistic must be promptly updated according to the Cumulative Sum Equation in paragraph (c)(2)(A)(i)1. of this section.

(iii)

3. If, at any time during the model year, an engine manufacturer amends the application for certification for an engine family as specified in Part I, section 28 or 29 of the Test Procedures by performing an engine family modification (i.e., a change such as a running change involving a physical modification to an engine, a change in specification or setting, the addition of a new configuration, or the use of a different deterioration factor), all previous sample size and Cumulative Sum statistic calculations for the model year will remain unchanged.

(iv)

4. A failed engine is one whose final deteriorated test results pursuant to paragraph (c)(3)(C), for a regulated pollutant exceeds the FEL for that pollutant.

(v)

5. An engine family may be determined to be in noncompliance if, at any time throughout the model year, the Cumulative Sum statistic,  $C_i$ , for a regulated pollutant is greater than the action limit,  $H$ , for two (2) consecutive tests.

(vi)

6. The engine manufacturer must perform a minimum of two tests per engine family per quarter, regardless of whether the conditions of paragraph (c)(1)(B)(vi)6. have been met. The Executive Officer may waive the requirement of this paragraph if the engine manufacturer does not have a failing engine family in the prior two model years of testing.

(vii)

7. All results from previous quarters of the same model year must be included in the on-going Cumulative Sum analysis, provided that the engine family has not failed (e.g., if three engines of a family were tested in the first quarter, the first test of the second quarter would be considered as the fourth test).

(viii)

8. If the Cumulative Sum analysis indicates that an engine family has failed, the engine manufacturer must notify the Chief of the Mobile Source Operations Division, in writing and by telephone, within ten working days. Corrective action will be taken as noted in paragraph (c)(4)(E).

(ix)

9. If an engine manufacturer performs corrective action on a failed engine family and then resumes production, all previous tests will be void, and Cumulative Sum analysis will begin again with the next test.

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(3)

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(D) If, at any time during the model year, the Cumulative Sum statistic exceeds the applicable action limit, H, in two (2) consecutive tests, the engine family may be determined to be in noncompliance and the engine manufacturer must notify the Chief of the Mobile Source Operations Division and the Manager of the New Vehicle Audit Section, P.O. Box 8001, 9528 Telstar Avenue, El Monte, CA, 91734-8001, within ten working days of such exceedance by the Cumulative Sum statistic.

(E)

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(i)

1. The location and description of the engine manufacturer's or other's exhaust emission test facilities that were utilized to conduct testing reported pursuant to this section;

- (ii)  
2. Total production and sample sizes, N and n, for each engine family;
- (iii)  
3. The applicable emissions standards for each engine family;
- (iv)  
4. A description of the process to obtain engines on a random basis;
- (v)  
5. A description of the test engines or equipment (i.e., date of test, engine family, engine size, engine or equipment identification number, fuel system, dynamometer power absorber setting in horsepower or kilowatts, engine code or calibration number, and test location);
- (vi)  
6. The date of the end of the engine manufacturer's model year production for each engine family;
- (vii)  
7. For each test conducted,
  - a. A description of the test engine, including:
    - 1.
      - (i) Configuration and engine family identification,
      - 2.
        - (ii) Year, make, and build date,
        - 3.
          - (iii) Engine identification number and explanation of the identification code, and
          - 4.
            - (iv) Number of hours of service accumulated on engine prior to testing;
    - b. Location where service accumulation was conducted and description of accumulation procedure and schedule;
    - c. Test number, date, test procedure used, initial test results before and after rounding, and final test results

for all exhaust emission tests, whether valid or invalid, and the reason for invalidation, if applicable;

- d. The exhaust emission data for CO, NO<sub>x</sub> and HC for each test engine or watercraft. The data reported must provide two (2) significant figures beyond the number of significant figures in the applicable emission standard.
- e. The retest emissions data, as described in paragraph (b)(4)(B)(vi)~~6~~6 of this section, for any engine or watercraft failing the initial test, and description of the corrective measures taken, including specific components replaced or adjusted.
- f. A complete description of any adjustment, modification, repair, preparation, maintenance, and/or testing that was performed on the test engine, was not reported pursuant to any other part of this article, and will not be performed on all other production engines;
- g. A Cumulative Sum analysis, as required in paragraph (c)(2)(A)(i)~~1~~1 of this section, of the production line test results for each engine family;
- h. Any other information the Executive Officer may request relevant to the determination whether the new engines being manufactured by the engine manufacturer do in fact conform with the regulations with respect to which the Executive Order was issued;

~~(viii)~~

8. For each failed engine as defined in paragraph ~~(vii)~~7.d., above, a description of the remedy and test results for all retests;

~~(ix)~~

9. Every aborted test data and reason for the aborted test;

~~(x)~~

10. The start and stop dates of batch-produced engine family production; and

~~(xi)~~

11. The required information for all engine families in production during the quarter regardless of sample size.

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- (d) Test Procedures Applicable to All Production-Line and Selective Enforcement Audit Testing.

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(3)

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(D) If an engine manufacturer determines that the emission test results of an engine or watercraft are invalid, the engine or equipment must be retested. Emission results from all tests must be reported. The engine manufacturer must include a detailed report on the reasons for each invalidated test in the quarterly report for all production-line testing, or as required by the ~~Executive~~Executive Officer for selective enforcement audit testing.

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(5)

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- (A) The Executive Order is automatically suspended with respect to any engine failing pursuant to paragraph (b)(3)(D) or (c)(2)(A)(iv)4. or whose test results for a regulated pollutant exceed the emission standards effective from the time that testing of that engine is completed.
- (B) The Executive Officer may suspend the Executive Order for an engine family that is determined to be in noncompliance pursuant to paragraphs (b)(3)(C) or (c)(2)(A)(v)5. This suspension will not occur before fifteen (15) days after the engine family is determined to be in noncompliance.
- (C) If the results of testing pursuant to these regulations indicate that engines of a particular family produced at one plant of an engine manufacturer do not conform to the regulations with respect to which the Executive Order was issued, the Executive Officer may suspend the Executive Order with respect to that family for engines manufactured by the engine manufacturer at all other plants.
- (D) Notwithstanding the fact that engines described in the application for certification may be covered by an Executive Order, the Executive Officer may suspend such Executive Order immediately in whole or in part if the Executive Officer finds any one of the following infractions to be substantial:
- (i)  
1. The engine manufacturer refuses to comply with any of the requirements of this section.
  - (ii)  
2. The engine manufacturer submits false or incomplete information in any report or information provided to the Executive Officer under this section.
  - (iii)  
3. The engine manufacturer renders inaccurate any test data submitted under this section.
  - (iv)  
4. An ARB enforcement officer is denied the opportunity to conduct activities authorized in this section.
  - (v)  
5. An ARB enforcement officer is unable to conduct activities authorized in paragraph (d)(2) of this section

because an engine manufacturer has located its facility in a foreign jurisdiction where local law prohibits those activities.

- (E) The Executive Officer will notify the engine manufacturer in writing of any suspension or revocation of an Executive Order in whole or in part. A suspension or revocation is effective upon receipt of the notification or fifteen (15) days from the time an engine family is determined to be in noncompliance pursuant to paragraph (d)(1), except that the Executive Order is immediately suspended with respect to any failed engines as provided for in paragraph (b)(3)(D) or (c)(2)(iv)4. of this section.
- (F) The Executive Officer may revoke an Executive Order for an engine family after the Executive Order has been suspended pursuant to paragraphs (d)(5)(B) or (C) of this section if the proposed remedy for the nonconformity, as reported by the engine manufacturer to the Executive Officer, is one requiring a design change or changes to the engine and/or emission control system as described in the application for certification of the affected engine family.
- (G) Once an Executive Order has been suspended for a failed engine, as provided for in paragraph (d)(5)(A) of this section, the engine manufacturer must take the following actions before the Executive Order is reinstated for that failed engine:
  - (i)  
1. Remedy the nonconformity;
  - (ii)  
2. Demonstrate that the engine conforms to its applicable FEL by retesting the engine in accordance with these regulations; and
  - (iii)  
3. Submit a written report to the Executive Officer, after successful completion of testing on the failed engine, that contains a description of the remedy and test results for each engine in addition to other information that may be required by this part.
- (H) Once an Executive Order for a failed engine family has been suspended pursuant to paragraphs (d)(5)(B), (C) or (D) of this section, the engine manufacturer must take the following actions before the Executive Officer will consider reinstating the Executive Order:

(i)  
1. Submit a written report to the Executive Officer that identifies the reason for the noncompliance of the engines, describes the proposed remedy, including a description of any proposed quality control and/or quality assurance measures to be taken by the engine manufacturer to prevent future occurrences of the problem, and states the date on which the remedies will be implemented.

(ii)  
2. Demonstrate that the engine family for which the Executive Order has been suspended does in fact comply with the regulations of paragraphs (b) or (c), as applicable, by testing as many engines as needed so that the Cumulative Sum statistic, as calculated in paragraph (c)(2)(A)(i)1., falls below the action limit, or the average emissions from the Quality-Audit testing as calculated in paragraph (b)(3)(A) remains below the FEL, as applicable. Such testing must comply with the provisions of paragraphs (b) or (c), as applicable. If the engine manufacturer elects to continue testing individual engines after suspension of an Executive Order, the Executive Order is reinstated for any engine actually determined to be in conformance with the emission standards through testing in accordance with the applicable test procedures, provided that the Executive Officer has not revoked the Executive Order pursuant to paragraph (d)(5)(F) of this section.

(l) Once the Executive Order has been revoked for an engine family, if the engine manufacturer wants to introduce into commerce a modified version of that family, the following actions must be taken before the Executive Officer may issue an Executive Order for that modified family:

(i)  
1. If the Executive Officer determines that the proposed change(s) in engine design may have an effect on emission performance deterioration, the Executive Officer will notify the engine manufacturer, within five (5) working days after receipt of the report in paragraph (d)(5)(H)(i)1. of this section, whether subsequent testing under this section will be sufficient to evaluate the proposed change or changes or whether additional testing will be required; and

(ii)  
2. After implementing the change or changes intended to remedy the nonconformity, the engine manufacturer

must demonstrate that the modified engine family does in fact conform with the regulations of paragraphs (b) or (c), as applicable, by testing as many engines as needed from the modified engine family so that the Cumulative Sum statistic, as calculated in paragraph (c)(2)(A)(i)1., falls below the action limit, or the average emissions from the Quality-Audit testing as calculated in paragraph (b)(3)(A) remains below the FEL, as applicable. When this requirement is met, the Executive Officer will reissue the Executive Order or issue a new Executive Order, as the case may be, to include that family. The revocation of engine family executive orders issued based on Cumulative Sum testing results remains in effect as long as the Cumulative Sum statistic remains above the action limit.

- (J) At any time after the suspension of an Executive Order for a test engine under to paragraph (d)(5)(A) of this section, but not later than fifteen (15) days (or such longer period as may be allowed by the Executive Officer) after notification of the Executive Officer's decision to suspend or revoke an Executive Order in whole or in part pursuant to paragraphs (d)(5)(B), (C) or (F) of this section, an engine manufacturer may request a hearing pursuant to subchapter 1.25, Title 17, California Code of Regulations, as to whether the tests have been properly conducted or any sampling methods have been properly applied.
- (K) Any suspension of an Executive Order under paragraph (d)(5)(D) of this section:

- (i)  
1. must be made only after the engine manufacturer concerned has been offered an opportunity for a hearing pursuant to subchapter 1.25, Title 17, California Code of Regulations, and;

- (ii)  
2. does not apply to engines no longer in the possession of the engine manufacturer.

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(e) Selective Enforcement Auditing Regulations.

(1) Test Orders.

- (A) A test order addressed to the engine manufacturer is required for any testing under paragraph (e).
- (B) The test order is signed by the Executive Officer or his or her designee. The test order must be delivered in person by an ARB enforcement officer or ARB authorized representative to a company representative or sent by registered mail, return receipt requested, to the engine manufacturer's representative who signed the application for certification submitted by the engine manufacturer, pursuant to the requirements of the applicable portions of Title 13, California Code of Regulations, section 2447. Upon receipt of a test order, the engine manufacturer must comply with all of the provisions of this subsection and instructions in the test order.

(C) Information included in test order.

(i)

1. The test order will specify the engine family to be selected for testing, the engine manufacturer's engine assembly plant or associated storage facility or port facility (for imported engines) from which the engines must be selected, the time and location at which engines must be selected, and the procedure by which engines of the specified family must be selected. The test order may specify the configuration to be audited and/or the number of engines to be selected per day. Engine manufacturers are required to select a minimum of four engines per day unless an alternate selection procedure is approved pursuant to paragraph (e)(2)(A), or unless total production of the specified configuration is less than four engines per day. If total production of the specified configuration is less than four engines per day, the engine manufacturer selects the actual number of engines produced per day.

(ii)

2. The test order may include alternate families to be selected for testing at the Executive Officer's discretion in the event that engines of the specified family are not available for testing because those engines are not being manufactured during the specified time or are not being

stored at the specified assembly plant, associated storage facilities, or port of entry.

(iii)

3. If the specified family is not being manufactured at a rate of at least two (2) engines per day in the case of engine manufacturers specified in paragraph (e)(4)(G)(i) of this section, or one engine per day in the case of engine manufacturers specified in paragraph (e)(4)(G)(ii) of this section, over the expected duration of the audit, the Executive Officer or her or his designated representative may select engines of the alternate family for testing.

(iv)

4. In addition, the test order may include other directions or information essential to the administration of the required testing.

- (D) An engine manufacturer may submit a list of engine families and the corresponding assembly plants, associated storage facilities, or (in the case of imported engines) port facilities from which the engine manufacturer prefers to have engines selected for testing in response to a test order. In order that an engine manufacturer's preferred location be considered for inclusion in a test order for a particular engine family, the list must be submitted prior to issuance of the test order. Notwithstanding the fact that an engine manufacturer has submitted the list, the Executive Officer may order selection at other than a preferred location.
  - (E) Upon receipt of a test order, an engine manufacturer must proceed in accordance with the provisions of paragraph (e).
- (2) Testing by the Executive Officer.
- (A) The Executive Officer may require by test order under paragraph (e)(1) that engines of a specified family be selected in a manner consistent with the requirements of paragraph (e)(3) and submitted to the Executive Officer at the place designated for the purpose of conducting emission tests. These tests will be conducted in accordance with paragraph (e)(4) to determine whether engines manufactured by the engine manufacturer conform with the regulations with respect to which the certificate of conformity was issued.

(B) Designating official data.

(i)

1. Whenever the Executive Officer conducts a test on a test engine or the Executive Officer and engine manufacturer each conduct a test on the same test engine, the results of the Executive Officer's test are the official data for that engine.

(ii)

2. Whenever the engine manufacturer conducts all tests on a test engine, the engine manufacturer's test data are accepted as the official data, provided that if the Executive Officer makes a determination based on testing conducted under paragraph (e)(2)(A) of this section that there is a substantial lack of agreement between the engine manufacturer's test results and the Executive Officer's test results, no engine manufacturer's test data from the engine manufacturer's test facility will be accepted for purposes of this subsection.

(C) If testing conducted under paragraph (e)(1) is unacceptable under paragraph (B)(ii)2. of this subsection, the Executive Officer must:

(i)

1. Notify the engine manufacturer in writing of the Executive Officer's determination that the test facility is inappropriate for conducting the tests required by this subsection and the reasons therefore; and

(ii)

2. Reinstate any engine manufacturer's data upon a showing by the engine manufacturer that the data acquired under paragraph (e)(2) were erroneous and the engine manufacturer's data was correct.

(D) The engine manufacturer may request in writing that the Executive Officer reconsider the determination in paragraph (B)(ii) of this section based on data or information indicating that changes have been made to the test facility and these changes have resolved the reasons for disqualification.

- (3) Sample selection.
- (A) Engines comprising a test sample will be selected at the location and in the manner specified in the test order. If an engine manufacturer determines that the test engines cannot be selected in the manner specified in the test order, an alternative selection procedure may be employed, provided the engine manufacturer requests approval of the alternative procedure before starting test sample selection, and the Executive Officer approves the procedure.
  - (B) The engine manufacturer must produce and assemble the test engines of the family selected for testing using its normal production and assembly process for engines to be distributed into commerce. If, between the time the engine manufacturer is notified of a test order and the time the engine manufacturer finishes selecting test engines, the engine manufacturer implements any change(s) in its production or assembly processes, including quality control, which may reasonably be expected to affect the emissions of the engines selected, then the engine manufacturer must, during the audit, inform the Executive Officer of such changes. If the test engines are selected at a location where they do not have their operational and emission control systems installed, the test order will specify the manner and location for selection of components to complete assembly of the engines. The engine manufacturer must assemble these components onto the test engines using normal assembly and quality control procedures as documented by the engine manufacturer.
  - (C) No quality control, testing, or assembly procedures will be used on the test engine or any portion thereof, including parts and subassemblies, that have not been or will not be used during the production and assembly of all other engines of that family, unless the Executive Officer approves the modification in production or assembly procedures pursuant to paragraph (B) of this subsection.
  - (D) The test order may specify that an ARB enforcement officer(s) or authorized representative(s), rather than the engine manufacturer, select the test engines according to the method specified in the test order.
  - (E) The order in which test engines are selected determines the order in which test results are to be used in applying the sampling plan in accordance with paragraph (e)(5).



- (F) The engine manufacturer must keep on hand all untested engines, if any, comprising the test sample until a pass or fail decision is reached in accordance with paragraph (e)(5)(E). The engine manufacturer may ship any tested engine which has not failed the requirements as set forth in paragraph (e)(5)(B). However, once the engine manufacturer ships any test engine, it may not conduct retests as provided in paragraph (e)(4)(I).
- (4) Test procedures.
- (A) (i) 1. For spark-ignition marine engines subject to the provisions of this subsection, the prescribed test procedures are the test procedures as specified in Part IV of the Test Procedures.
- (ii) 2. The Executive Officer may, on the basis of a written application by an engine manufacturer, prescribe test procedures other than those specified in paragraph (i)1. for any spark-ignition marine engine he or she determines is not susceptible to satisfactory testing using the procedures specified in paragraph (i)1.
- (B) (i) 1. The engine manufacturer may not adjust, repair, prepare, or modify the engines selected for testing and may not perform any emission tests on engines selected for testing pursuant to the test order unless this adjustment, repair, preparation, modification, and/or tests are documented in the engine manufacturer's engine assembly and inspection procedures and are actually performed or unless these adjustments and/ or tests are required or permitted under this subsection or are approved in advance by the Executive Officer.
- (ii) 2. The Executive Officer may adjust or cause to be adjusted any engine parameter that the Executive Officer determines subject to adjustment for certification and Selective Enforcement Audit testing in accordance with Part I, section 18 of the Test Procedures, to any setting within the physically adjustable range of that parameter, as determined by the Executive Officer in accordance with section 18, prior to the performance of any tests. However, if the idle speed parameter is one which the Executive Officer has determined to be subject to adjustment, the Executive Officer may not adjust it to any setting that causes a lower engine idle speed than would have been possible within the physically adjustable

range of the idle speed parameter if the engine manufacturer had accumulated 12 hours of service on the engine under paragraph (C) of this section, all other parameters being identically adjusted for the purpose of the comparison. The engine manufacturer may be requested to supply information needed to establish an alternate minimum idle speed. The Executive Officer, in making or specifying these adjustments, may consider the effect of the deviation from the engine manufacturer's recommended setting on emission performance characteristics as well as the likelihood that similar settings will occur on in-use engines. In determining likelihood, the Executive Officer may consider factors such as, but not limited to, the effect of the adjustment on engine performance characteristics and information from similar in-use engines.

- (C) Service Accumulation. Before performing exhaust emission testing on a selective enforcement audit test engine, the engine manufacturer may accumulate on each engine a number of hours of service equal to the greater of 12 hours or the number of hours the engine manufacturer accumulated during certification on the emission data engine corresponding to the family specified in the test order.

(i)

1.

Service accumulation must be performed in a manner using good engineering judgment to obtain emission results representative of normal production engines. This service accumulation must be consistent with the new engine break-in instructions contained in the applicable owner's manual.

(ii)

2.

The engine manufacturer must accumulate service at a minimum rate of 6 hours per engine during each 24-hour period, unless otherwise approved by the Executive Officer.

- a. The first 24-hour period for service begins as soon as authorized checks, inspections, and preparations are completed on each engine.
- b. The minimum service accumulation rate does not apply on weekends or holidays.

- c. If the engine manufacturer's service or target is less than the minimum rate specified (6 hours per day), then the minimum daily accumulation rate is equal to the engine manufacturer's service target.

(iii)

3. Service accumulation must be completed on a sufficient number of test engines during consecutive 24-hour periods to assure that the number of engines tested per day fulfills the requirements of paragraphs (G)(i)1. and (G)(ii)2. below.

- (D) The engine manufacturer may not perform any maintenance on test engines after selection for testing, nor may the Executive Officer allow deletion of any engine from the test sequence, unless requested by the engine manufacturer and approved by the Executive Officer before any engine maintenance or deletion.
- (E) The engine manufacturer must expeditiously ship test engines from the point of selection to the test facility. If the test facility is not located at or in close proximity to the point of selection, the engine manufacturer must assure that test engines arrive at the test facility within 24 hours of selection. The Executive Officer may approve more time for shipment based upon a request by the engine manufacturer accompanied by a satisfactory justification.
- (F) If an engine cannot complete the service accumulation or an emission test because of a malfunction, the engine manufacturer may request that the Executive Officer authorize either the repair of that engine or its deletion from the test sequence.
- (G) Whenever an engine manufacturer conducts testing pursuant to a test order issued under this subsection, the engine manufacturer must notify the Executive Officer within one working day of receipt of the test order as to which test facility will be used to comply with the test order. If no test cells are available at a desired facility, the engine manufacturer must provide alternate testing capability satisfactory to the Executive Officer.

(i)

1. An engine manufacturer with projected spark-ignition marine engine sales for the California market for the applicable year of 20 or greater must complete emission testing at a minimum rate of two (2) engines per 24-hour period, including each voided test.

(ii)

2. An engine manufacturer with projected spark-ignition marine engine sales for the California market for the applicable year of less than 20 must complete emission testing at a minimum rate of one engine per 24-hour period, including each voided test.

(iii)

3. The Executive Officer may approve a lower daily rate of emission testing based upon a request by an engine manufacturer accompanied by a satisfactory justification.

(H) The engine manufacturer must perform test engine selection, shipping, preparation, service accumulation, and testing in such a manner as to assure that the audit is performed in an expeditious manner.

(I) Retesting.

(i)

1. The engine manufacturer may retest any engines tested during a Selective Enforcement Audit once a fail decision for the audit has been reached in accordance with paragraph (e)(5)(E).

(ii)

2. The Executive Officer may approve retesting at other times based upon a request by the engine manufacturer accompanied by a satisfactory justification.

(iii)

3. The engine manufacturer may retest each engine a total of three times. The engine manufacturer must test each engine or vehicle the same number of times. The engine manufacturer may accumulate additional service before conducting a retest, subject to the provisions of paragraph (C) of this paragraph (4).

(J) An engine manufacturer must test engines with the test procedure specified in Part IV of the Test Procedures to demonstrate compliance with the exhaust emission standard (or applicable FEL) for HC+NO<sub>x</sub>. If alternate procedures were used in certification pursuant to Part 1, section 20(c) of the Test Procedures, then those alternate procedures must be used.

- (5) Compliance with acceptable quality level and passing and failing criteria for selective enforcement audits.
  - (A) The prescribed acceptable quality level is 40 percent.
  - (B) A failed engine is one whose final test results for HC+NO<sub>x</sub> pursuant to paragraph (b)(3)(D) or (c)(2)(iv)4., as applicable, exceed the applicable family emission level or whose test results for a regulated pollutant exceed the emission standards.

\*\*\*\*\*

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.  
Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

**§ 2447. California Exhaust Emission Standards and Test Procedures for 2001 Model Year and Later Spark-Ignition Marine Engines.**

Test Procedures referred to in this article, including the "California Exhaust Emission Standards and Test Procedures for 2001 Model Year and Later Spark-Ignition Marine Engines," as adopted October 21, 1999, and as last amended June 5, 2009 which is incorporated by reference herein, may be obtained from the State Air Resources Board at P.O. Box 8001, 9528 Telstar Avenue, El Monte, California 91734-8001.

Note: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.  
Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

## FINAL REGULATION ORDER

Note: This document is written in a style to indicate changes from the existing provisions. All existing regulatory language is indicated by plain type. All additions to the regulatory language are indicated by underlined type. All deletions to the regulatory language are indicated by ~~strikeout~~. Only those portions containing modifications from existing provisions are included. All other portions remain unchanged and are indicated by the symbol [ \* \* \* \* \* ] for reference.

### Article 4.7 Spark Ignition Marine Engines

Amend § 2447, title 13, California Code of Regulations, to read as follows:

#### § 2447. California Exhaust Emission Standards and Test Procedures for 2001 Model Year and Later Spark-Ignition Marine Engines.

Test Procedures referred to in this article, including the "California Exhaust Emission Standards and Test Procedures for 2001 Model Year and Later Spark-Ignition Marine Engines," as adopted October 21, 1999, and as last amended ~~June 5, 2009~~ October 25, 2012, which is incorporated by reference herein, may be obtained from the State Air Resources Board at P.O. Box 8001, 9528 Telstar Avenue, El Monte, California 91734-8001.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

2449  
2449.1  
2449.2

## FINAL REGULATION ORDER

### REGULATION FOR IN-USE OFF-ROAD DIESEL-FUELED FLEETS ~~VEHICLES~~

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Note: Proposed modifications are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions, compared to the preexisting regulatory language.

Amend sections 2449, 2449.1, 2449.2, and repeal section 2449.3 in title 13, article 4.8, chapter 9, California Code of Regulations (CCR) to read as follows:

#### § 2449. General Requirements for In-Use Off-Road Diesel-Fueled Fleets

##### (a) Purpose

The purpose of this regulation is to reduce oxides of nitrogen (NOx), diesel particulate matter (PM)<sub>1</sub> and other criteria pollutant emissions from in-use off-road diesel-fueled vehicles.

##### (b) Applicability

- (1) Except as provided in subsection (b)(2) below, this regulation applies to any person, business, or government agency who owns or operates within California any vehicles with a diesel-fueled or alternative diesel fueled off-road compression-ignition engine with maximum power (max hp) of 25 horsepower (hp) or greater provided that the vehicle cannot be registered and driven safely on-road or was not designed to be driven on-road, even if it has been modified so that it can be driven safely on-road.
- (2) The regulation also applies to the following:
  - (A) Workover rigs, as defined in section 2449(c)(62), are subject to this regulation.
  - (B) Both engines of two-engine cranes, and two-engine water-well drilling rigs, as defined in sections 2449(c)(56) and (c)(58), respectively, that contain an auxiliary engine having a rated brake hp of 50 or greater ( $\geq 50$  bhp) are subject to this regulation.
  - (C) Both engines of two-engine vehicles, as defined in section 2449(c)(57), that were designed to be driven either on-road or off-road and contain an auxiliary engine  $\geq 50$  bhp are subject to this regulation provided that:
    1. The two-engine vehicle is not already subject to the Fleet Rule for Public Agencies and Utilities, title 13, CCR, sections 2022 and 2022.1;
    2. The two-engine vehicle is not a two-engine sweeper, as defined in the Truck and Bus regulation, title 13, CCR, section 2025; and
    3. The two-engine vehicle does not have a Tier 0 auxiliary engine.
  - (D) This regulation applies to any person who sells a vehicle subject to this regulation within California.

(E) Persons who provide financing in the form of "finance leases," as defined in California Uniform Commercial Code Section 10103(a)(7), for in-use off-road diesel-fueled vehicles, do not "own" such vehicles for the purposes of this regulation.

(G) The following are not subject to this regulation:

1. Locomotives;
2. Commercial marine vessels;
3. Marine engines;
4. Recreational off-highway vehicles;
5. Combat and tactical support equipment;
6. Stationary equipment;
7. Portable engines, except for auxiliary engines included in subsections (b)(2)(B) and (b)(2)(C) above;
8. Equipment or vehicles used exclusively in agricultural operations;
9. Implements of husbandry;
10. Two-engine street sweepers that are subject to the Truck and Bus Regulation, title 13, CCR, section 2025;
11. Two-engine vehicles that are subject to the Fleet Rule for Public Agencies and Utilities, title 13, CCR, sections 2022 and 2022.1;
12. Two-engine vehicles, that are not two-engine cranes or two-engine water-well drilling rigs, that have Tier 0 auxiliary engines;
13. Equipment subject to the Regulation for Mobile Cargo Handling equipment at Ports and Intermodal Rail Yards, title 13, CCR, section 2479; and
14. Off-road diesel vehicles owned and operated by an individual for personal, non-commercial, and non-governmental purposes.

~~Except as provided in the paragraphs below, the regulation applies to any person, business, or government agency who owns or operates within California any diesel-fueled or alternative diesel fueled off-road compression ignition vehicle engine with maximum power of 25 horsepower (hp) or greater that is used in a two-engine crane or to provide motive power in a workover rig or to provide motive power in any other motor vehicle that (1) cannot be registered and driven safely on-road or was not designed to be driven on-road, and (2) is not an implement of husbandry or recreational off-highway vehicle. Unless they are workover rigs, two-engine cranes, or two-engine water-well drilling rigs, vehicles that were designed to be driven on-road, and have on-road engines, and still meet the original manufacturer's on-road engine emission certification standard are considered on-road and are specifically excluded from this regulation, even if they have been modified so that they cannot be registered and driven safely on-road. Off road vehicles that were designed for off-road use and have off-road engines are considered off-road and are subject to this regulation, even if they have been modified so that they can be driven safely on-road.~~

~~This regulation also applies to any person who sells a vehicle with such an engine within California.~~



~~Persons who provide financing in the form of “finance leases,” as defined in California Uniform Commercial Code Section 10103(a)(7), for in-use off-road diesel-fueled vehicles, do not “own” such vehicles for the purposes of this regulation.~~

~~Vehicles with engines subject to this regulation are used in construction, mining, rental, government, landscaping, recycling, landfilling, manufacturing, warehousing, ski industry, composting, airport ground support equipment, industrial, and other operations. The regulation does not cover locomotives, commercial marine vessels, marine engines, recreational vehicles, or combat and tactical support equipment. The regulation also does not cover stationary or portable equipment, equipment or vehicles used exclusively in agricultural operations, or equipment already subject to the Regulation for Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards. Off-road diesel vehicles owned and operated by an individual for personal, non-commercial, and non-governmental purposes are exempt from the provisions of this regulation.~~

### **(c) Definitions**

**(1) “Agricultural operations”** means (1) the growing or harvesting of crops from soil (including forest operations) and the raising of plants at wholesale nurseries, but not retail nurseries), or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution, or (2) agricultural crop preparation services such as packinghouses, cotton gins, nut hullers and processors, dehydrators, and feed and grain mills. Agricultural crop preparation services include only the first processing after harvest, not subsequent processing, canning, or other similar activities. For forest operations, agricultural crop preparation services include milling, peeling, producing particleboard and medium density fiberboard, and producing woody landscape materials.

For purposes of this regulation, a vehicle that is used by its owner for both agricultural and nonagricultural operations is considered to be a vehicle engaged in agricultural operations, only if over half of its annual operating hours are for agricultural operations.

**(2) “Airport ground support equipment”** (GSE) is mobile diesel-fueled off-road compression ignition vehicles used to service and support aircraft operations. GSE vehicles perform a variety of functions, including but not limited to: aircraft maintenance, pushing or towing aircraft, transporting cargo to and from aircraft, loading cargo, and baggage handling. GSE vehicles include equipment types such as baggage tugs, belt loaders, and cargo loaders.

**(3) “Alternative diesel fuel”** means any fuel used in a compression ignition engine that is not a reformulated diesel fuel as defined in title 13, CCR, sections 2281 and 2282 ~~of title 13, California Code of Regulations (CCR)~~, and does not require engine or fuel system modifications for the engine to operate, although minor

modifications (e.g., recalibration of the engine fuel control) may enhance performance. Examples of alternative diesel fuels include, but are not limited to, biodiesel, Fischer-Tropsch fuels, and emulsions of water in diesel fuel. A diesel fuel containing a fuel additive will be treated as an alternative diesel fuel unless:

- (A) the additive is supplied to the vehicle or engine fuel by an on-board dosing mechanism, or
- (B) the additive is directly mixed into the base fuel inside the fuel tank of the vehicle or engine, or
- (C) the additive and base fuel are not mixed until engine fueling commences, and no more additive plus base fuel combination is mixed than required for a single fueling of a single engine or vehicle.

(4) **“Alternative fuel”** means natural gas, propane, ethanol, methanol, gasoline (when used in hybrid electric vehicles only), hydrogen, electricity, fuel cells, or advanced technologies that do not rely on diesel fuel. “Alternative fuel” also means any of these fuels used in combination with each other or in combination with other non-diesel fuels.

(5) **“Best Available Control Technology” (BACT)** means the Verified Diesel Emission Control Strategy (VDECS) exhaust retrofit and accelerated turnover requirements in sections 2449.1(b)-(a)(2) and 2449.2(a)(2).

(6) **“Captive Attainment Area Fleet”** means a fleet or fleet portion, as defined under section 2449(c)(20), an identified subpart of the fleet (fleet portion, consistent with section 2449(d)), in which all of the vehicles in the fleet or fleet portion operate exclusively within the following counties: Alpine, Colusa, Del Norte, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Monterey, Plumas, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Shasta, Sierra, Siskiyou, Trinity, Tehama, and Yuba, and the portion of Sonoma County that lies within the boundaries of the North Coast Air Basin. A fleet or identified fleet portion that operates one or more vehicles outside the counties and area listed above is not a captive attainment area fleet. Captive attainment area fleets shall be treated as small fleets even if their total max hp exceeds 2,500 hp. All fleets owned by the United States, the State of California, or agencies thereof (i.e., an agency in the judicial, legislative, or executive branch of the federal or state government) are considered to be large fleets (per section 2449(c)(24)(A)), and vehicles owned by such fleets, regardless of whether they operate exclusively within the above counties and area, are not part of a captive attainment area fleet.

(7) **“Carryover retrofit credit”**, as calculated under section 2449.2(a)(2)(A)2., means a way of tracking retrofits accomplished in excess of those required by the BACT retrofit requirements. Fleets may take credit for such excess retrofits in order to do less retrofitting in later years.

(7)(8) **“Carryover BACT turnover credit”**, as calculated under section 2449.1(b)(8)(a)(2)(A)2., means a way of tracking turnover or VDECS installations

accomplished in excess of the BACT turnover requirements. Fleets may take credit for such excess turnover or VDECS installations to do less turnover or VDECS installations in later years.

**~~(8)~~(9) “Combat and ~~t~~Tactical ~~s~~Support ~~e~~Equipment”** means equipment that meets military specifications, is owned by the U.S. Department of Defense and/or the U.S. military services or its allies, and is used in combat, combat support, combat service support, tactical or relief operations or training for such operations.

**~~(9)~~(10) “Common ownership or control”** means being owned or managed day to day by the same person, corporation, partnership, or association. Vehicles managed by the same directors, officers, or managers, or by corporations controlled by the same majority stockholders are considered to be under common ownership or control even if their title is held by different business entities.

**~~(10)~~(11) “Compression ignition engine”** means an internal combustion engine with operating characteristics significantly similar to the theoretical diesel combustion cycle. The regulation of power by controlling fuel supply in lieu of a throttle is indicative of a compression ignition engine.

**~~(11)~~(12) “Dedicated ~~s~~Snow ~~r~~Removal ~~v~~Vehicle”** means a vehicle that is operated exclusively to remove snow from public roads, private roads, or other paths from which snow must be cleared to allow on-road vehicle access. Dedicated snow removal vehicles must have permanently affixed snow removal equipment such as a snow blower or auger and may include, but are not limited to, motor graders, loaders, and snow blowers.

**~~(12)~~(13) “Diesel fuel”** has the same meaning as defined in title 13, CCR, sections 2281 and 2282.

**~~(13)~~(14) “Diesel ~~p~~Particulate ~~f~~Filter”** means an emission control strategy that reduces diesel particulate matter emissions by directing all of the exhaust through a filter that physically captures particles but permits gases to flow through. Periodically, the collected particles are either physically removed or oxidized (burned off) in a process called regeneration.

**~~(14)~~(15) “Diesel particulate matter” (diesel PM)** means the particles found in the exhaust of diesel-fueled compression ignition engines. Diesel PM may agglomerate and adsorb other species to form structures of complex physical and chemical properties. The Air Resources Board (ARB) has identified diesel PM as a toxic air contaminant.

**~~(16)~~ “Diesel PM Index”** means ~~an indicator of a fleet’s overall diesel PM emission rate. The diesel PM Index for a specific fleet is determined by summing the~~

product of the maximum power of each engine times the diesel PM Emission Factor, and dividing by the fleet's total maximum power.

~~(17)~~ ***“Diesel PM Target Rate”*** means the fleet average that a specific fleet must meet in a compliance year in order to show compliance with the fleet average requirements. The Diesel PM Target Rate varies depending on a fleet's horsepower distribution. The Diesel PM Target Rate for a specific fleet for each compliance year is determined by summing (adding) the product of the maximum power of each engine times the diesel PM target, and dividing the resulting sum by the fleet's total maximum power.

~~(15)~~~~(18)~~ ***“Emergency operation”*** means helping alleviate an immediate threat to public health or safety. Examples of emergency operation include repairing or preventing damage to roads, buildings, terrain, and infrastructure as a result of an earthquake, flood, storm, fire, other infrequent act of nature, or terrorism. Routine maintenance or construction to prevent public health risks does not constitute emergency operation.

~~(16)~~~~(19)~~ ***“Emission fFactor”*** means PM or oxides of nitrogen (NOx) emission rate in grams per brake-horsepower hour (g/bhp-hr) as shown in Appendix A, unless the engine is a Post-2007 Flexibility Engine (see definition).

(A) Engines certified to Family Emission Limits and flexibility engines certified before January 1, 2007 must still use the emission factors in Appendix A.

(B) For engines that have been retrofit with VDECS, the PM Emission Factor is reduced 50 percent for a Level 2 VDECS, and 85 percent for a Level 3 VDECS; the NOx Emission Factor is reduced by the percentage NOx emission reductions that are verified, if any. The PM Emission Factor is not reduced for a Level 1 VDECS.

~~(17)~~~~(20)~~ ***“Equipment iIdentification nNumber”*** means a unique identification number assigned by ARB to each vehicle in an owner's fleet subject to this regulation. All reporting and recordkeeping will link vehicle data with this number.

~~(18)~~~~(21)~~ ***“Executive Officer”*** means the Executive Officer of the ARB or his or her authorized representative.

~~(19)~~~~(22)~~ ***“Family eEmission lLimit” (FEL)*** means an emission level that is declared by the manufacturer to serve in lieu of an emission standard for certification purposes and for the averaging, banking, and trading program, as defined in title 13, CCR, section 2423.

~~(20)~~~~(23)~~ ***“Fleet”*** means all off-road vehicles and engines owned by a person, business, or government agency that are operated within California and are subject to the regulation. A fleet may consist of one or more vehicles. A fleet does not include vehicles that have never operated in California.

“Fleet portions” – means that part of a fleet for which daily operations and dispatching are managed by different responsible officials because they are part of different subsidiaries, divisions, or other organizational substructures of a parent company, corporation or agency, which owns or controls the operations of the subsidiary, division, or organizational substructure, and the parent company, corporation, or agency elects to have some or all the fleet portions comply with the performance requirements separately and be reported separately. A fleet may have some fleet portions that meet the definition of captive attainment area fleet and some fleet portions that do not. However, the total max hp of the vehicles under common ownership or control of the parent company, corporation, or agency determines the fleet size. Once a fleet begins to comply and report separately as fleet portions, the fleet portions must continue to comply and report separately, and the fleet portions must meet the adding vehicle requirements in section 2449(d)(6) just as if they were separate fleets.

(21) “Fleet average index” means an indicator of a fleet’s overall emission rate. The fleet average index for a specific fleet is determined by summing (adding) the product of the max hp of each engine times the emission factor, and dividing by the fleet’s total max hp.

(22) “Fleet average target rate” means the fleet average that a specific fleet must meet in a compliance year in order to show compliance with the fleet average requirements. The fleet average target rate varies depending on a fleet’s hp distribution. The fleet average target rate for a specific fleet for each compliance year is determined by summing (adding) the product of the max hp of each engine times the target, and dividing the resulting sum by the fleet’s total max hp.

(23)(24) “Fleet Owner” means, except as qualified below, the person who owns and has possession of the vehicles in the fleet.

“Rental or Leased Fleets” - Vehicles that are owned by a rental or leasing company and that are leased by the same lessee for a period of one year or more may be excluded from the rental company fleet and included in the fleet of the lessee only if such arrangement is delineated in the written lease agreement.

Vehicles that are rented or leased for a period of less than one year must be included in the fleet of the rental or leasing company. Off-road vehicles and engines subject to this regulation that are owned by a lessor and leased to a lessee under a “lease” as defined in California Uniform Commercial Code, section 10103(a)(10), for a duration of at least one year, dated prior to the effective date of these regulations, are considered part of the fleet of the lessee rather than the lessor.

(24)(25) “Fleet Size Category” – means fleets are classified by size as described below. A fleet must meet large fleet requirements if the total vehicles

under common ownership or control would be defined as a large fleet. A fleet must meet medium fleet requirements if the total vehicles under common ownership or control would be defined as a medium fleet. Individual federal or state agencies may report as separate fleets, but all vehicles owned by agencies of the United States or the State of California agencies must meet the large fleet requirements. Permanent and year-by-year Low-use vehicles, dedicated snow-removal vehicles, and vehicles used solely for emergency operations need not be included in the total ~~max hp~~maximum power used to classify fleets by size.

**(A) "Large fFleet"** – A fleet with a total ~~max hp~~maximum power (as defined below) greater than 5,000 ~~horsepower~~ (hp). A fleet must meet large fleet requirements if the total vehicles under common ownership or control would be defined as a large fleet. All fleets owned by the United States, the State of California, or agencies thereof (i.e., an agency in the judicial, legislative, or executive branch of the federal or state government) will be considered as a unit whole and must meet the large fleet requirements.

**(B) "Medium fFleet"** – A fleet that is not a small or large fleet.

**(C) "Small fFleet"** – A fleet with total ~~max hp~~maximum power of less than or equal to 2,500 hp that is owned by a business, non-profit organization, or local municipality, or a local municipality fleet in a low population county irrespective of total ~~max hp~~maximum power, or a non-profit training center irrespective of total ~~max hp~~maximum power, or a captive attainment area fleet irrespective of total ~~max hp~~maximum power.

**(25) "Flexibility engine"** means an engine certified to the implementation flexibility standards in title 13, CCR, section 2423(d).

"Post-2007 flexibility engine" – A flexibility engine certified on or after January 1, 2007. Such flexibility engines are generally labeled as follows by the engine manufacturer:

"THIS ENGINE COMPLIES WITH CALIFORNIA EMISSION REQUIREMENTS UNDER 13 CCR 2423(d)..." or

"THIS ENGINE CONFORMS TO CALIFORNIA OFF-ROAD COMPRESSION-IGNITION ENGINE REGULATIONS UNDER 13 CCR, 2423(d)."

**(26) "Forest operations"** means (A) forest fire prevention activities performed by public agencies, including but not limited to construction and maintenance of roads, fuel breaks, firebreaks, and fire hazard abatement or (B) cutting or removal or both of timber, other solid wood products, including Christmas trees, and biomass from forestlands for commercial purposes, together with all the work incidental thereto, including but not limited to, construction and maintenance of roads, fuel breaks, firebreaks, stream crossings, landings, skid trails, beds for falling trees, fire hazard abatement, and site preparation that involves disturbance of soil or burning of vegetation following forest removal activities. Forest operations include the cutting or removal of trees, tops, limbs and or brush

which is processed into lumber and other wood products, and or for landscaping materials, or biomass for electrical power generation. Forest operations do not include conversion of forestlands to other land uses such as residential or commercial developments.

~~(27) “Highest Level Verified Diesel Emission Control Strategy” (VDECS) means the highest level VDECS verified by ARB under its Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emission from Diesel Engines (Verification Procedure), title 13, CCR, sections 2700-2710, for a specific engine as of 10 months prior to the compliance date, which (1) can be used without impairing the safe operation of the vehicle as demonstrated per section 2449(e)(8), and (2) the diesel emission control strategy manufacturer and authorized diesel emission control strategy dealer agree can be used on a specific engine and vehicle combination without jeopardizing the original engine warranty in effect at the time of application.~~

~~Plus designations do not matter; that is, a Level 3 Plus is the same diesel PM level as Level 3; and Level 2 Plus is the same diesel PM level as Level 2.~~

~~The highest level VDECS is determined solely based on verified diesel PM reductions, not based on verified NOx reductions. All Level 3 diesel PM devices are higher than all Level 2 diesel PM devices. Level 1 devices are never considered highest level VDECS for the purpose of this regulation.~~

~~(27)(28) “Hour mMeter lLog” means a log of the hours that a vehicle operated directly taken from the vehicle’s hour meter.~~

~~(28)(29) “Implement of husbandry” is as defined in California Vehicle Code (Veh.Code) division 16.~~

~~(29)(30) “Local mMunicipality” means a city, county, city and county, special district, or other public agency, or two or more public entities acting jointly, or the duly constituted body of an Indian reservation or rancheria. Agencies of the United States of America or the State of California, and departments, divisions, public corporations, or public agencies of this State or of the United States are not considered local municipalities.~~

~~(30)(31) “Low- pPopulation cCounty lLocal mMunicipality fFleet” means a fleet owned by a local municipality (as defined above) that is located in a county as defined in title 13, CCR, section 2022(b)(42) and identified in section 2022.1(c)(2), Table 2, or, using the criteria set forth in title 13, CCR, section 2022.1(c)(4), a local municipality not located in a low-population county that has requested and has received Executive Officer approval to be treated like a municipality in a low-population county. Fleets owned by such local municipalities shall be treated as small fleets even if their total max hpmaximum power exceeds 2,500 hphorsepower.~~

~~(32) “Low-use vehicle” means a vehicle that operated in California less than 100 hours during the preceding 12-month period running from March 1 to end of February. For example, when reporting in 2009, the hours of use between March 1, 2008 and February 28, 2009 would be used to determine low-use status. To be considered a low-use vehicle, the fleet owner must submit engine operation data from a functioning non-resettable hour meter.~~

~~(A) Vehicles used outside California – Vehicles that operate both inside and outside of California can meet the low-use vehicle definition if they are used less than 100 hours per year in California.~~

~~(B) Three-year rolling average – A vehicle operated only in California for the previous three years and owned by the same owner during that period will be considered low-use if it operated on average less than 100 hours per year during that previous three-year period.~~

~~(C) Emergency operation hours – Hours used for emergency operations are not counted when determining low-use status.~~

~~(31)(33) “Maximum power” ( $M_{max}$  Hhp) means the engine’s net horsepower (hp) or net flywheel power certified to Society of Automotive Engineers (SAE) Method J1349 or International Organization for Standardization (ISO) Method 9249. If the engine’s net horsepower or net flywheel power certified to SAE Method J1349 or ISO Method 9249 is not readily available, another net horsepower or net flywheel power from the manufacturer’s sales and service literature or horsepower from the engine label may be used.~~

~~(32)(34) “Model year” has the same meaning as defined in title 13, CCR, section 2421(a)(37).~~

~~(33)(35) “Motor vehicle” has the same meaning as defined in Veh. Code section 415.~~

~~(34)(36) “New fleet” means a fleet that is acquired or that enters California on or after January 1, 2012. Such fleets may include new businesses or out-of-state businesses that bring vehicles into California for the first time on or after January 1, 2012.~~

~~(37) “NOx index” means an indicator of a fleet’s overall NOx emission rate. The NOx Index for a specific fleet is determined by summing the product of the maximum power of each engine times the NOx Emission Factor, and dividing by the fleet’s total maximum power.~~

~~(38) “NOx target rate” means the NOx fleet average that a specific fleet must meet in a compliance year in order to show compliance with the fleet average requirements. The NOx Target Rate varies depending on a fleet’s horsepower distribution. The NOx Target Rate for a specific fleet for each compliance year is determined by summing (adding) the product of the maximum power (Max Hp) of~~



each engine times the NOx target, and dividing the resulting sum by the fleet's total maximum power.

~~(35)~~**(39) “Non-profit Training Center”** means an entity that operates a program for training in the use of off-road vehicles and that (A) is a community college program that trains students in the use of off-road vehicles or (B) qualifies as a non-profit or not for profit organization under title 26 Internal Revenue Code section 501(a), (c)(3), (c)(5), or (c)(6). Any vehicles that are not used for an off-road training program are not considered part of a non-profit training center and must be considered a separate fleet.

~~(36)~~**(40) “Off-highway vehicle”** is defined in Veh. Code division 16.5.

~~(37)~~**(41) “Operator Log”** means a log of the hours that a vehicle operated taken from records of vehicle operator hours.

~~(38)~~**(42) “Oxides of nitrogen” (NOx)** means compounds of nitric oxide, nitrogen dioxide, and other oxides of nitrogen. Nitrogen oxides are typically created during combustion processes and are major contributors to smog formation and acid deposition.

~~(39)~~**“Permanent low-use vehicle”** means a vehicle that a fleet owner has designated as operating less than 200 hours a calendar year, for all years subsequent to the designation. For example, if a fleet designates a vehicle as permanent low-use at any point in 2014, that vehicle can only be used less than 200 hours in any calendar year from 2015 onwards. To be considered a permanent low-use vehicle, the fleet owner must submit the engine hours of operation from a functioning non-resettable hour meter.

**(A) Vehicles used outside California** - Vehicles that operate both inside and outside of California can meet the permanent low-use vehicle definition if they are used less than 200 hours per year in California.

**(B) Emergency operation hours** - Hours used for emergency operations are not counted when determining permanent low-use status.

**(C) Future increase in hours** – Once designated as permanent low-use, a vehicle may only be used up to 200 hours per year by the fleet unless the vehicle meets the adding vehicles requirements in section 2449(d)(6). If the vehicle meets the adding vehicle requirements, the fleet may increase the use to 200 hours or more per year, and report the updated status of the vehicle to remove the low-use designation.

**(D) No obligation** – A fleet is not obliged to designate a vehicle whose use drops below 200 hours per year as a permanent low-use vehicle. If such a vehicle is not designated as permanent low-use, its use may increase to 200 hours or more per year in subsequent years without meeting the adding vehicles requirements in section 2449(d)(6).

**(E) Two-engine vehicles** – Both engines of two-engine vehicles must each operate less than 200 hours per year in order for the vehicle to be considered a permanent low-use vehicle.

~~(43) “Post-2007 Flexibility Engine” means an engine certified on or after January 1, 2007 to the implementation flexibility standards in title 13, CCR, section 2423(d). Such flexibility engines are generally labeled as follows by the engine manufacturer:~~

~~“THIS ENGINE COMPLIES WITH CALIFORNIA EMISSION REQUIREMENTS UNDER 13 CCR 2423(d)...” or  
“THIS ENGINE CONFORMS TO CALIFORNIA OFF-ROAD COMPRESSION-IGNITION ENGINE REGULATIONS UNDER 13 CCR, 2423(d).”~~

~~Post-2007 flexibility engines should use the emission standard to which the engine is certified. For example, a Tier 4 engine flexed back to Tier 2 emission levels should use the Tier 2 PM standard in title 13, CCR, section 2423(b)(1)(A) as the emission factor (converted from grams per kilowatt hour (g/kW-hr) to g/bhp-hr by multiplying by 0.746).~~

**(40)(44) “Queuing”** means the intermittent starting and stopping of a vehicle while the driver, in the normal course of doing business, is waiting to perform work or a service, and when shutting the vehicle engine off would impede the progress of the queue and is not practicable. Queuing does not include the time a driver may wait motionless in line in anticipation of the start of a workday or opening of a location where work or a service will be performed.

**(41)(45) “Registered and driven safely on-road”** means a vehicle meets the requirements to be registered for on-road operation in Veh. Code division 3, chap. 1, article 1, sections 4000 et seq. (i.e., required to be registered or could be registered), and the requirements to be driven safely on-road in “Equipment of Vehicles” requirements in Veh. Code division 12, chap. 1, sections 24000 et seq. and “Size, Weight, and Load” requirements in Veh. Code division 15, sections 35000 et seq. Having a California Special Construction Equipment plate as defined in California Veh. Code sections 565 and 570 does not constitute registration.

**(42)(46) “Replacement”** means the addition of off-road diesel vehicles to a fleet that had retired one or more off-road diesel vehicles of an equivalent hp/horsepower in a given year.

**(43)(47) “Repower”** means to replace the engine in a vehicle with another engine meeting a subsequent engine emissions standard (e.g., replacing a Tier 0 engine with a Tier 2 or later engine).

**(44)(48) “Responsible Official”** means one of the following:

- (A) For a corporation: A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation.
- (B) For a partnership or sole proprietorship: a general partner or the proprietor, respectively.
- (C) For a municipality, state, federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of the U.S. EPA).

**(45)(49) “Retire or retirement”** means ~~to take an~~removal of an engine out of service from fleet service, and so that the engine is not subsequently operated # again by the fleet in the State of California. To retire an engine, the vehicle with the engine may be moved outside of California, sold to another fleet (in or outside California), or scrapped. The return of a rented or leased vehicle by a fleet to a rental or leasing company is not considered to be a retirement. Similarly, the rental or leasing of a vehicle by a rental or leasing company does not count as a retirement for the rental or leasing company.

**(46)(50) “Snow removal operations”** means removing snow from public roads, private roads, or driveways.

**(47)(51) “Specialty vehicle”** means a vehicle for which no used vehicle with a cleaner engine that can serve an equivalent function and perform equivalent work is available.

**(48)(52) “Tier 0 eEngine”** means an engine not subject to the requirements in title 13, CCR, section 2423; Title 40, Code of Federal Regulations (CFR), Part 89; or Title 40, CFR, Part 1039.

**(49)(53) “Tier 1 eEngine”** means an engine subject to the Tier 1 new engine emission standards in title 13, CCR, section 2423(b)(1)(A) and/or Title 40, CFR, Part 89.112(a). This also includes engines certified under the averaging, banking, and trading program with respect to the Tier 1 Family Emission Limits (FEL) listed in title 13, CCR, section 2423(b)(2)(A) and/or Title 40, CFR, Part 89.112(d).

**(50)(54) “Tier 2 eEngine”** means an engine subject to the Tier 2 new engine emission standards in title 13, CCR, section 2423(b)(1)(A) and/or Title 40, CFR, Part 89.112(a). This also includes engines certified under the averaging, banking, and trading program with respect to the Tier 2 FEL listed in title 13, CCR, section 2423(b)(2)(A) and/or Title 40, CFR, Part 89.112(d).

**(51)(55) “Tier 3 eEngine”** means an engine subject to the Tier 3 new engine emission standards in title 13, CCR, section 2423(b)(1)(A) and/or Title 40, CFR, Part 89.112(a). This also includes engines certified under the averaging, banking, and trading program with respect to the Tier 3 FEL listed in title 13, CCR, section 2423(b)(2)(A) and/or Title 40, CFR, Part 89.112(d).

**(52)(56) “Tier 4 Final eEngine”** means an engine subject to the final after-treatment-based Tier 4 emission standards in title 13, CCR, section 2423(b)(1)(B) and/or Title 40, CFR, Part 1039.101. This also includes engines certified under the averaging, banking, and trading program with respect to the Tier 4 FEL listed in title 13, CCR, section 2423(b)(2)(B) and/or Title 40, CFR, Part 1039.101.

**(53)(57) “Tier 4 Interim eEngine”** means an engine subject to the interim Tier 4 emission standards (also known as transitional) in title 13, CCR, section 2423(b)(1)(B) and/or Title 40, CFR, Part 1039.101. This also includes engines certified under the averaging, banking, and trading program with respect to the Tier 4 FEL listed in title 13, CCR, section 2423(b)(2)(B) and/or Title 40, CFR, Parts ~~1039.101~~1039.102 and 1039.104(g).

**(54)(58) “Total maximum power” (total max hp)** means the sum of the ~~max hp maximum power~~ for all of a fleet’s engines that are subject to this regulation. ~~Permanent and year-by-year~~ Low-use vehicles, dedicated snow-removal vehicles, and vehicles used solely for emergency operations shall need not be included in the sum.

**(55) “Turnover”** means retiring a vehicle, designating a vehicle as a permanent low-use vehicle, repowering a vehicle with a higher tier engine, or rebuilding the engine to a more stringent emissions configuration. Rented or leased vehicles that are returned to a rental or leasing company do not count as turnover for the lessee. Similarly, vehicles leased or rented out by a rental or leasing company do not count as turnover for the rental or leasing company.

**(56)(59) “Two- eEngine cGrane”** means a mobile diesel-powered machine with a hoisting mechanism mounted on a specially constructed truck chassis or carrier; one engine provides motive power, and a secondary (auxiliary) engine 50 bhp or greater that is used to lift and move materials and objects.

**(57) “Two-engine vehicle”** means a specially constructed on-road or off-road mobile diesel-powered vehicle that was designed by the original equipment manufacturer to be equipped with two diesel engines: one engine provides the primary source of motive power of the vehicle while the second engine is an auxiliary engine 50 bhp or greater that is permanently attached and integrated into the design of the vehicle to perform a specific function, which may include providing auxiliary power to attachments, performing special job functions, or providing additional motive power.

**(58)(60) “Two-engine water-well drilling rig”** means a mobile diesel-powered drilling rig owned by a water well drilling contractor with a current, valid C-57 license issued by the Contractors State License Board of California and used exclusively to drill water wells with a drilling mechanism mounted on a specialty constructed truck chassis or carrier; one engine provides motive power, and a secondary (auxiliary) engine 50 bhp or greater that is used to power the drilling mechanism.

**(59)(60) “Verified dDiesel eEmission cControl sStrategy” (VDECS)** means an emissions control strategy, ~~designed primarily for the reduction of diesel PM emissions, which that~~ has been verified pursuant to the “Verification Procedures, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emission from Diesel Engines” (Verification Procedure), title 13, CCR, sections 2700-2710. VDECS can be verified to reduce PM emissions, or NOx emissions, or both. VDECS can be verified to achieve Level 1 diesel PM reductions (25 percent), Level 2 diesel PM reductions (50 percent), or Level 3 diesel PM reductions (85 percent). VDECS may also be verified to achieve NOx reductions. See also definition of Highest Level VDECS.

**(A) “Highest level PM VDECS”** means the highest level VDECS verified by ARB to reduce PM under its Verification Procedure. The highest level is determined solely based on verified diesel PM reductions, not based on verified NOx reductions. VDECS can be verified to achieve Level 1 diesel PM reductions (at least 25 percent), Level 2 diesel PM reductions (at least 50 percent), or Level 3 diesel PM reductions (at least 85 percent). All Level 3 diesel PM devices are higher than all Level 2 diesel PM devices. Level 1 PM devices are never considered highest level PM VDECS for the purpose of this regulation. “Plus” designations do not matter; that is, a Level 3 Plus is the same diesel PM level as Level 3; and Level 2 Plus is the same diesel PM level as Level 2. A PM VDECS shall be considered the highest level PM VDECS only if (1) it can be used without impairing the safe operation of the vehicle as demonstrated per section 2449(e)(8), and (2) the diesel emission-control strategy manufacturer and authorized diesel emission-control strategy dealer agree it can be used on a specific engine and vehicle combination without jeopardizing the original engine warranty in effect at the time of application.

**(B) “VDECS verified to reduce NOx”** means VDECS verified by ARB to reduce NOx under its Verification Procedure. NOx VDECS are not verified by Level, but are verified by the percent reduction in NOx emissions from the engine achieved by the VDECS. See also definition of Verified Percent NOx Reduction.

**(60) “Verified percent NOx reduction”** means the verified percent reduction in NOx emissions from the engine achieved by the VDECS verified to reduce NOx.

**(61) “VDECS fFailure”** means the condition of a VDECS not achieving the emissions reductions to which the VDECS is verified. Such a condition could be

due to inappropriate installation, damage, or deterioration during use. If a Level 3 VDECS is emitting visible smoke, it ~~should~~shall be assumed to have failed.

**(62) “Workover rig”** means a mobile self-propelled rig used to perform one or more remedial operations, such as deepening, plugging back, pulling and resetting liners, on a producing oil or gas well to try to restore or increase the well’s production.

**(63) “Year-by-year low-use vehicle”** means a vehicle that operated in California less than 200 hours during the preceding 12-month calendar year. For example, when reporting in 2014, the hours of use between January 1, 2013 and December 31, 2013 would be used to determine year-by-year low-use status. To be considered a year-by-year low-use vehicle, the fleet owner must annually submit engine operation data from a functioning non-resettable hour meter.

**(A) Vehicles used outside California** - Vehicles that operate both inside and outside of California can meet the year-by-year low-use vehicle definition if they are used less than 200 hours per year in California.

**(B) Three-year rolling average** - A vehicle operated only in California for the previous three years and owned by the same owner during that period will be considered year-by-year low-use if it operated on average less than 200 hours per year during that previous three-year period.

**(C) Emergency operation hours** - Hours used for emergency operations are not counted when determining year-by-year low-use status.

**(E) Two-engine vehicles** – Both engines of two-engine vehicles must each operate less than 200 hours per year in order for the vehicle to be considered a year-by-year low-use vehicle.

#### **(d) Performance Requirements –**

Fleets that are subject to fleet average requirements in section 2449.1(a) may include vehicles and systems used in place of diesel vehicles in their fleet average index and target rate calculations as described in subsection (1) below. ~~Fleets that are subject to fleet average requirements may opt to include hours of operation in the fleet average calculation as described in subsection (2) below.~~ Each fleet must meet the performance requirements in subsections ~~(3) to (10)~~(2) to (9) below. There are differing requirements for large, medium, and small fleets. ~~As stated in section 2449(c)(20), if various portions of a fleet are under the control of different responsible officials because they are part of different subsidiaries, divisions, or other organizational structures of a company or agency, the fleet portions may comply with the performance requirements separately and be reported separately. However, the total maximum power of the vehicles under common ownership or control determines the fleet size. Captive attainment area fleets, non-profit training centers, and fleets owned by low-population county local municipalities are subject to the small fleet requirements, even if their total max~~ hp~~maximum power exceeds 2,500 hp~~horsepower. Section ~~2449(d)(4)~~2449(d)(3) describes requirements for fleets that change in size.

**(1) Vehicles and Systems Used in Place of Diesel Vehicles** - Fleets with electric, ~~or alternative fuel, or gasoline-powered~~ vehicles may include such vehicles in their fleet average index and target rate calculations as follows:

**(A) ~~Electric and Alternative Fuel and Gasoline-Powered~~ Vehicles Purchased ~~on or after January 1, 2007~~**

1. Fleets may include an ~~electric and alternative fuel or gasoline-powered~~ vehicle purchased ~~on or after January 1, 2007~~, with a ~~max hp~~maximum power 25 ~~hp~~horsepower or greater (or that replaced a diesel vehicle with ~~max hp~~maximum power 25 ~~hp~~horsepower or greater) in their fleet average index if all of the following conditions are met:
  - a. The owner can demonstrate it serves a function and performs the work equivalent to that of diesel vehicles and is used for a purpose for which diesel vehicles are predominantly used,
  - b. The ~~electric or alternative fuel~~ vehicle is used predominantly outdoors,
  - c. The ~~electric or alternative fuel~~ vehicle is not already included in the fleet average emission level requirements for Large Spark Ignition Engine Fleets in title 13, Section 2775.1; and
  - d. ~~If the vehicle is an alternative fuel vehicle,~~ The owner must demonstrate that it is certified to a NOx standard less than or equal to the Tier 1 NOx standard for the same ~~hp~~horsepower in title 13, CCR, section 2423(b)(1)(A) and is less than or equal to the NOx emissions of a diesel engine of the same model year and ~~hp~~horsepower.
  - e. If the vehicle is a gasoline-powered vehicle, the owner must identify the diesel vehicle that the gasoline-powered vehicle replaced and maintain records documenting the function of the diesel vehicle replaced and the gasoline-powered replacement vehicle, and the dates of sale and purchase for both vehicles.
2. Fleets may include a diesel vehicle with a max hp 25 hp or greater that has been repowered with an alternative fueled or gasoline-powered engine in their fleet average index and target rate calculations.
3. For the purposes of compliance with section 2449.1(a):
  - a. **Alternative fuel vehicles** - Each alternative fuel vehicle, or diesel vehicle that has been repowered with an alternative fuel engine, shall use an emission factor equal to the NOx emission standard to which its engine is certified in g/bhp-hr. If the alternative fuel vehicle or engine is not certified to a NOx emission standard, the owner may apply to the Executive Officer to use an emission factor. In the application, the owner must demonstrate that the chosen emission factor is appropriate and not exceeded by the alternative fuel vehicle.
  - b. **Gasoline-powered vehicles** - Each gasoline powered vehicle, or vehicle that has been repowered with a gasoline-powered engine, shall use an emission factor equal to the gasoline-powered vehicle's or engine's HC+NOx certified emission standard in g/bhp-hr multiplied by 0.95.
- 4.2. Fleets may include a diesel vehicle with a ~~max hp~~maximum power 25 ~~hp~~horsepower or greater that has been converted to alternative fuel or

gasoline-power in their fleet average index and target rate calculations. The Emission Ffactor for NOx remains the same as the emission factor for the diesel vehicle. The Emission Factor for PM is 0.

3. ~~For the purposes of compliance with sections 2449.1(a)(1) and 2449.2(a)(1), electric vehicles shall be credited as follows:~~

~~a. **Max Hp for Electric Vehicles** – For an electric vehicle that replaced a diesel vehicle in the owner's fleet, the maximum power of the diesel vehicle replaced may be used as the electric vehicle's *Max Hp*. For an electric vehicle added to the fleet, the fleet owner may apply to the Executive Officer to use the maximum power of a diesel vehicle that serves the same function and performs equivalent work to that of the electric vehicle. In making his or her determination, the Executive Officer will approve the use of the minimum *Max Hp* of a diesel vehicle that would be required to perform the same functions and equivalent work. If no request to the Executive Officer is received, the electric vehicle's own maximum power rating should be used.~~

~~b. **Double Credit for Electric in 2010-2016** – For compliance dates in 2010 through 2016, the *Max Hp* of all electric vehicles purchased on or after January 1, 2007 may be doubled in determining the *Max Hp* that is used in calculating the Diesel PM Index, and as appropriate, NOx Index. An *Emission Factor* of 0 may be used. The *Max Hp* of each electric vehicle is included but not doubled in the calculation of Diesel PM Target Rate and NOx Target Rate.~~

~~c. **Single Credit for Electric in 2017 and Later** – For compliance dates in year 2017 and later, the *Max Hp* of all electric vehicles purchased on or after January 1, 2007 is used in determining the *Max Hp* that is used in calculating the Diesel PM and NOx Target Rates, Diesel PM Index, and, as appropriate, NOx Index. An *Emission Factor* of 0 may be used.~~

4. ~~For the purposes of compliance with sections 2449.1(a)(1) and 2449.2(a)(1), each alternative fuel vehicle should use an Emission Factor equal to the emission standard to which its engine is certified in g/bhp-hr. If the alternative fuel vehicle is not certified to a NOx or diesel PM emission standard, the owner may apply to the Executive Officer to use an emission factor. In the application, the owner must demonstrate that the chosen emission factor is appropriate and not exceeded by the alternative fuel vehicle.~~

**(B) Electric Vehicles and Alternative Fuel Vehicle Purchased Prior to January 1, 2007**

1. Fleets may include an electric vehicle with a max hp 25 hp or greater or that replaced a diesel vehicle with max hp 25 hp or greater in their fleet average index if all the following conditions are met:

a. The owner can demonstrate it serves a function and performs the work equivalent to that of diesel vehicles and is used for a purpose for which diesel vehicles are predominantly used;

b. The electric vehicle is used predominately outdoors; and



- c. Except as provided in section 2449(d)(1)(B)2.a., the electric vehicle is not already included in the fleet average emission level requirements for Large Spark Ignition Engine Fleets in title 13, section 2775.1.
2. For the purposes of compliance with sections 2449.1(a), electric vehicles shall be credited as follows:
- a.4. GSE Electric Vehicles Purchased Prior to January 1, 2007 -**  
 Electric airport GSE vehicles with a max hpmaximum power of 25 hphorsepower or greater (or that replaced a diesel vehicle with max hpmaximum power 25 hphorsepower or greater) purchased prior to January 1, 2007, may be partially counted in the fleet average calculations as follows:
- i.a. Max Hp for Electric Vehicles - For an electric vehicle that replaced a diesel vehicle in the owner's fleet, the max hpmaximum power of the diesel vehicle replaced may be used as the electric vehicle's max hpMax Hp. Otherwise, the electric vehicle's own max hpmaximum power rating shouldshall be used.
- ii.b. Include such vehicle's max hpMax Hp times 0.2 as the max hpMax Hp in calculating the fleet average index and target rate Target Rate, Diesel PM Index, and, as appropriate, NOx Index in sections 2449.1(a)(4), along with an Eemission Ffactor of 0.
- b. Non-GSE Electric Vehicles Purchased Prior to January 1, 2007 -**  
Electric vehicles with a max hp of 25 hp or greater purchased prior to January 1, 2007 that replaced a diesel vehicle with max hp 25 hp or greater, may be counted in the fleet average calculations as follows:
- i. Max Hp for Electric Vehicles - For an electric vehicle that replaced a diesel vehicle in the owner's fleet, the max hp of the diesel vehicle replaced may be used as the electric vehicle's max hp. Otherwise, the electric vehicle's own max rating shall be used.
- ii. Include such vehicle's max hp as the max hp in calculating the fleet average index and target rate in section 2449.1(a), along with an emission factor of 0.
- c. Electric Vehicles Purchased on or after January 1, 2007**
- i. Max Hp for Electric Vehicles - For an electric vehicle that replaced a diesel vehicle in the owner's fleet, the max hp of the diesel vehicle replaced may be used as the electric vehicle's max hp. For an electric vehicle added to the fleet that did not replace a diesel vehicle, the fleet owner may apply to the Executive Officer to use the max hp of a diesel vehicle that serves the same function and performs equivalent work to that of the electric vehicle. In making his or her determination, the Executive Officer will approve the use of the minimum max hp of a diesel vehicle that would be required to perform the same functions and equivalent work. If no request to the Executive Officer is received, the electric vehicle's own max hp rating shall be used.
- ii. Double Credit for Electric in 2014-2016 - For compliance dates in 2014 through 2016, the max hp of all electric vehicles purchased on

or after January 1, 2007 may be doubled in determining the max hp that is used in calculating the fleet average index. An emission factor of 0 may be used. The max hp of each electric vehicle is included but not doubled in the calculation of fleet average target rate.

iii. Single Credit for Electric in 2017 and Later - For compliance dates in year 2017 and later, the max hp of all electric vehicles purchased on or after January 1, 2007 is used in determining the max hp that is used in calculating the fleet average index and target rate. An emission factor of 0 may be used.

3. Electric vehicles need not be included when determining fleet size, or when calculating the required hp for the BACT requirements in section 2449.1(b).

2. Non-GSE:

- ~~a. Fleet owners may count a non-GSE electric or alternative fuel vehicle purchased prior to January 1, 2007 in the fleet average calculations if all of the following conditions are met:
  - ~~i. The owner can demonstrate it serves a function and performs the work equivalent to that of diesel vehicles and is used for a purpose for which diesel vehicles are predominantly used,~~
  - ~~ii. the electric or alternative fuel vehicle is used predominantly outdoors,~~
  - ~~iii. the vehicle is not already counted toward the fleet average emission level requirements for large spark ignition engine fleets in title 13, CCR, section 2775.1; and~~
  - ~~iv. if the vehicle is alternative fuel vehicle with a certified NOx emission level, the certified NOx emission levels are lower than the NOx standard for the same model year and horsepower in section 2423(b)(1) and Title 40, CFR, Part 89.112(a) and Title 40, CFR, Part 1039.101.~~~~
- ~~b. Include such vehicle's Max Hp as the Max Hp in the calculating the Target Rate, Diesel PM Index, and, as appropriate, NOx Index in sections 2449.1(a)(1) and 2449.2(a)(1). For an electric vehicle, use an Emission Factor of 0. For an alternative fuel vehicle, use an Emission Factor equal to the emission standard to which its engine is certified in g/bhp-hr. If the alternative fuel vehicle is not certified to a NOx or diesel PM emission standard, the owner may apply to the Executive Officer to use an emission factor. In the application, the owner must demonstrate that the chosen emission factor is appropriate and not exceeded by the alternative fuel vehicle.~~

**(C) Stationary or Portable System Used to Replace Mobile Diesel Vehicle**  
Fleet owners may apply to the Executive Officer to include electric portable or electric stationary systems that replace mobile diesel vehicles, such as an electric conveyor system used to replace diesel haul trucks at a mine, in the fleet average calculations. The system may be considered in the fleet average calculations by including the max hp~~maximum power~~ of the diesel

vehicles replaced in the calculations of the fleet average index and target rate Target Rate, Diesel PM Index, and NOx Index above, along with an Emission Factor of 0. In order to count such a system, all the following conditions must be met:

1. The owner must demonstrate that it replaced an off-road diesel fueled vehicle subject to this regulation on or after January 1, 2007, and
2. The system is not already counted toward the fleet average emission level requirements for Large Spark Ignition Engine Fleets in title 13, CCR, section 2775.1 or for portable diesel engine fleets in title 17, CCR, section 93116.3.

**(D) Hybrid Off-Road Vehicles**

Fleets may include a hybrid off-road diesel vehicle with a max hp 25 hp or greater in their fleet average index and target rate calculation. The emission factor for the hybrid vehicle shall be equal to the NOx emission standard to which its engine is certified in g/bhp-hr. If a fleet owner wishes to use different emission factor, other than the standard to which the engine is certified, the owner may apply to the Executive Officer to use an alternative emission factor. The Executive Officer shall approve the alternative emission factor if, in the fleet owner's application, the owner demonstrates that the chosen emission factor is appropriate and not exceeded by the hybrid vehicle.

**~~(D) Gasoline-Powered Vehicles Used to Replace Diesel Vehicles~~** – Fleets

~~may include a gasoline-powered vehicle of 25 horsepower or greater that replaces a diesel vehicle on or after January 1, 2007 in their fleet average only if all the following conditions are met:~~

- ~~1. The owner can identify the diesel vehicle that the gasoline-powered vehicle replaced and show that the diesel vehicle was retired from the fleet within 6 months of the date that the gasoline-powered vehicle was added to the fleet.~~
- ~~2. The gasoline-powered vehicle serves the same function as the diesel vehicle that it replaced and is of similar horsepower.~~
- ~~3. The fleet would continue to be in compliance with the fleet average emission level requirements for large spark ignition engine fleets in title 13, CCR, section 2775.1 if the gasoline-powered vehicle that replaces a diesel vehicle were excluded from the large spark ignition average.~~
- ~~4. The owner must demonstrate the gasoline-powered vehicle is certified to a NOx standard less than or equal to the Tier 1 NOx standard for the same horsepower in title 13, CCR, section 2423(b)(1)(A) and less than or equal to the NOx emissions of a diesel engine of the same model year and horsepower.~~

~~If qualified, the gasoline-powered vehicle may use the maximum horsepower of the diesel vehicle replaced, a diesel PM emission factor of zero (0), and a NOx emission factor equal to the gasoline-powered vehicle's HC+NOx certified emission standard in g/bhp-hr multiplied by 0.95.~~

**~~(2) Hours in Fleet Average Option~~** – As an alternative to the formulas for calculating NOx index and diesel PM index in sections 2449.1(a)(1) and

~~2449.2(a)(1), fleet owners may opt to include annual hours of operation for all engines in the fleet on the compliance date in the calculation as follows:~~

~~NOx Index = 1.18 times [SUM of (Max Hp for each engine in fleet on compliance date multiplied by NOx Emission Factor for each engine in fleet on compliance date multiplied by Annual Hours of Operation for each engine in fleet on compliance date since the previous year's compliance date)] divided by [SUM of (Max Hp for each engine in fleet on compliance date multiplied by Annual Hours of Operation for each engine in fleet on compliance date since the previous year's compliance date)]~~

~~Diesel PM Index = 1.18 times [SUM of (Max Hp for each engine in fleet on compliance date multiplied by PM Emission Factor for each engine in fleet on compliance date multiplied by Annual Hours of Operation for each engine in fleet on compliance date since the previous year's compliance date)] divided by [SUM of (Max Hp for each engine in fleet on compliance date multiplied by Annual Hours of Operation for each engine in fleet on compliance date since the previous year's compliance date)]~~

~~Fleets that choose this option must have non-resettable hour meters on each vehicle in the fleet and must include hours in all index calculations for the compliance date.~~

~~**(2)(3) Idling** - The idling limits in section 2449(d)(3) 2449(d)(2) shall be effective and enforceable immediately upon this regulation being certified by the Secretary of State. Fleets must meet the following idling limits.~~

~~**(A) Idling Limit** - No vehicle or engines subject to this regulation may idle for more than 5 consecutive minutes. Idling of a vehicle that is owned by a rental company is the responsibility of the renter or lessee, and the rental agreement should shall so indicate. The idling limit does not apply to:~~

- ~~1. idling when queuing,~~
- ~~2. idling to verify that the vehicle is in safe operating condition,~~
- ~~3. idling for testing, servicing, repairing or diagnostic purposes,~~
- ~~4. idling necessary to accomplish work for which the vehicle was designed (such as operating a crane),~~
- ~~5. idling required to bring the machine system to operating temperature, and~~
- ~~6. idling necessary to ensure safe operation of the vehicle.~~

~~**(B) Written Idling Policy** - As of March 1, 2009, medium and large fleets must also have a written idling policy that is made available to operators of the vehicles and informs them that idling is limited to 5 consecutive minutes or less.~~

~~**(C) Waiver** - A fleet owner may apply to the Executive Officer for a waiver to allow additional idling in excess of 5 consecutive minutes. The Executive~~

~~Officer shall grant such a request upon finding that the fleet owner has provided sufficient justification that such idling is necessary.~~

**(3)(4) Changing Fleet Size –**

- (A) Small fleets that become medium or large fleets must meet the medium or large fleet requirements, respectively, on the reporting date two years subsequent to the year they became a medium or large fleet.
- (B) Large fleets that become medium fleets may meet either the medium or large fleet requirements on the next reporting date. Large fleets that become small fleets may meet either the small or large fleet requirements on the next reporting date.
- (C) Medium fleets that become small fleets may meet either the small or medium fleet requirements on the next reporting date. Medium fleets that become large fleets must meet the large fleet requirements on the reporting date two years subsequent to the year they became a large fleet.

**(4)(5) New Fleets**

**(A) New large and medium fleets –** New large and medium fleets must meet the next large fleet average requirements in sections 2449.1(a)(1) and 2449.2(a)(1) immediately on purchasing vehicles subject to the regulation or bringing such vehicles into the State of California for the first time on or after January 1, 2012 March 1, 2009. New fleets do not have the option of complying with the BACT requirements in sections 2449.1(b) (a)(2) and 2449.2(a)(2) when they enter the State for the first time. For the next applicable compliance date that must be met, the new fleet can choose to meet either the fleet average requirements, or comply with the BACT requirements of section 2449.1(b). For example, if a medium fleet enters the State of California on January 1, 2012, it must meet the January 1, 2014, large fleet average requirements immediately upon entering the State. However, the next applicable compliance date for this fleet is not until the first medium fleet compliance date of January 1, 2017, at which time, the fleet may fulfill the compliance requirements by meeting either the fleet average requirements or the BACT requirements.

**(B) New small fleets –** New small fleets must meet the fleet average requirements in section 2449.1(a)(2) for the next small fleet compliance date immediately upon purchasing vehicles subject to the regulation or bringing such vehicles into the State of California for the first time on or after January 1, 2012. New small fleets do not have the option of complying with the BACT requirements in section 2449.1(b) when they enter the State for the first time. For the next applicable compliance date that must be met, the new fleet can meet either the fleet average requirements, or comply with the BACT requirements.

**(C) All new fleets -** New fleets must comply with the idling requirements in section 2449(d)(3)2449(d)(2), and the adding vehicle requirements in section 2449(d)(6), immediately upon purchasing vehicles subject to the regulation or upon bringing such vehicles into the State. New fleets must report vehicles

subject to the regulation to ARB within 30 days of purchasing or bringing such vehicles into the State, in accordance with the requirements in section 2449(g).

**(5)(6) Fleet Ownership Transferred**

**(A) New fleet owner** - If ownership of an entire fleet or fleet portion, which is complying and reporting separately per section 2449(c)(20), that is transferred to a new fleet owner who did not own a fleet before the transfer of ownership and the fleet or fleet portion was meeting the BACT requirements in lieu of the fleet average requirements before the transfer, is transferred to a new fleet owner who did not own a fleet before the transfer of ownership, the fleet may continue to meet the BACT requirements. That is, transfer of ownership to a new owner who did not own a fleet before does not and is not required the fleet to begin meeting to meet the fleet average requirements in sections 2449.1(a)(1) and 2449.2(a)(1) or adding vehicle requirements in section 2449(d)(6) as new fleets are required to do. If a new fleet owner who did not own a fleet before acquires a fleet or fleet portion that did not previously comply with the regulation, or acquires a fleet portion that is not complying and reporting separately per section 2449(c)(20), it must meet the new fleet requirements in section 2449(d)(4) above.

**(B) Existing fleets** - Existing fleets may acquire other entire fleets or fleet portions which are complying and reporting separately per section 2449(c)(20), without condition if both the existing fleet and the acquired fleets were in compliance with the individual fleet requirements. If existing fleets acquire portions of fleets a fleet or fleet portion or entire fleets that did not previously comply with the regulation, however, or they acquire a fleet portion which is not complying and reporting separately per section 2449(c)(20), they must meet the requirements for adding vehicles in section 2449(d)(7) 2449(d)(6) when adding the entire fleet or fleet portion.

**(C) Existing BACT credits** - If ownership of a fleet or fleet portion, which is complying and reporting separately per section 2449(c)(20), is transferred to a new fleet owner and the transferred fleet or fleet portion had BACT credits, the new fleet owner may maintain the BACT credits of the acquired fleet if the acquired fleet or fleet portion continues to comply and report separately. The new fleet owner may keep the acquired fleet separate from the rest of the vehicles owned for the purposes of maintaining credits even if the vehicles are under common ownership or control. If the new fleet owner combines the acquired fleet or fleet portion for compliance and reporting purposes with the rest of his vehicles, the acquired fleet or fleet portion shall maintain only the credits accumulated from retrofits and repowers, and all other BACT credits shall expire immediately.

**(6)(7) Adding Vehicles** - With the exception noted below for fleets owned by lessors of vehicles, the requirements in (A) through (C) below apply to all fleets. Fleets owned by lessors are not subject to (A) through (C) for, except they do not apply to vehicles owned by a the lessor and returned to the lessor fleet at

the end of a lease, ~~during which~~ if the vehicles were included in the fleet of the lessee for the compliance year in question. Vehicles returned to a lessor fleet must, however, be included in the lessor fleet's fleet average demonstration on subsequent compliance dates. For the purposes of this requirement, a vehicle may be assumed to meet the engine emission standard tier in effect for the model year of the engine.

**(A) ~~Beginning March 1, 2009~~ Ban on adding Tier 0s** – Effective upon the United States Environmental Protection Agency (U.S. EPA) issuing authorization for this regulation, ~~Beginning March 1, 2009~~ a fleet may not add a vehicle with a Tier 0 engine to its fleet. The engine tier must be Tier 1 or higher.

**(B) Ban on adding Tier 1s** – Beginning January 1, 2012, for large and medium fleets, a fleet may add a vehicle with a Tier 1 engine if and only if the vehicle has an equipment identification number (EIN) that ARB assigned to the vehicle prior to January 1, 2012, and both the fleet selling and the fleet purchasing the vehicle with the Tier 1 engine must have reported to ARB by January 1, 2012, or have entered the State of California for the first time after January 1, 2012. Beginning on January 1, 2013, for large and medium fleets, and January 1, 2016, for small fleets, a fleet may not add any vehicle with a Tier 1 engine. The engine tier must be Tier 2 or higher.

**(C) Ban on adding Tier 2s** – Beginning January 1, 2018, for large and medium fleets, and January 1, 2023, for small fleets, a fleet may not add a vehicle with a Tier 2 engine to its fleet. The engine tier must be Tier 3 or higher.

**(B) ~~Between the First and Final Target Dates~~** – The following requirements apply between March 1, 2010 and March 1, 2020 for large fleets, between March 1, 2013 and March 1, 2020 for medium fleets, and between March 1, 2015 and March 1, 2025 for small fleets.

**1. ~~Fleets Meeting the Target Rates~~** – If a fleet met the fleet average target rates in sections 2449.1(a)(1) and 2449.2(a)(2) on the previous compliance date, when it adds a vehicle to its fleet, the fleet must demonstrate that the fleet still meets the fleet average target rates within three months of adding the vehicle. That is, fleets may not add vehicles that cause them to exceed the most recent fleet average target rates. The added vehicle also must be included in the fleet average demonstration required in sections 2449.1(a) and 2449.2(a) on the next compliance date.

**2. ~~Fleets Not Meeting the Fleet Average Targets~~** – If a fleet did not meet the fleet average requirements in sections 2449.1(a)(1) and 2449.2(a)(1) on the previous compliance date, the fleet may not add a vehicle to its fleet that would further increase its emissions above the fleet average target rate, as described below.

**a. ~~Large and Medium Fleets~~** – A large or medium fleet that met the BACT requirements in sections 2449.1(a)(2) and 2449.2(a)(2) instead of the fleet average requirements in sections 2449.1(a)(1) and 2449.2(a)(1) on the most recent compliance date may not add a vehicle to its fleet unless all of the following conditions are met:

- i. ~~The engine is Tier 2 or higher. (For the purposes of this requirement, a vehicle may be assumed to meet the new engine emission standard tier in effect for the model year unless the engine is a flexibility engine certified January 1, 2007 or later to the implementation flexibility standards at title 13 CCR, section 2423(d), in which case the emission standard tier to which the engine is certified should be used.)~~
- ii. ~~The vehicle engine's NOx Emission Factor (after being adjusted for any VDECS) is less than or equal to the NOx Target in Table 1 for engines in the same horsepower group for the most recent compliance date.~~

~~**b. Small Fleets** – A small fleet that met the BACT requirements in section 2449.2(a)(2) instead of the fleet average requirements in section 2449.2(a)(1) on the most recent compliance date may not add a vehicle to its fleet unless the following condition is met: The vehicle engine is Tier 2 or higher. (For the purposes of this requirement, a vehicle may be assumed to meet the new engine emission standard tier in effect for the model year unless the engine is a flexibility engine certified January 1, 2007 or later to the implementation flexibility standards at title 13 CCR, section 2423(d), in which case the emission standard tier to which the engine is certified should be used).~~

~~**(C) After the Final Target Date** – Commencing respectively on March 1, 2020 for large and medium fleets, and March 1, 2025 for small fleets, no fleet owner may add a vehicle to his fleet, unless the vehicle is equipped with an engine meeting the Tier 3, Tier 4 interim, or Tier 4 final emission standards.~~

~~**(7)(8) VDECS Installation** – Before installing a VDECS on a vehicle, the fleet owner must ensure that:~~

- ~~(A) The VDECS is verified for use with the engine and vehicle, as described in the Executive Order for the VDECS.~~
- ~~(B) Use of the vehicle is consistent with the conditions of the Executive Order for the VDECS.~~
- ~~(C) The diesel emission control strategy is installed in a verified configuration.~~
- ~~(D) The engine to be retrofit on which the VDECS is to be installed is tuned up so that it meets engine manufacturer's specifications prior to VDECS installation.~~
- ~~(E) The VDECS label will be visible after installation.~~

~~**(8)(9) VDECS Maintenance and Removal** – If a fleet owner installs a VDECS to meet the requirements in section 2449.1(a) or 2449.2(a), the VDECS must be kept installed until the VDECS fails or is damaged unless the requirements below are met. Requirements for VDECS failure or damage are in section 2449(e)(1). The owner of a vehicle retrofit with a VDECS must ensure all maintenance on the VDECS and engine is performed as required by the respective manufacturers.~~

~~**(A) Removal for safety or visibility purposes** – If a fleet removes a VDECS for safety or visibility purposes, and that VDECS has not failed and is not~~



damaged, the fleet may keep the BACT credit earned under section 2449.1(b) for the installation of the removed VDECS. If the fleet could not meet an applicable fleet average target for the most recent compliance date without the removed VDECS, the fleet owner must bring the fleet back into compliance within 90 days of the removal of the VDECS.

**(B) Removal for other purposes** – If a fleet removes a VDECS for reasons other than safety or visibility purposes, and that VDECS has not failed and is not damaged, the fleet must forfeit any BACT credit earned under section 2449.1(b) from the installation of the removed VDECS. If the fleet could not meet an applicable compliance requirements under section 2449.1 for the most recent compliance date without the removed VDECS and the forfeited BACT credit, the fleet must bring the fleet back into compliance within 90 days of the removal of the VDECS.

**(9)(10) Compliance After the Final Target Date** –

- (A) Commencing respectively on January 1, 2023 March 1, 2020, for large and medium fleets, and on January 1, 2028, for small fleets, if a large or medium fleet does not meet the applicable NO<sub>x</sub> fleet average target rate for the final target date in section 2449.1(a)(1), the fleet must continue to meet the BACT turnover requirements in section 2449.1(b)(a)(2)(A) and report annually each year until it does so. BACT carryover credit earned in previous years cannot be used to meet compliance after the final target date. Vehicles exempt from BACT under sections 2449.1(b)(2) and (3) are exempt from the requirements of this paragraph.
- (B) Except as provided below, commencing respectively on March 1, 2021 for large and medium fleets, and March 1, 2026 for small fleets, all vehicles in each fleet must be equipped with the highest level VDECS. The vehicles must be retrofit at the annual retrofit rate required in section 2449.2(a)(2)(A)1. for BACT PM retrofits, and the fleet must report annually until all vehicles have been retrofitted. In meeting the requirements of this paragraph, the fleet owner may not use any previously accrued carryover PM retrofit credits. The following engines and vehicles are exempt from the requirements of this paragraph:
1. Low use vehicles,
  2. Engines for which there is no highest level VDECS (i.e., for which there is no Level 2 or 3 VDECS, or for which there is a Level 2 or 3 VDECS which cannot be used without impairing the safe operation of the vehicle as demonstrated per section 2449(e)(8)),
  3. Engines equipped with an original equipment manufacturer diesel particulate filter that came new with the vehicle,
  4. Engines already retrofit with a Level 2 or 3 VDECS that was the highest level VDECS available at time of installation, and
  5. Vehicles in large and medium fleets that have not yet met the NO<sub>x</sub> fleet average target rate for the final target date in section 2449.1(a)(1).

**(e) Special Provisions/Compliance Extensions**

**(1) VDECS Failure** - In the event of a failure or damage of a VDECS, the following conditions apply:

**(A) Failure or Damage During the Warranty Period.** If a VDECS fails or is damaged within its warranty period and it cannot be repaired, the fleet owner must replace it with the same level VDECS or higher for the vehicle within 90 days of the failure.

**(B) Failure or Damage Outside the Warranty Period.**

**1. Before Final Target Date** - If a VDECS fails or is damaged outside of its warranty period before January 1, 2023 ~~March 1, 2024~~ for large and medium fleets, or before January 1, 2028 ~~March 1, 2026~~ for small fleets, and cannot be repaired, and if the fleet could not meet an applicable fleet average target for the most recent compliance date without the failed VDECS, the fleet owner must replace the failed or damaged VDECS within 90 days of its failure, with the highest level VDECS available for the engine at time of failure.

**2. After Final Target Date** - If a VDECS fails or is damaged outside of its warranty period on or after January 1, 2023 ~~March 1, 2024~~ for large and medium fleets, or on or after January 1, 2028 ~~March 1, 2026~~ for small fleets, and cannot be repaired, the fleet owner must replace the failed or damaged VDECS within 90 days of its failure with the highest level VDECS available for the engine at time of failure, regardless of whether the fleet met the applicable fleet average requirement for the most recent compliance date.

**(2) Fuel-based Strategy VDECS -**

**(A)** If a fleet owner determines that the highest level VDECS for a large percentage of his fleet would be a Level 2 fuel verified as a diesel emission control strategy, and implementation of this VDECS would require installation of a dedicated storage tank, then the fleet owner may request prior approval from the Executive Officer to allow use of the level 2 fuel-based strategy across its fleet.

**(B)** Waiver for Discontinuation of Fuel Verified as a Diesel Emission Control Strategy. If a fleet owner has relied upon a fuel verified as a diesel emission control strategy to meet an applicable fleet average requirement and has to discontinue use of the fuel due to circumstances beyond the fleet owner's control, the fleet owner may apply to the Executive Officer no later than 30 days after discontinuing use of the fuel for a compliance waiver of up to two years to provide it time to return to compliance with the applicable fleet average requirement. The Executive Officer then has 30 days to act upon the request. Fleets that did not meet the applicable fleet average requirement in the most recent compliance year may not apply for this waiver.

**(3) Exemption for Vehicles Used for Emergency Operations** - Vehicles used solely for emergency operations are exempt from the performance requirements

in sections 2449(d), 2449.1(a), ~~2449.2(a)~~ and ~~2449.3(d)~~2449.2 but still must be labeled and reported in accordance with sections 2449(f) and (g). Vehicles used solely for emergency operations need not be included when calculating fleet average indices or target rates, when determining fleet size, or when calculating the required horsepower for the BACT ~~turnover and retrofit~~ requirements in sections 2449.1(b) ~~(a)(2)~~ and ~~2449.2(a)(2)~~.

Owners of vehicles brought into California for emergency operations that last longer than three months must report such entry to ARB and request an equipment identification number within three months of entering the ~~s~~State. Vehicles used solely for emergency operations and that stay in California for less than three months do not have to be labeled. For vehicles used both for emergency operations and for other purposes, hours of operation accrued when the vehicle is used for emergency operations do not need to be included when determining whether the vehicle meets the permanent or year-by-year low-use vehicle definition.

**(4) Special Provisions for Snow Removal Vehicles** - Dedicated snow removal vehicles are exempt from the performance requirements in sections 2449(d), 2449.1(a), ~~2449.2(a)~~ and ~~2449.3(d)~~2449.2 but still must be labeled and reported in accordance with sections 2449(f) and (g). Dedicated snow removal vehicles need not be included when calculating fleet average indices or target rates, when determining fleet size, or when calculating the required horsepower for the BACT ~~turnover and retrofit~~ requirements in sections 2449.1(b) ~~(a)(2)~~ and ~~2449.2(a)(2)~~. Publicly owned vehicles used exclusively to support snow removal operations (~~such as a loader without a special snow removal attachment~~), but which do not meet the dedicated snow removal vehicle definition (such as a loader without a special snow removal attachment), are exempt from the performance requirements in sections 2449(d), 2449.1, ~~(a)~~2449.2(a) and ~~2449.3(d)~~2449.2(d) but still must be labeled and reported in accordance with sections 2449(f) and (g).

**(5) Use of Experimental Diesel Emission Control Strategies** - If a fleet owner wishes to use an experimental, or non-verified, diesel emission control strategy, the owner must first obtain approval from the Executive Officer for a compliance extension. To obtain approval, the owner must demonstrate either that (A) a VDECS is not available or not feasible or not safe for their vehicle or application, or (B) that use of the non-verified strategy is needed to generate data to support verification of the strategy. The owner or operator shall keep documentation of this use in records as specified by the Executive Officer. The application must include emissions data and detailed control technology description demonstrating the experimental control achieves at least a Level 2 diesel PM emission reduction. If the application demonstrates that the strategy achieves at least 50 percent reductions in diesel PM, it may be treated like a Level 2 VDECS. If the application demonstrates that the strategy achieves at least 85 percent reductions in diesel PM, it may be treated like a Level 3 VDECS. If the

application demonstrates that the strategy achieves a NOx reduction over 15%, the NOx reduction may be counted.

Upon approval by the Executive Officer, each vehicle engine ~~retrofit~~ with the experimental strategy will be allowed to operate for a specified time period necessary to make a determination that the experimental strategy can achieve the projected emissions reductions. The vehicle equipped with the experimental strategy will be considered to be in compliance during the specified time period. A fleet owner who participates in an experimental diesel emission control program approved by the Executive Officer may retain carryover ~~retrofit PMBACT~~ credits or ~~carryover turnover credits~~ actually accumulated during the experiment, regardless of whether the experiment achieved the projected emissions reductions or whether the strategy is eventually verified. If a strategy installed in an experimental diesel emission control program approved by the Executive Officer fails to be verified or is removed, it will no longer count in the fleet's fleet average calculations. The fleet owner must bring the fleet into compliance prior to the expiration of the experimental diesel emission control strategy extension.

**(6) Compliance Extension for Equipment Manufacturer or Installer Delays -** A fleet owner who has purchased new equipment (including VDECS) or vehicles in order to comply with this regulation, will be excused from immediate compliance if the new equipment or vehicles have not been received due to manufacturing or installer delays as long as all the conditions below are met:

- (A) The equipment or vehicle was purchased, or the fleet owner and seller had entered into contractual agreement for the purchase, at least ~~two~~<sup>four</sup> months prior to the required compliance date, or – for a VDECS purchased to replace a failed or damaged VDECS – the fleet owner and seller had entered into contractual agreement for the purchase within 60 days of the VDECS failure.
- (B) Proof of purchase, such as a purchase order or signed contract for the sale, including engine specifications for each applicable piece of equipment, must be maintained by the fleet owner and provided to an agent or employee of ARB upon request.
- (C) The new equipment or vehicles are immediately placed into operation upon receipt.
- (D) Documentation from the manufacturer or the installer that there is a delay, such that the equipment or vehicle will be received or installed after the compliance date.

**(7) Exemption for Permanent and Year-by-year Low-Use Vehicles –**

Permanently designated and year-by-year Low-use vehicles are exempt from the performance requirements in sections ~~2449(d)(4)~~2449(d)(3) through ~~2449(d)(6)~~2449(d)(5) and ~~2449(d)(8)~~2449(d)(7) through ~~2449(d)(10)~~2449(d)(9), ~~2449.1(a)~~, ~~2449.2(a)~~ and ~~2449.3(d)~~2449.2(d), but still must meet the idling limits in section ~~2449(d)(3)~~2449(d)(2) and ~~adding vehicles requirements in section 2449(d)(7)~~ and be labeled and reported in accordance with sections 2449(f) and (g). Permanent and year-by-year Low-use vehicles need not be included when

calculating fleet average indices or target rates, when determining fleet size, or when calculating the required horsepower for the BACT turnover and retrofit requirements in sections 2449.1(b), (a)(2) and 2449.2(a)(2).

Vehicles that formerly met the permanent low-use vehicle definition, but whose use increases to 400 200 hours per year or greater must meet the adding vehicles requirements in section 2449(d)(7)2449(d)(6) and ~~meet the BACT requirements or~~ be included in the fleet average calculation by the next compliance date. For example, a formerly designated permanent low-use engine that exceeds 400200 hours per year between January March 1, 20132015 and December 31, 2015 February 28, 2014 must be included in the fleet average indices and target rates reported in 20142016, and must also meet the adding vehicle requirements for that year. Vehicles that formerly met the year-by-year low-use vehicle definition, but whose use increases to 200 hours per year or greater do not have to meet the adding vehicles requirements in section 2449(d)(6), but must be included in the fleet average calculations by the next compliance date.

- (8) VDECS That Impairs Safe Operation of Vehicle** - A fleet owner may request that the Executive Officer find that a VDECS ~~should~~shall not be considered the highest level VDECS available because (A) it cannot be safely installed or operated in a particular vehicle application, or (B) its use would make compliance with federal or state requirements for safety or health, or an ongoing local air district permit condition, such as for use of a diesel oxidation catalyst, technologically infeasible. If a VDECS manufacturer states that there is no safe or appropriate method of mounting its VDECS on the requesting party's vehicle, then the VDECS will not be considered safe. The Executive Officer shall accept the official findings of the responsible federal or state agency (i.e., the federal or state agency that promulgates safety requirements) that compliance with the requirements of this regulation would make compliance with the federal and state safety or health requirements technologically infeasible. In the absence of such a declaration by the VDECS manufacturer or official findings of a responsible federal or state agency, the requesting party shall provide other documentation to support its claims. Documentation must include published reports and other findings of federal, state or local government agencies, independent testing laboratories, engine or equipment manufacturers, or other equally reliable sources. The request will only be approved if the requesting party has made a thorough effort to find a safe method for installing and operating the VDECS, including considering the use of mirrors, various locations for VDECS mounting, and use of an actively regenerated VDECS. The Executive Officer shall review the documentation submitted and any other reliable information that he or she wishes to consider and shall make his or her determination based upon the totality of the evidence. Upon finding that a VDECS cannot be installed without violating the safety standards prescribed under federal or state requirements for safety or health, the Executive Officer shall issue a determination that there is no highest level VDECS available. The Executive Officer shall inform the requesting

party, in writing, of his or her determination, within 60 days of receipt of the request. Parties may appeal the Executive Officer's determination as described in (A) and (B) below. During the appeal process described in (A) and (B) below, the requesting party may request the administrative law judge to stay compliance until a final decision is issued. If the stay is granted and the Executive Officer denies the requesting party's request, the requesting party has six months from the date of the Executive Officer's final written decision to bring his or her fleet back into compliance.

**(A) Appeals – Hearing Procedures -**

1. Any party whose request has been denied may request a hearing for the Executive Officer to reconsider the action taken by sending a request in writing to the Executive Officer. A request for hearing shall include, at a minimum, the following:
  - a. Name of the requesting party;
  - b. Copy of the Executive Officer's written notification of denial;
  - c. A concise statement of the issues to be raised, with supporting facts, setting forth the basis for challenging the denial (conclusory allegations will not suffice);
  - d. A brief summary of evidence in support of the statement of facts required in c. above; and
  - e. The signature of an authorized person requesting the hearing.
2. A request for a hearing shall be filed within 30 days from the date of issuance of the notice of the denial.
3. A hearing requested pursuant to this section shall be heard by a qualified and impartial hearing officer appointed by the Executive Officer. The hearing officer may be an employee of the ARB, but may not be any employee who was involved with the denial at issue. In a request for reconsideration, the hearing officer, after reviewing the request for hearing and supporting documentation provided under paragraph 1. above, shall grant the request for a hearing if he or she finds that the request raises a genuine and substantial question of law or fact.
4. If a hearing is granted, the hearing officer shall schedule and hold, as soon as practicable, a hearing at a time and place determined by the hearing officer.
5. Upon appointment, the hearing officer shall establish a hearing file. The file shall consist of the following:
  - a. The determination issued by the Executive Officer which is the subject of the request for hearing;
  - b. The request for hearing and the supporting documents that are submitted with it;
  - c. All documents relating to and relied upon by the Executive Officer in making the initial determination to deny the requesting party's original claim; and
  - d. Correspondence and other documents material to the hearing.

6. The hearing file shall be available for inspection by the applicant at the office of the hearing officer.
7. An applicant may appear in person or be represented by counsel or by any other duly-authorized representative.
8. The ARB may be represented by staff or counsel familiar with the regulation and may present rebuttal evidence.
9. Technical rules of evidence shall not apply to the hearing, except that relevant evidence may be admitted and given probative effect only if it is the kind of evidence upon which reasonable persons are accustomed to relying in the conduct of serious affairs. No action shall be overturned based solely on hearsay evidence, unless the hearsay evidence would be admissible in a court of law under a legally recognized exception to the hearsay rule.
10. Declarations may be used upon stipulation by the parties.
11. The hearing shall be recorded either electronically or by a certified shorthand reporter.
12. The hearing officer shall consider the totality of the circumstances of the denial, including but not limited to, credibility of witnesses, authenticity and reliability of documents, and qualifications of experts. The hearing officer may also consider relevant past conduct of the applicant including any prior incidents involving other ARB programs.
13. The hearing officer's written decision shall set forth findings of fact and conclusions of law as necessary.
14. Within 30 days of the conclusion of a hearing, the hearing officer shall submit a written proposed decision, including proposed finding as well as a copy of any material submitted by the hearing participants as part of that hearing and relied on by the hearing officer, to the Executive Officer. The hearing officer may recommend to the Executive Officer any of the following:
  - a. Uphold the denial as issued;
  - b. Modify the denial; or
  - c. Overturn the denial in its entirety.
15. The Executive Officer shall render a final written decision within 60 working days of the last day of hearing. The Executive Officer may do any of the following:
  - a. Adopt the hearing officer's proposed decision;
  - b. Modify the hearing officer's proposed decision; or
  - c. Render a decision without regard to the hearing officer's proposed decision.

**(B) Appeals – Hearing Conducted by Written Submission.** In lieu of the hearing procedure set forth in (A) above, an applicant may request that the hearing be conducted solely by written submission. In such case the requestor must submit a written explanation of the basis for the appeal and provide supporting documents within 20 days of making the request. Subsequent to such a submission the following shall transpire:

1. ARB staff shall submit a written response to the requestor's submission and documents in support of the Executive Officer's action no later than 10 days after receipt of requestor's submission;
2. The applicant may submit one rebuttal statement which may include supporting information, as attachment(s), but limited to the issues previously raised;
3. If the applicant submits a rebuttal, ARB staff may submit one rebuttal statement which may include supporting information, as attachment(s), but limited to the issues previously raised; and
4. The hearing officer shall be designated in the same manner as set forth in section 2449(e)(8)(A)3. above. The hearing officer shall receive all statements and documents and submit a proposed written decision and such other documents as described in section 2449(e)(8)(A)13. above to the Executive Officer no later than 30 working days after the final deadline for submission of papers. The Executive Officer's final decision shall be mailed to the applicant no later than 60 days after the final deadline for submission of papers.
5. The Executive Officer shall render a final written decision within 60 working days of the last day of hearing. The Executive Officer may do any of the following:
  - a. Aadopt the hearing officer's proposed decision;
  - b. Mmodify the hearing officer's proposed decision; or
  - c. Rrender a decision without regard to the hearing officer's proposed decision.

**(9) Compliance Flexibility for Delays in Availability of Tier 3 or Tier 4 Vehicles-**

If the Executive Officer finds that there is a delay in availability of vehicles with engines meeting the Tier 3 or Tier 4 interim or final emission standards so that vehicles with Tier 3 or Tier 4 interim or final engines to meet a fleet's needs are not available or not available in sufficient numbers or in a sufficient range of makes, models, and sizes, then the Executive Officer may grant an extension to the fleet from the requirements in sections 2449.1(a)(1), 2449.2(a)(1), 2449.1(a)(2) and 2449.2(a)(2). If such a delay affects a group of fleets, the Executive Officer may issue an extension to all fleets with similar characteristics. Any such delay must be documented based on verifiable information from the fleet regarding its vehicle needs and/or verifiable information from the equipment manufacturer, engine manufacturer, distributor, and/or dealer regarding the unavailability of appropriate vehicles with Tier 3 or Tier 4 interim or final engines.

**(10) Exemption for Vehicles Awaiting Sale -** Vehicles in the possession of dealers, financing companies, or other entities who do not intend to operate the vehicle nor offer the vehicle for hire, that are operated only to demonstrate functionality to potential buyers or to move short distances while awaiting sale or for maintenance purposes are exempt from all requirements in sections 2449, 2449.1, and 2449.2, and 2449.3.



- (11) Exemption for Vehicle Used Over Half the Time for Agriculture** - A vehicle that is used by its owner for agricultural operations for over half of its annual operating hours but that is not used exclusively for agricultural operations is exempt from the performance requirements in section 2449(d), 2449.1(a), and ~~2449.2(a), and 2449.2~~, but still must be labeled and reported in accordance with sections 2449(f) and (g). Vehicles used exclusively for agricultural operations are completely exempt from the performance, labeling, and reporting requirements. A vehicle that is rented or leased for use by others is exempt only if it is exclusively used for agricultural operations.
- (12) Exemption for Vehicles Used Solely on San Nicolas or San Clemente Islands** - Vehicles used solely on San Nicolas or San Clemente Islands are exempt from all requirements in section 2449, 2449.1, and 2449.2. If the land use plans for the islands are changed to allow use by the general public of the islands, this exemption shall no longer be applicable.
- (13) Exemption for Job Corps Vehicles** – Vehicles used by the Job Corps nonprofit apprenticeship training program are exempt from the performance requirements in sections 2449(d), 2449.1(a), 2449.2(a) and ~~2449.3(d)~~2449.2 but still must be labeled and reported in accordance with sections 2449(f) and (g).
- (14) ~~Two-Engine Vehicles~~ Cranes** – ~~Both engines in a two-engine crane are subject to this regulation. For purposes of the rounding provisions in section 2449.1(b)(5)(a)(2)(a)7., if a two-engine vehicle is subject to this regulation, under section 2449(b), neither engine in the two-engine vehicle crane is required to be turned over until the horsepower required to be turned over under section 2449.1(b)(a)(2)(A) is at least half the sum of the maximum power of the primary and auxiliary secondary engine in the two-engine vehicle crane.~~
- (15) On-road Registered Vehicles with Off-road Engines** – If a workover rig or other on-road registered vehicle subject to this regulation with an off-road engine is repowered and will be registered and driven on-road, it must be repowered with an on-road certified engine of the same model year or newer as the engine being replaced.
- (16) ~~Two-Engine Water Well Drilling Rigs~~** – ~~Both engines in a two-engine water well drilling rig are subject to this regulation. For the purposes of the rounding provisions in section 2449.1(a)(2)(a)7, neither engine in the two-engine water well drilling rig is required to be turned over until the horsepower required to be turned over under section 2449.1(a)(2)(A) is at least half the sum of the maximum power of the primary and secondary engine in the two-engine water well drilling rig.~~
- (16) Fleets with 500 hp or less** – Fleets with 500 hp or less total max hp may meet the optional compliance schedule listed below in Table 1 instead of the small fleet requirements in 2449.1(a)(2) and 2449.1(b). This percent of engine hp must

be met or exceeded, and the rounding provisions in section 2449.1(b)(5) do not apply. For compliance with this section, all vehicles in the fleet must be included; no vehicles qualify for the exemptions listed in section 2449(e).

**Table 1 – Optional Compliance Schedule for Fleets with 500 HP or Less**

<b>Compliance Date: January 1 of Year</b>	<b>Percent of Fleet (by hp) Which Must Have a Tier 2 or Higher Engine</b>
<b>2019</b>	<b>25</b>
<b>2022</b>	<b>50</b>
<b>2026</b>	<b>75</b>
<b>2029</b>	<b>100</b>

Fleets with 500 hp or less may choose to comply with either the above optional compliance schedule or the small fleet requirements. If the fleet alternates from the BACT schedule to the optional compliance path above, the fleet must comply with the most recent past requirements of the optional compliance schedule. For example, a fleet switching to the optional compliance schedule above in 2025 must meet the 2022 requirements of the optional compliance schedule immediately upon switching to the optional compliance schedule. A fleet switching to the fleet average or BACT requirements from the optional compliance schedule must begin meeting the fleet average or BACT requirements for small fleets on the next compliance date for small fleets. If a fleet grows larger than 500 hp, that fleet must begin meeting the fleet average or BACT requirements for small fleets on the next compliance date for the applicable fleet size category.

**(17) Public funds for purchases, repowers, or retrofits** – Notwithstanding sections 2449, 2449.1 and 2449.2, the purchase of a replacement vehicle, repower, or a retrofit with public funds shall be counted toward the fleet average or BACT requirements in accordance with funding program guidelines applicable to the particular source of public funds used for the purchase. This may in some cases limit credit to single rather than double credit.

**(f) Labeling—**

All vehicles with engines subject to the regulation must be labeled with an ARB-issued equipment identification number (EIN). Electric and alternative fuel vehicles, stationary or portable systems, and gasoline-powered vehicles used to replace diesel vehicles under section 2449(d)(1)(C) must also be labeled with an ARB-issued EIN. ARB will issue unique EIN to the fleet owner for each vehicle subject to the regulation in response to the initial reporting described in section 2449(g)(1) and, for vehicles added in the 30 days before the annual reporting date, the annual reporting described in section 2449 (g)(2). Vehicles with two engines that provide motive power will receive two EINs. Vehicles with two engines where one provides motive power and the other is an auxiliary engine will receive one EIN. All owners of vehicles subject to the regulation must comply with the following labeling requirements.

- (1) Application for EIN for added vehicle** – Notwithstanding the requirements for vehicles used for emergency operations in section 2449(e)(3), if a fleet owner adds a vehicle to his California fleet or brings a vehicle into California from outside the sState, the fleet owner has 30 days from the date of purchase or the date the vehicle enters California to apply to ARB for an EIN or, if the vehicle already has an EIN, to inform ARB of the purchase using forms approved by the Executive Officer for submittal of required reporting information. If the reporting date under section 2449(g)(2) occurs before 30 days after purchase, the annual reporting may serve as the application for an EIN.

Applications for an equipment identification number ~~should~~shall be submitted electronically per the guidelines approved by the Executive Officer for electronic data reporting, or mailed or delivered to ARB at the address listed immediately below:

California Air Resources Board  
Mobile Source Control Division (In-Use Off-road Diesel)  
P.O. Box 2815  
Sacramento, CA 95812.

- (2) Affixing Equipment Identification Number** – Within 30 days of receipt of the ARB-issued EIN, fleet owners shall permanently affix or paint the EIN(s) on the vehicle in clear view according to the following specification:
- (A) The EIN shall be white on a red background, unless the vehicle is part of a captive attainment area fleet, in which case the EIN shall be white on a green background.
  - (B) The EIN shall be located in clear view on ~~the right (starboard)~~both sides of the outside of the vehicle approximately 5 feet above the ground, or, if the vehicle is not 5 feet tall, lower on the vehicle.
  - (C) Each character shall be at least 3 inches (7.6 centimeters) in height and 1.5 inches (3.8 centimeters) in width.
  - (D) The EIN shall be maintained in a manner that retains its legibility for the entire life of the vehicle.
  - (E) Vehicles reported to ARB prior to January 1, 2013, may apply a label to the right (starboard) side of the vehicle only, except that the vehicle must have an identical EIN label placed on the left (port) side of the vehicle before January 1, 2013.
  - (F) Vehicles that are part of a captive attainment area fleet and reported to ARB prior to January 1, 2013, may be labeled with an EIN that is in white on a red background, except that the vehicle must have the EIN label replaced by one displaying white on a green background, on each side of the vehicle, before January 1, 2013.

**(g) Reporting—**

Reporting is required for each and every fleet. Large and medium fleets may report separately for different divisions or subsidiaries of a given company or agency. Fleet owners may submit reporting information using forms (paper or electronic) approved by the Executive Officer.

**(1) Initial reporting** – All fleet owners must submit the information in section 2449(g)(1)(A) through (HG) to ARB by their initial reporting date. In the initial reporting, fleet owners must report information regarding each vehicle subject to this regulation that was in their fleet on March 1, 2009. Systems or non-diesel fueled vehicles that are used in place of a vehicle that would be subject to this regulation must also be reported. The initial reporting date for large fleets is April 1, 2009. The initial reporting date for medium fleets is June 1, 2009. The initial reporting date for small fleets is August 1, 2009. Notwithstanding the aforementioned reporting dates, the initial reporting date for two-engine ~~vehicles~~~~water well drilling rigs~~ is March 1, 2012~~April 1, 2014~~. Reports must include the following information:

**(A) Fleet Owner –**

1. Fleet owner's name;
2. Corporate parent name (if applicable);
3. Corporate parent taxpayer identification number (if applicable);
4. Company taxpayer identification number;
5. Address;
6. Responsible person name;
7. Responsible person title;
8. Contact name;
9. Contact phone number;
10. Contact email address (if available);
11. Whether the fleet owner is a low population county local municipality fleet;
12. Whether the fleet owner has an approval from the Executive Officer to be treated as if in a low-population county;
13. Whether the fleet owner is a non-profit training center;
14. Whether the fleet has an idling policy documented and available to employees;
15. Whether the fleet is using a fuel-based strategy as an emissions control strategy;
16. Whether the fleet is a cCaptive aAttainment aArea fFleet.

**(B) Vehicle List** – A list of each vehicle subject to this regulation along with the following information for each vehicle:

1. Vehicle type;
2. Vehicle manufacturer;
3. Vehicle model;
4. Vehicle model year;
5. Vehicle serial number (i.e., for workover rigs and on-road two-engine ~~cranes~~~~vehicles~~, and ~~two-engine water well drilling rigs~~, vehicle identification number);
6. Whether the vehicle is a permanent or year-by-year low-use vehicle;

7. If the vehicle is a permanent or year-by-year low-use vehicle, whether the vehicle was operated outside of California during the previous compliance year;
8. Whether the vehicle is a specialty vehicle;
9. Whether the vehicle is a vehicle used solely for emergency operations;
10. Whether the vehicle is a dedicated snow removal vehicle;
11. Whether the vehicle is used for agricultural operations for over half of its annual operating hours;
12. Whether the vehicle is an electric vehicle that replaced a diesel vehicle;
13. Whether the vehicle has had a VDECS installed, or been retrofitted, repowered, or replaced with Surplus Off-road Opt-in for NOx program funding and, if so, the start and end dates of the contract period;
14. Whether the vehicle has had a VDECS installed, or been retrofitted, repowered, or replaced with Carl Moyer program funding;
15. Whether the vehicle has had a VDECS installed ~~been retrofitted~~ through a demonstration program, and - if so - which program;
16. EIN if it has already been assigned;
17. License plate number, if vehicle has a license plate;
18. Whether the vehicle has a VDECS safety exemption per section 2449(e)(8);
19. Whether the vehicle is exempt from the BACT requirements per section 2449.1(b)(2)(E) for the early installation of a highest level PM VDECS.

**(C) Engines** - For each engine that powers a vehicle listed per section 2449(g)(1)(B), or is an auxiliary engine in a two-engine vehicle that is subject to this regulation per section 2449(b), report the following information.

1. Engine manufacturer;
2. Engine model;
3. Engine family (if any);
4. Engine serial number;
5. Engine model year;
6. Engine ~~max hp~~maximum power;
7. Engine displacement;
8. Whether the engine is a repower and – if so – date repowered;
9. ~~Whether~~ If the engine is a ~~Post-2007~~ flexibility engine;
10. ~~Whether the engine is,~~ an engine certified to on-road standards, or an engine certified by ARB or U.S. Environmental Protection Agency to a lower emission standard than shown in Appendix A, the emission standard to which the engine is certified and the certification Executive Order or certificate number;
11. ~~Whether the engine has been rebuilt to a more stringent emissions configuration.~~

**(D) Verified Diesel Emission Control Strategies** - For each VDECS that is installed on an engine listed per section 2449(g)(1)(C) report the following information.

1. VDECS ~~m~~Manufacturer;
2. VDECS ~~f~~Family;

3. Verification level;
4. Verified percent NOx reduction (if any);
5. Date installed;
6. VDECS sSerial nNumber.

**(E) Non-Diesel Vehicle Used in Place of a Diesel Vehicle** - For each electric, alternative fueled, or gasoline fueled vehicle, report the information listed in sections 2449(g)(1)(B)1. through 2449(g)(1)(B)5. and sections 2449(g)(1)(C)1. through 2449(g)(1)(C)6. as well as

1. Date purchased;
2. If the vehicle replaced a diesel vehicle in the fleet, the hphorsepower of the diesel vehicle replaced and the date replaced;
3. If not electric, the ~~NOx and PM~~ emission factor;

**(F) Stationary or Portable Systems Used in Place of a Diesel Vehicle** - For stationary or portable systems that are used in place of a diesel vehicle, report the following information:

1. Description of the system;
2. Type and number of vehicles that would otherwise be used;
3. HpHorsepower of the vehicle(s) that would otherwise be used;

**(G) Credit for Early Actions** - Fleet owners claiming credit for early action must report information required under sections 2449(g)(1)(B)1. through 2449(g)(1)(B)5. and sections 2449(g)(1)(C)1. through 2449(g)(1)(C)6. for each vehicle for which credit is claimed. As appropriate, the following information must also be reported:

1. For each vehicle within the fleet that was repowered with a Tier 1 or newer engine prior to March 1, 2009, the date of repower;
2. For each vehicle within the fleet that ~~was retrofit with the~~ had the highest level PM VDECS installed available at the time of retrofit prior to March 1, 2009, the date of installation retrofit and whether Carl Moyer Incentive Program funding was used to pay for the VDECS retrofit;
3. Fleet owners claiming early credit for retirement or replacement of any vehicles ~~per under~~ section 2449.1(b)(14)(a)(2)(A)(2)a.ii., or 2449.1(b)(16)(a)(2)(A)(2)a.v. or 2449.2(a)(2)(A)(2)a.iv. must report information on each and every vehicle within the fleet between March 1, 2006, and March 1, 2010, as required under sections 2449(g)(1)(B)1. through 2449(g)(1)(B)45. and sections 2449(g)(1)(C)1. through 2449(g)(1)(C)6. as well as the date of any purchase and/or retirement between March 1, 2006 and March 1, 2010.
4. ~~Fleet owners claiming credit for reduced activity in the fleet per section 2449.1(a)(2)(A)(2)a.iv. or 2449.2(a)(2)(A)2.a.iii. must report to the Executive Officer the total hours of use for each vehicle in the fleet, excepting vehicles claimed for early retirement credit, for the twelve month period January 1, 2007, to December 31, 2007 as well as the twelve month period March 1, 2009, to February 28, 2010. Fleets that do not have hourly reporting records of each vehicle in the fleet must submit to the Executive Officer copies of information that is verifiable and~~

substantively demonstrates a reduction in fleet activity from July 1, 2007, to March 1, 2010.

**(H) Equipment Purchased, Repowered, Retrofitted, or Otherwise Funded or Partially Funded Using Public Funds** - For owners of equipment or vehicles that were purchased, repowered or retrofitted using public funds and where funding program guidelines include criteria that limit funded projects from receiving regulatory benefit or credit, in addition to the information provided in sections 2449(g)(1)(A) through (D), the fleet owner must provide the following information for each vehicle:

1. Date the public funding contract began;
2. Date the public funding contract ends;
3. Program providing the funding; and
4. Contract terms specifying the limitations for receiving regulatory benefit or credits for the funded equipment.

**(2) Annual Reporting and Compliance Certification-Responsible Official Affirmation of Reporting** – All fleet owners must review and update the information submitted under section 2449(g)(1) annually, and submit the information in section 2449(g)(2)(A) through (C) to ARB by the reporting date of each subsequent reporting year. The ~~large fleet reporting date for all fleets is March 1~~ April 1, the medium fleet reporting date is June 1, and the small fleet reporting date is August 1. Fleet owners must report information regarding each vehicle subject to this regulation as it was on December 31 ~~March 1~~ of the year prior to the reporting year (for example, by March 1, 2018, fleets must report each vehicle as it was at the end of the day on December 31, 2017. Large fleets must report annually each year from ~~2010 to 2021~~ 2012 to 2023. Medium fleets must report annually each year ~~2012 to 2021~~ 2016 to 2023. Small fleets must report annually each year from ~~2014 to 2026~~ 2018 to 2028. Any fleet that fails to meet the fleet average target rate for the final target date in section 2449.1(a)(4) or ~~2449.2(a)(1)~~ must continue to report annually each year until it does so. ~~After the final target date in 2449.2(a)(1), any fleet that is required to apply VDECS under section 2449.2(a)(2) must continue to report each year until the March 1 after all such retrofits are complete.~~ Any fleet that operates permanent designated or year-by-year low-use vehicles must continue to report annually for each permanent or year-by-year low-use vehicle for as long as the fleet owns or operates the vehicle. Fleets may use forms (paper or electronic) approved by the Executive Officer for submittal of the required reporting information.

**(A)-Compliance Certification Responsible Official Affirmation of Reporting** – Each year that annual reporting is required, a fleet shall submit to ARB An affirmation certification signed by a responsible official or a designee thereof that the information reported is accurate and that the fleet is in compliance with the regulation. The ~~certification~~ affirmation must be submitted on a form (paper or electronic) approved by the Executive Officer. If a designee signs the ~~compliance certification~~ affirmation of reporting, a written statement signed by the responsible official designating the designee must be attached to the ~~compliance certification~~ affirmation of reporting and submitted to ARB.

This written statement designating the designee must only be attached the first time a designee signs the affirmation of reporting. If a new designee is appointed at a later time, another written statement signed by the responsible official designating a new designee must be submitted. If the fleet is a Captive Attainment Area Fleet, the certification-affirmation must certify that the fleet's vehicles did not operate outside the counties listed in 2449(c)(6) in the prior year. If the responsible official or designee is the same for several fleets or fleet portions, the responsible official or designee has the option of submitting a single affirmation for these fleets, as long as the single affirmation appropriately identifies each fleet covered by the affirmation.

**(B) Changes Since Last Reporting** - If any information reported per section 2449(g)(1) has changed since either the initial or last annual report filed with ARB, the fleet owner must, in its next annual report identify such changes. Such changes include vehicles removed from the fleet, vehicles added to the fleet through purchase or by bringing into California, vehicles newly designated as permanent or year-by-year low-use or specialty vehicles, repowers, and VDECS installed retrofits, and VDECS removed. If there are no changes, the fleet shall indicate that there have been no changes since the last report.

**(C) Engine Hour Meter Readings** – Engine hour meter readings must be reported for each engine in the following cases.

~~1. If the fleet has chosen the hours in fleet average option, the fleet owner shall report two engine hour meter readings, one from on or before March 4 of the prior year and one from on or after March 1 of the current year, and the dates of reading for every engine in the fleet.~~

1.2. For vehicles that fleet owners intend to designate as year-by-year low-use, report two engine hour meter readings, one from on or before January 1 March 4 of the prior year and one from on or after December 31 March 4 of the current- prior year, and the dates of reading. If using the three-year rolling average definition of year-by-year low-use, report two hour meter readings, one from on or before January 1 March 4 of the first year of the three year period and one from on or after December 31 March 4 of the third year-current year. For vehicles that fleet owners intend to designate as permanent low-use vehicles, report one engine hour meter reading from on or before January 1 of the current year. For each year thereafter, report the engine hour meter reading from on or after December 31 of the prior year. Permanent and year-by-year low-use vehicles used in emergency operations, must report the total hours used in emergency operations. Additionally, for vehicles designated as permanent or year-by-year low-use that operate both inside and outside California, the fleet owner shall submit a log that contains the following information.

- a. Each date the vehicle entered California and the hour meter reading upon entry;
- b. Each date the vehicle exited California and the hour meter reading upon exit.



~~2.3.~~ For vehicles that are used in agricultural operations, the fleet owner shall report two engine hour meter readings, one from on or before January 1 ~~March 1~~ of the prior year and one from on or after December 31 ~~March 1~~ of the prior ~~current~~ year, and the dates of such readings. Also the fleet owner shall report the total number of hours the vehicle has been used in non-agricultural use.

**(3) New Fleet Reporting** – New fleets must submit the information in section 2449(g)(1)(A) through (H) to ARB for vehicles subject to the regulation within 30 days of purchase or bringing such vehicles into the State. Beginning the first January 1 ~~March 1~~ that is more than 30 days after the date of purchase or bringing a vehicle into the State, new fleets must comply with the annual reporting requirements in section 2449(g)(2).

**(4) Selling Vehicles** – Any person selling a vehicle with an engine subject to this regulation in California must notify ARB within 30 days from the date the vehicle was sold. If the reporting date under section 2449(g)(2) occurs within 30 days of the vehicle being sold, the annual reporting may serve as the notification to ARB that the vehicle was sold.

#### **(h) Record keeping –**

Fleet owners must maintain copies of the information reported under section 2449(g), as well as the records described in section 2449(h) below, and provide them to an agent or employee of the ARB within five business days upon request. Records must be kept at a location within the State of California.

**(1) Changes Since Last Reporting Period** - Documentation of any additions, deletions, or changes to the fleet since the last reporting. Documentation may include bills of sale, purchase orders, or other documentation.

**(2) Vehicles Not Yet Labeled** - For newly purchased or acquired vehicles or vehicles recently brought into the ~~s~~State that have not yet been labeled per section 2449(f)(2), records must be kept of the vehicle purchase date or the date the vehicle entered the ~~s~~State.

**(3) Engines Rebuilt to a More Stringent Emissions Configuration** - Records of engines that are rebuilt to a more stringent emissions configuration in accordance with Title 40, CFR, Part 89.130 and Part 1068.120 must be kept as long as the engine remains in operation. For a fleet to claim credit for rebuild to a more stringent emissions configuration of a Tier 1 engine rated at or above 37 kW that is exempt from the requirements in Title 40, CFR, Part 89.130 and title 13, CCR, section 2423(l), the Tier 1 engine must be rebuilt in accordance with the rebuild practices of those sections and the fleet must keep the records that would have been required if the engine were not exempt from those requirements. Records must include the following information:

- (A) The name of the company that performed the rebuild, address, contact name, and contact phone number for that company;
- (B) An invoice, or proof of purchase of the engine rebuild;
- (C) The date(s) the engine upgrade was performed;
- (D) All records required under Title 40, CFR, Part 1068.120 or, for engines exempt from Title 40, CFR, Part 1068.120, the records that would be required if the engine were not exempt;
- (E) All records required under title 13, CCR, section 2423(l) or, for engines exempt from 13, CCR, section 2423(l), the records that would be required if the engine were not exempt.

**(4) VDECS Failure** – Records of any VDECS failure and replacement.

**(5) VDECS Removal** – Records of any VDECS removed from a vehicle, including the date and reason for removal.

**(6)(5) VDECS Serial Numbers** – Records of the serial numbers of the VDECS installed on each vehicle.

**(7)(6) Manufacturer Delay** – For any vehicles or VDECS for which the fleet owner is utilizing the equipment manufacturer delay provision in section 2449(e)(6), proof of purchase, such as a purchase order or signed contract for the sale, including engine specifications for each applicable piece of equipment or vehicle.

**(8)(7) Records Pertaining to Executive Officer Approval** – Records of Executive Officer approval of any of the following:

- (A) A waiver to allow additional idling in excess of 5 consecutive minutes;
- (B) Upon discontinuation of a fuel verified as a dDiesel eEmission cControl sStrategy, approval for up to two years additional time to come back into compliance with the applicable fleet average requirement;
- (C) A finding that a VDECS ~~should~~shall not be considered the highest level VDECS available due to safety concerns;
- (D) Approval to use the max hp~~maximum~~ power of a diesel vehicle that serves the same function as an electric vehicle;
- (E) Approval of an alternative fuel vehicle ~~NO<sub>x</sub>~~ emission standard;
- (F) Approval of a vehicle designation as a specialty vehicle;
- (G) Approval of and experimental diesel ~~PM~~ control strategy;
- (H) Approval to grant an extension to the fleet from the requirements when Tier 3 or Tier 4 (interim or final) vehicles are not available;
- (I) Approval to use a fuel strategy as an emissions control strategy as in section 2449(e)(2);

**(8) Credit for Reduced Activity** – Each fleet owner that claims credit for reduced fleet activity with vehicle specific data per sections 2449.1(a)(2)(A)(2)a.iv. or 2449.2(a)(2)(A)2.a.iii. shall maintain the records setting forth the total hours of use of each vehicle in the fleet for each of the twelve month periods indicated in

~~2449(g)(1)(G)4. A fleet that submits non-vehicle specific data claiming credit for reduced fleet activity, per sections 2449.1(a)(2)(A)(2)a.v. or 2449.2(a)(2)(A)(2)a.iv., must keep a record of all of the information submitted to ARB to support its claim of reduced fleet activity.~~

**~~(9)(9) Credit for Early Retirement or Replacement~~** – Each fleet owner that claims credit for the retirement or replacement of vehicles from March 1, 2006, to March 1, 2010, ~~perunder~~ sections 2449.1(b)(14)(a)(2)(A)2.a.ii. or 2449.1(b)(16)(a)(2)(A)(2)a.v. or 2449.2(a)(2)(A)(2)a.iv shall maintain records substantiating the fleet's claim of previous ownership for those vehicles.

**(10) Record Retention** – Each fleet owner shall maintain the records for each vehicle subject to the regulation and for the overall fleet as long as the owner has a fleet or January 1 March 1, 2030, whichever is earlier. If vehicle ownership is transferred, the seller shall convey the vehicle records including vehicle data ~~perunder~~ section 2449(g)(1)(B), engine data ~~perunder~~ section 2449(g)(1)(C), and VDECS data ~~perunder~~ section 2449(g)(1)(D) to the buyer. If fleet ownership is transferred, the seller shall convey the fleet records including fleet data ~~perunder~~ sections 2449(g)(1)(A) through (G) to the buyer. Any person selling a vehicle with an engine subject to this regulation in California must maintain records of the disclosure of regulation applicability required by sSection 2449(j) for three years after the sale.

**(i) Right of Entry –**

For the purpose of inspecting off-road vehicles and their records to determine compliance with these regulations, an agent or employee of ARB, upon presentation of proper credentials, has the right to enter any facility (with any necessary safety clearances) where off-road vehicles are located or off-road vehicle records are kept.

**(j) Disclosure of Regulation Applicability –**

Any person selling a vehicle with an engine subject to this regulation in California must provide the following disclosure in writing to the buyer on the bill of sale, "When operated in California, any off-road diesel vehicle may be subject to the California Air Resources Board In-Use Off-road Diesel Vehicle Regulation. It therefore could be subject to retrofit or accelerated turnover requirements to reduce emissions of air pollutants. For more information, please visit the California Air Resources Board website at <http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm>."

**(k) Penalties –**

Any person who fails to comply with the performance requirements of this regulation, who fails to submit any information, report, or statement required by this regulation, or who knowingly submits any false statement or representation in any application, report, statement, or other document filed, maintained, or used for the purposes of compliance

with this regulation may be subject to civil or criminal penalties under sections 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.1, 42402.2, 42402.4, 42403, and 43016 of the Health and Safety Code. In assessing penalties, the Executive Officer will consider factors, including but not limited to the willfulness of the violation, the length of time of noncompliance, whether the fleet made an attempt to comply, and the magnitude of noncompliance.

**(l) ARB Certificate of Reported Compliance –**

After the initial reporting required by section 2449(g)(1) and the annual reporting and ~~compliance certification~~ responsible official affirmation of reporting required by section 2449(g)(2) is received by ARB, if the reporting and affirmation indicates the fleet is in compliance with the requirements of the Regulation for In-Use Off-Road Diesel-Fueled Fleets ~~in use off road diesel vehicle regulation~~, ARB will provide the fleet with a Certificate of Reported Compliance with the Regulation for In-Use Off-Road Diesel-Fueled Fleets ~~In-Use Off road Diesel Vehicle Regulation~~.

**(m) Severability –**

If any subsection, paragraph, subparagraph, sentence, clause, phrase, or portion of section 2449, 2449.1, or 2449.2, ~~or 2449.3~~ of this regulation is, for any reason, held invalid, unconstitutional, or unenforceable by any court of competent jurisdiction, such portion shall be deemed as a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of the regulation.

**\*\*Note:** Authority cited: Sections 39002, 39515, 39516, 39600, 39601, 39602, 39650, 39656, 39658, 39659, 39665, 39667, 39674, 39675, 40000, 41511, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.1, 42402.2, 42402.4, 42403, 43000, 43000.5, 43013, 43016, 43018, and 43018.2, Health and Safety Code. Reference: Sections 39002, 39515, 39516, 39600, 39601, 39602, 39650, 39656, 39657, 39658, 39659, 39665, 39667, 39674, 39675, 40000, 41511, 42400, 42400.1, 42400.2, 42402.2, 43000, 43000.5, 43013, 43016, 43018, and 43018.2, Health and Safety Code.

## § 2449.1. NOx Performance Requirements

### (a) Performance Requirements

Each fleet must meet the fleet average requirements in this section ~~beforeby~~ January March 1 of each year or demonstrate that it met the ~~best available control technology~~ (BACT) requirements as described in section 2449.1(b)(a)(2). ~~There are differing requirements for large and medium fleets. Small fleets are not subject to the NOx performance requirements.~~

~~If various portions of a fleet are under the control of different responsible officials because they are part of different subsidiaries, divisions, or other organizational structures of a company or agency, the fleet portions may comply with the performance requirements separately and be reported separately. A fleet may have some fleet portions that meet the definition of captive attainment area fleet and some fleet portions that do not. However, the total maximum power of the vehicles under common ownership or control determines the fleet size. Once a fleet begins to comply and report separately as fleet portions, the fleet portions must continue to comply and report separately, and the fleet portions must meet the adding vehicle requirements in section 2449(d)(7) just as if they were separate fleets.~~

Captive attainment area fleets, and fFleets owned by non-profit training centers or low-population county local municipalities are subject to the small fleet requirements, even if their total max hpmaximum power exceeds 2,500 hphorsepower. Captive attainment area fleets are not subject to the NOx performance requirements. Section 2449(d)(4)2449(d)(3) describes requirements for fleets that change size.

### (a) (1) Fleet Average Requirements

#### ~~(A) Fleet Average Requirements for Large and Medium Fleets~~

##### ~~1. NOx Fleet Average~~

~~For each compliance date, a large or medium fleet that is not a captive attainment area fleet must demonstrate that its NOx fleet average index was less than or equal to the calculated NOx fleet average Ttarget Rrate.~~

~~The equation for calculating NOx fleet average Ttarget Rrate is below:~~

~~NOx Fleet average Ttarget Rrate = [SUM of (max hpMax Hp for each engine in fleet multiplied by the targetTarget for each engine in fleet) for all engines in fleet] divided by [SUM of (max hpMax Hp) for all engines in fleet]~~

~~where the Ttarget is the NOx target in g/bhp-hr is shown in from Tables 3 and 4 below. To find the Ttarget for each engine, read the value for the appropriate row based on the compliance year and the appropriate column based on the engine's max hpmaximum power from Table 31 for medium and large fleets, and Table 4 for small fleets.~~

The equation for calculating NOx fleet average index is below:

$$\text{NOx-Fleet average index} = \frac{[\text{SUM of (max hp} \times \text{Emission Factor multiplied by the VDECS Factor for each engine in fleet) for all engines in fleet}]}{[\text{SUM of (max hp} \times \text{Emission Factor for each engine in fleet) for all engines in fleet}]}$$

where emission factor in g/bhp-hr is shown in Appendix A, and the VDECS factor is shown in Table 2 below.

**Table 2 – VDECS Factor**

VDECS	VDECS Factor
No VDECS Installed or Level 1 VDECS	1
Level 2 PM VDECS, not highest level	0.82
Level 2 PM VDECS, not highest level, with NOx Reduction	1 Minus (0.18 + (Verified Percent NOx Reduction Divided by 170))
Highest Level PM VDECS	0.7
Highest Level PM VDECS with NOx Reduction	1 Minus (0.3 + (Verified Percent NOx Reduction Divided by 170))
NOx Reduction only	1 Minus (Verified Percent NOx Reduction Divided by 170)

**(1) Fleet Average Targets for Large and Medium Fleets** - Table 34 shows the targets used to calculate the NOx fleet average target rate for each compliance date for large and medium fleets. The Emission Factors are defined in Appendix A.

**Table 34 – Large and Medium Fleet NO<sub>x</sub> Targets for Each Max Hp Group  
For Use in Calculating NO<sub>x</sub> Fleet Average Target Rates [g/bhp-hr]**

<b>Compliance Date: January 1 of Year</b>	<b>25-49 hp</b>	<b>50-74 hp</b>	<b>75-99 hp</b>	<b>100-174 hp</b>	<b>175-299 hp</b>	<b>300-599 hp</b>	<b>600-750 hp</b>	<b>&gt;750 hp</b>
2014 (Large Fleets Only)	5.8	6.5	7.1	6.4	6.2	5.9	6.1	7.2
2015 (Large Fleets Only)	5.6	6.2	6.7	6	5.8	5.5	5.6	6.8
2016 (Large Fleets Only)	5.3	5.8	6.2	5.5	5.3	5.1	5.2	6.5
2017	5.0	5.4	5.5	4.9	4.7	4.5	4.6	6.0
2018	4.7	5.0	4.8	4.3	4.1	4.0	4.0	5.5
2019	4.4	4.6	4.1	3.7	3.5	3.4	3.4	5.0
2020	4.1	4.2	3.4	3.1	2.9	2.8	2.9	4.5
2021	3.8	3.8	2.7	2.5	2.3	2.2	2.3	4.0
2022	3.5	3.4	2.0	1.9	1.7	1.7	1.7	3.5
2023	3.3	3.0	1.4	1.3	1.5	1.5	1.5	3.4

<b>NO<sub>x</sub> Targets for each Max Hp Group</b>								
<b>Compliance Date: March 1 of Year</b>	<b>25-49 hp</b>	<b>50-74 hp</b>	<b>75-99 hp</b>	<b>100- 174 hp</b>	<b>175-299 hp</b>	<b>300-599 hp</b>	<b>600- 750 hp</b>	<b>&gt;750 hp</b>
2010 (large fleets only)	5.8	6.5	7.1	6.4	6.2	5.9	6.1	7.2
2011 (large fleets only)	5.6	6.2	6.7	6.0	5.8	5.5	5.6	6.8
2012 (large fleets only)	5.3	5.8	6.2	5.5	5.3	5.1	5.2	6.5
2013	5.1	5.5	5.7	5.1	4.9	4.7	4.8	6.1
2014	4.9	5.1	5.2	4.7	4.5	4.3	4.4	5.7
2015	4.6	4.8	4.8	4.3	4.1	3.9	4.0	5.3
2016	4.4	4.4	4.3	3.8	3.6	3.5	3.6	4.9
2017	4.2	4.1	3.8	3.4	3.2	3.1	3.2	4.5
2018	4.0	3.7	3.3	3.0	2.8	2.7	2.7	4.1
2019	3.7	3.4	2.8	2.6	2.3	2.3	2.3	3.8
2020	3.5	3.2	2.4	2.2	1.9	1.9	1.9	3.4

**(2) Fleet Average Targets for Small Fleets - Table 4 shows the targets used to calculate the fleet average target rate for each compliance date for small fleets.**

**Table 4 – Small Fleet Targets for Each Max Hp Group  
For Use in Calculating Fleet Average Target Rates [g/bhp-hr]**

<u>Compliance Date:</u> <u>January 1 of Year</u>	<u>25-49</u> <u>hp</u>	<u>50-74</u> <u>hp</u>	<u>75-99</u> <u>hp</u>	<u>100-174</u> <u>hp</u>	<u>175-299</u> <u>hp</u>	<u>300-599</u> <u>hp</u>	<u>600-750</u> <u>hp</u>	<u>&gt;750</u> <u>hp</u>
<u>2019</u>	<u>5.8</u>	<u>6.5</u>	<u>7.1</u>	<u>6.4</u>	<u>6.2</u>	<u>5.9</u>	<u>6.1</u>	<u>7.2</u>
<u>2020</u>	<u>5.6</u>	<u>6.2</u>	<u>6.7</u>	<u>6.0</u>	<u>5.8</u>	<u>5.5</u>	<u>5.6</u>	<u>6.8</u>
<u>2021</u>	<u>5.3</u>	<u>5.8</u>	<u>6.2</u>	<u>5.5</u>	<u>5.3</u>	<u>5.1</u>	<u>5.2</u>	<u>6.5</u>
<u>2022</u>	<u>5.0</u>	<u>5.4</u>	<u>5.5</u>	<u>4.9</u>	<u>4.7</u>	<u>4.5</u>	<u>4.6</u>	<u>6.0</u>
<u>2023</u>	<u>4.7</u>	<u>5.0</u>	<u>4.8</u>	<u>4.3</u>	<u>4.1</u>	<u>4.0</u>	<u>4.0</u>	<u>5.5</u>
<u>2024</u>	<u>4.4</u>	<u>4.6</u>	<u>4.1</u>	<u>3.7</u>	<u>3.5</u>	<u>3.4</u>	<u>3.4</u>	<u>5.0</u>
<u>2025</u>	<u>4.1</u>	<u>4.2</u>	<u>3.4</u>	<u>3.1</u>	<u>2.9</u>	<u>2.8</u>	<u>2.9</u>	<u>4.5</u>
<u>2026</u>	<u>3.8</u>	<u>3.8</u>	<u>2.7</u>	<u>2.5</u>	<u>2.3</u>	<u>2.2</u>	<u>2.3</u>	<u>4.0</u>
<u>2027</u>	<u>3.5</u>	<u>3.4</u>	<u>2.0</u>	<u>1.9</u>	<u>1.7</u>	<u>1.7</u>	<u>1.7</u>	<u>3.5</u>
<u>2028</u>	<u>3.3</u>	<u>3.0</u>	<u>1.4</u>	<u>1.3</u>	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>3.5</u>

**(b) (2)-BACT Requirements**

Each year, each fleet must determine if it will be able to meet the fleet average requirements in section 2449.1(a) for the next January March 1 compliance date, and if not, the following BACT requirement must be met. If a fleet does not meet the NOx Target rate in section 2449.1(a)(1), it must meet the BACT turnover requirements in section 2449.1(b)(1)(a)(2)(A) below prior to the January 1 compliance date.

~~***(A) Turnover Requirements for Fleets Not Meeting NOx Target Rate***—A fleet may meet the turnover BACT requirements by performing turnover or installing VDECS as described in section 2449.1(b)(10) below. Vehicles exempt from the performance requirements under section 2449(e) cannot be used to generate BACT credits. retiring a vehicle, designating a vehicle as a low-use vehicle, repowering a vehicle, rebuilding the engine to a more stringent emissions configuration, or applying a VDECS verified to achieve NOx reductions. If repowering a vehicle or rebuilding the engine to a more stringent emissions configuration, the new engine must be Tier 2 or higher and must be a higher tier than the engine replaced or rebuilt. The method for counting VDECS verified to achieve NOx reductions is specified in section 2449.1(a)(2)(A)8.~~

- (1) 4. Turnover BACT Rate** – If a fleet does not meet the NOx fleet average Target Rate in section 2449.1(a)(1), it must demonstrate that during the calendar year prior to the compliance date, it has earned the amount of BACT credit (in hp) necessary to meet or exceed the minimum BACT requirements specified for that compliance date. The minimum BACT requirements (in hp) for each compliance date equal:  
 (The BACT rate (percent shown below in (A) through (C) for the compliance date), multiplied by the total max hp of the fleet as reported on the previous reporting date)  
 turned over the required percent of the total maximum power of the fleet that existed on March 1 of the previous year since March 1 of the previous year.



For example, if a large fleet does not meet the January 1, 2014, fleet average target rate, the fleet must demonstrate that it had accumulated enough BACT credit between January 1, 2013 and December 31, 2013, to satisfy the BACT requirements for January 1, 2014. The BACT requirements for January 1, 2014, for a large fleet equals the BACT rate for that compliance date (4.8 percent for 2014, as shown below in subsection (A)) multiplied by the fleet's max hp as reported by the previous reporting date, March 1, 2013.

Any carryover ~~turnover~~ BACT credit previously accrued may be applied towards the BACT requirements ~~turnover~~ required in a later year as specified in the sections below. The required BACT rate ~~turnover~~ percents to demonstrate ~~on~~ for each compliance date is ~~are~~ described below in (A) through (C). ~~a. through e.~~

**(A) Large fleets –**

- 1: 2014: 4.8 percent
- 2: 2015 to 2017: 8 percent
- 3: 2018 to 2023: 10 percent

**(B) Medium fleets –**

- 1: 2017: 8 percent
- 2: 2018 to 2023: 10 percent

**(C) Small fleets –**

- 2019 to 2028: 10 percent

- ~~a) 2010: 8 percent.~~
- ~~b) 2011 and 2012 4.8 percent.~~
- ~~c) 2013:~~
  - ~~i. 14.4 percent for large fleets that did not meet the NOx fleet average target in 2011 or 2012,~~
  - ~~ii. 11. 2 percent for large fleets that met the NOx fleet average target in 2011 but not 2012, and~~
  - ~~iii. 8 percent for large fleets that met the NOx fleet average target in 2012 and for all medium fleets.~~
- ~~d) 2014 and 2015: 8 percent.~~
- ~~e) 2016 and later: 10 percent.~~

**(2) Exemptions from BACT for Medium and Large Fleets –** For medium and large fleets, a vehicle is exempt from the BACT requirements of section 2449.1(b)(1) if it qualifies for one or more of the exemptions set forth in section 2449(e) or meets one of the conditions listed in section (A) through (E) below. A fleet that does not meet the fleet average target in section 2449.1(a)(1) must meet the BACT requirements with the vehicles that do not qualify for an exemption under either section 2449(e) or this section, provided that nothing shall require a fleet to apply a VDECS to any vehicle. Where all of the vehicles in a fleet qualify for an exemption under either this section or section 2449(e), the fleet is exempt from the BACT and fleet average requirements in that year. The exemptions set forth in this section do not lower the total max hp on which the BACT requirements are calculated.

- (A) On the compliance date, the vehicle is less than 10 years old from the date of manufacture.
- (B) The vehicle meets all of the following specialty vehicle criteria:
  - 1. The fleet has turned over all other vehicles first,
  - 2. No repower is available for the specialty vehicle, as demonstrated to the Executive Officer,
  - 3. A used vehicle with a cleaner engine is not available to serve a function and perform the work equivalent to that of the specialty vehicle, as demonstrated to the Executive Officer, and
  - 4. The specialty vehicle has the highest level PM VDECS installed.
- (C) The vehicle had a Level 2 or 3 PM VDECS installed within the last six years and such VDECS was highest level PM VDECS at the time of the installation.
- (D) The vehicle's engine is equipped with an original equipment manufacturer diesel particulate filter that came new with the vehicle, or the vehicle has a Tier 4 interim or Tier 4 final engine.
- (E) The vehicle has the highest level PM VDECS installed prior to January 1, 2013, except that this exemption may be applied to no more than 15 percent of a fleet's total hp as of December 31, 2012.
  - 1. If before January 1, 2013, the fleet has installed the highest level PM VDECS on more than 15 percent of the fleet's December 31, 2012, total hp, the fleet may apply this exemption to any vehicles with the highest level PM VDECS installed, as long as the total hp of those vehicles does not exceed the 15 percent exemption threshold established in section (E) above.
  - 2. The highest level PM VDECS must remain on the vehicle in order to maintain this exemption. If a VDECS fails, the fleet must replace the VDECS in accordance with section 2449(e)(1) to maintain this exemption for the vehicle.

**(3) Exemptions from BACT for Small Fleets** – For small fleets, a vehicle is exempt from the BACT requirements of section 2449.1(b)(1) if it qualifies for one or more of the exemptions set forth in section 2449(e) or meets one of the conditions listed in section (A) through (E) below. A fleet that does not meet the fleet average target in section 2449.1(a)(2) must meet the BACT requirements with the vehicles that do not qualify for an exemption under either section 2449(e) or this section, provided that nothing shall require a fleet to apply a VDECS to any vehicle. Where all of the vehicles in a fleet qualify for an exemption under either this section or section 2449(e), the fleet is exempt from the BACT and fleet average requirements in that year. The exemptions set forth in this section do not lower the total max hp on which the BACT requirements are calculated.

- (A) On the compliance date, the vehicle is less than 10 years old from the date of manufacture.
- (B) The vehicle meets all of the specialty vehicle criteria described above in section 2449.1(b)(2)(B).
- (C) There is no highest level VDECS available for the vehicle's engine as of 10 months prior to the compliance date (i.e., there is no Level 2 or 3 VDECS, or

there is no Level 2 or 3 VDECS which can be used without impairing the safe operation of the vehicle as demonstrated per section 2449(e)(8)).

(D) The vehicle's engine is equipped with an original equipment manufacturer diesel particulate filter that came new with the vehicle, or the vehicle has a Tier 4 interim or Tier 4 final engine.

(E) The vehicle's engine has already been retrofitted with a Level 2 or 3 VDECS that was the highest level PM VDECS available at time of installation. An engine with a Level 2 VDECS that was not the highest level VDECS at time of installation does not qualify for this exemption.

(4) Order of BACT Requirements - All Tier 0 and Tier 1 engines in a fleet, except those in vehicles that qualify for an exemption from the BACT requirements, must be turned over before the turnover of any other higher tier engines may be counted toward the BACT requirements in section 2449.1(b)(1) or toward accumulating carryover BACT credit. A fleet may, however, receive carryover BACT credit per section 2449.1(b)(10) and 2449.1(b)(15) for a VDECS installed on an engine, regardless of the engine's tier.

(5) Rounding - If the hp to meet BACT requirements under section 2449.1(b)(1) is less than half of the max hp of the lowest hp engine in the fleet that is subject to the BACT requirements, the next engine is not required to be turned over or have a VDECS applied to it. However, on the next year's compliance date, any hp not accounted for due to this rounding provision must be added to the BACT requirements under section 2449.1(b)(1). Once the required hp equals or exceeds half of the max hp of the next engine in the fleet that is subject to the BACT requirements, the next engine must be turned over or have a VDECS applied to it.

(6) Delay Tier 2 Turnover - All vehicles with a Tier 2 or higher engine are exempt from the BACT requirements through January 1, 2015 (i.e., the first turnover of or VDECS installations on Tier 2 or higher engines would be required between January 1, 2015 and December 31, 2015), provided that all Tier 0 and Tier 1 vehicles in the fleet owner's fleet that do not qualify for an exemption under section 2449.1(b)(2) have been turned over.

(7) Delayed Requirements for Early Compliance – Large fleets are exempt from the January 1, 2014 performance requirements if the sum of the fleet's BACT credits on March 1, 2010 exceeded 8 percent of the fleet's March 1, 2009 hp. To determine eligibility, ARB will take the sum of: "Credit for Early Repowers and Rebuilds to More Stringent Emissions Standards" gained under 2449.1(b)(13) plus "Credit for Early Replacement" gained under 2449.1(b)(14) plus "Double Credit for Early VDECS Installations" gained under 2449.1(b)(15) plus "Credit for Early Reduced Fleet HP" gained under 2449.1(b)(16) plus BACT credit gained for turnover from March 1, 2009, through February 28, 2010, that was not accounted for under sections 2449.1(b)(16). If the sum of these credits exceeds (Total max hp of the fleet on March 1, 2009 multiplied by 0.08), then the fleet will

not be required to meet either the January 1, 2014, fleet average or the January 1, 2014, BACT requirements. This provision shall not have the effect of reducing any credit that any fleet would otherwise have the right to receive in 2014 or in any subsequent year, even if such credit provided all or part of the basis for a finding that such fleet had BACT credits on March 1, 2010, in excess of 8 percent of such fleet's hp on March 1, 2009.

**(8) Accumulating Carryover BACT Credit** – Beginning on January 1, 2013 for large fleets, on January 1, 2016 for medium fleets, and on January 1, 2018 for small fleets, a fleet will accumulate carryover BACT credit each year it exceeds the BACT requirements specified in section 2449.1(b)(1). The amount of carryover BACT credit (in hp) accumulated is equal to: (The amount of BACT credit earned in the calendar year prior to January 1 of the year for which the carryover BACT credit is being calculated) minus (the amount of BACT credit needed to fulfill the BACT requirements on January 1 of the year for which the carryover BACT credit is being calculated).

**(9) Using Carryover BACT Credit** – Except as provided in section 2449.1(b)(16), accumulated carryover BACT credit may be applied to meeting the BACT requirements of section 2449.1(b)(1) in a later year. The amount of carryover BACT credit used to meet the BACT requirements in any one year is subtracted from the accumulated carryover BACT credit total, with the remainder being available for use in subsequent years. The amount of BACT credit earned in a calendar year plus the amount of carryover BACT credit used must equal or exceed the minimum BACT requirements described in section 2449.1(b)(1).

**(10) BACT Credit Earned for Turnover, PM VDECS, and NOx VDECS** –  
Beginning on January 1, 2013 for large fleets, on January 1, 2016 for medium fleets, and on January 1, 2018 for small fleets, BACT credit is earned as follows:

- (A) For turnover, as specified in section 2449(c)(55), BACT credit (in hp) equals: (Max hp of the vehicle that was turned over).
- (B) For a highest level PM VDECS, BACT credit (in hp) equals: (Max hp of the vehicle to which the highest level PM VDECS was applied). PM VDECS that are not the highest level PM VDECS receive no BACT credit.
- (C) For a VDECS verified to reduce NOx but that is not highest level PM VDECS, BACT credit (in hp) equals: (Verified Percent NOx Reduction divided by 60 percent) multiplied by (Max hp of the vehicle to which the NOx VDECS was applied).
- (D) For a VDECS verified to reduce NOx and that is also the highest level PM VDECS, or for a VDECS verified to reduce NOx installed on an engine that also has a highest level PM VDECS that is verified separately, BACT credit (in hp) equals: (Verified Percent NOx Reduction divided by 120 percent) multiplied by (Max hp of the vehicle to which the NOx VDECS was applied). This credit is applied in addition to credit for installing the highest level PM VDECS per section 2449.1(b)(10)(B) above.

**(11) Excess PM VDECS Credits Used for Compliance with Off-Road and Truck and Bus Regulations** - For the same fleet owner, excess PM VDECS credits granted in the regulation for In-Use Off-Road Diesel-Fueled Fleets (Off-Road regulation) may be used in the Truck and Bus regulation (title 13, CCR section 2025) and excess PM VDECS credits granted in the Truck and Bus regulation may be used in the Off-Road regulation before January 1, 2017. Starting January 1, 2017, no credits may be transferred between the regulations.

**(A) Off-Road generated credits used to comply with the Truck and Bus**

**regulation** – Except for low-use vehicles (as defined in sections 2449(c)(39) and (63)) and vehicles that are exempt under section 2449(e), vehicles subject to the Off-Road regulation that have Level 3 PM VDECS installed on one or more engines may generate excess PM VDECS credits to comply with the Truck and Bus regulation (title 13, CCR, section 2025), as follows:

**1. Excess compliance credits under the Off-Road regulation** – Beginning January 1, 2013, for large fleets, and on January 1, 2016, for medium fleets, if a fleet earns BACT credit in a calendar year that exceeds the BACT requirements for that year, the excess BACT credit earned (i.e., the amount of BACT credit earned above the BACT requirements for that year, in hp) from the installation of Level 3 PM VDECS may be applied towards compliance with the Truck and Bus regulation per section 2025 as follows:

(Excess PM VDECS credits to apply towards the Truck and Bus regulation = [(Total max hp of excess engines with the Level 3 PM VDECS installed) divided by 300] truncated to a whole number).

If in an applicable compliance year no BACT credit is earned through the installation of Level 3 PM VDECS (for example, if no vehicles are retrofitted with Level 3 devices that calendar year), no excess PM VDECS credit will be earned.

The Excess PM VDECS credit earned above may be applied towards the Truck and Bus regulation each year until the vehicle that generated the excess PM VDECS credit is 1) needed for compliance with sections 2449.1(a) or (b), or 2) is retired, sold, scrapped, or otherwise removed from the California fleet.

If the equation above, before truncation, does not result in a whole number, any remaining hp with Level 3 PM VDECS not used to generate excess PM VDECS credit (i.e., the truncated amount) may be used as carryover BACT credit towards compliance with the Off-Road regulation, or may be accumulated to generate excess PM VDECS credits in future years.

**2. Early PM VDECS installations** – If any small, medium, or large fleet installs Level 3 PM VDECS by the deadlines shown in section 2449.1(b)(15), the fleet has the option to either (1) accumulate double

carryover credit to be used towards the BACT requirements of the Off-Road regulation (per section 2449.1(b)(1)), or (2) to apply single PM VDECS credit towards compliance with the Truck and Bus regulation.

**3. Compliance with the Off-Road regulation – Fleet owners that use excess PM VDECS credits towards for compliance with the Truck and Bus regulation (as specified in section (11)(A)1. and 2. above) shall not count their Level 3 PM VDECS in the fleet average index calculations in section 2449.1(a) (i.e., the VDECS Factor is 1 for these vehicles or engines with the excess Level 3 PM VDECS), and no BACT credit can be accrued that can be used towards compliance with the Off-Road regulation for those VDECS. Once the excess PM VDECS credit can no longer be applied to the Truck and Bus regulation, the Level 3 PM VDECS that were used to generate the expired excess PM VDECS credit can be returned to the fleet average index calculations in section 2449.1(a).**

**(B) Excess Truck and Bus regulation credits used to comply with the Off-Road regulation – For each vehicle that generates an excess PM VDECS credit per Truck and Bus regulation, a one-time PM VDECS credit may be applied towards compliance with the Off-Road regulation, as follows: (Excess PM VDECS credit that can be applied towards the Off-Road regulation (i.e., BACT credit, in hp, to apply towards the Off-Road regulation) = (Excess PM VDECS credits from the Truck and Bus regulation) multiplied by 300).**

For each additional vehicle that generates a new excess PM VDECS credit, another one-time excess PM VDECS credit can be applied towards the Off-Road regulation. Once it is determined, under the Truck and Bus regulation, that a vehicle can no longer generate excess PM VDECS credits, the BACT credit earned through this provision, if not previously used, will expire and can no longer be used by the fleet towards compliance with the Off-Road regulation.

**(12) Beginning ~~2.~~ Carryover turnover BACT Credit –**

**a. Beginning–** All fleets may earn and accumulate BACT credits for taking early actions in accordance with subparagraphs (13) through (18) below, but with the exception of such credits for taking early action, all fleets begin with zero carryover BACT credit on January 1, 2013. All fleets begin with zero carryover turnover credit on March 1, 2009. All fleets may begin accumulating carryover turnover credit on March 1, 2009. To claim credit, fleets must submit to ARB and retain records as described in sections 2449(g) and (h).

**(13) i. Credit for Early Repowers and Rebuilds to More Stringent Emissions**

**Standards – Credit for early repowers can only be claimed for engines that remain in the fleet on the compliance date that the credit is taken. Fleets that have repowered their vehicles with Tier 1 or higher engines or rebuilt the engine from a lower Tier to a Tier 1 or more stringent emissions standard before March**

1, 2009, will accumulate a carryover BACT turnover credit (in hphorsepower) equal to:

(the max hp of the vehicles repowered and the engines rebuilt in accordance with the preceding). the maximum power of Tier 1 or higher repower engines installed in affected vehicles before March 1, 2009.

Fleets that repower their Tier 0 or Tier 1 vehicles with Tier 2 or higher engines, or rebuild the engines in their Tier 0 or Tier 1 vehicles to a Tier 2 or more stringent emissions standard, prior to the following deadlines, will accumulate a carryover BACT credit (in hp) equal to the max hp of the vehicles repowered and the engines rebuilt in accordance with the preceding:

(A) Large fleets: January 1, 2013

(B) Medium fleets: January 1, 2016

(C) Small fleets: January 1, 2018

The credit can only be claimed for engines that remain in the fleet in the year that the credit is taken.

**(14) ii.- Credit for Early Replacement** – Fleets that have replaced their Tier 0 vehicles with Tier 1 or higher vehicles at an average rate greater than 8 percent of total max hpmaximum power per year between March 1, 2006 and March 1, 2009 will accumulate carryover turnoverBACT credit (in hphorsepower) equal to: [(Total max hpmaximum power of Tier 0 vehicles retired between March 1, 2006 and March 1, 2009) minus (Total max hpmaximum power of Tier 0 vehicles added between March 1, 2006 and March 1, 2009) minus (2 times the tTotal “Credit for Early Reduced Hp” credit for early retirement claimed under section (16)(v) below)] minus [(Total max hpmaximum power of fleet on March 1, 2007 multiplied by times 0.08) plus (Total max hpmaximum power of fleet on March 1, 2008 multiplied by times 0.08) plus (Total max hpmaximum power of fleet on March 1, 2009 multiplied by times 0.08)]. Tier 0 vehicles repowered with newer engines are counted under (13)(i) above and shall not be counted under this section(ii).

**(15) iii.- Double Credit for Early VDECS Installations NOx Retrofits** –If fleets install a highest level PM VDECS or a VDECS verified to reduce NOx, prior to January 1, 2013 for large fleets, January 1, 2016 for medium fleets, and January 1, 2018 for small fleets, fleets that have installed VDECS that have been verified as achieving NOx reductions on their vehicles before March 1, 2011 will accumulate a carryover turnover BACT credit (in horsepower) as follows equal to:  
2 multiplied by (Verified Percent NOx Reduction divided by 60 percent) multiplied by (Maximum power on which VDECS verified to achieve NOx reductions are installed before March 1, 2011)  
(A) For a highest level PM VDECS, BACT credit (in hp) equals:  
2 multiplied by the (Max hp of the vehicle to which the highest level PM VDECS was applied).  
PM VDECS that are not the highest level PM VDECS receive no BACT credit.

(B) For a VDECS verified to reduce NOx but that is not highest level PM VDECS, BACT credit (in hp) equals:

2 multiplied by (Verified Percent NOx Reduction divided by 60 percent) multiplied by the (Max hp of the vehicle to which the NOx VDECS was applied).

(C) For a VDECS verified to reduce NOx and that is also the highest level PM VDECS, or for a VDECS verified to reduce NOx installed on an engine that also has a highest level PM VDECS that is verified separately, BACT credit (in hp) equals:

2 multiplied by the (Verified Percent NOx Reduction divided by 120 percent) multiplied by (Max hp of the vehicle to which the NOx VDECS was applied). This credit is applied in addition to credit for installing the highest level PM VDECS per section 2449.1(b)(15)(A) above.

**iv. Credit for Reduced Fleet Activity**— Fleets that demonstrate a reduction in fleet activity will accumulate carryover turnover credit (in horsepower). Fleet activity is defined as the sum of [(Total maximum power of the vehicle) times (Number of hours the vehicle was operated in the applicable 12 month period)] for each vehicle in the fleet.

- ~~1. Carryover turnover credit generated from reduced activity may only be applied toward the March 1, 2010, or March 1, 2011 compliance dates.~~
- ~~2. Fleets that receive credit for the retirement of any vehicle prior to March 1, 2010, per section (v) below, can not count that vehicle in the calculation of reduced activity credit.~~
- ~~3. Carryover turnover credit shall be calculated for the fleet, not including those vehicles retired for credit under section (v) below, as:~~

~~[(Fleet activity for January 1, 2007, to December 31, 2007) minus (Fleet activity for March 1, 2009, to February 28, 2010, including vehicles added to the fleet) divided by (fleet activity for January 1, 2007, to December 31, 2007)] multiplied by (Total maximum power of fleet on July 1, 2007)~~

- ~~4. Fleet owners must use vehicle specific data, including but not limited to hour meter logs or operator logs linking operators to specific vehicles, from July 1, 2007, to March 1, 2010, as described in section 2449(g)(1)(G)4 to document vehicle activity.~~
- ~~5. Fleets that do not have hour meter logs or vehicle-specific operator logs or equivalent records that are verifiable and substantively demonstrate activity for all vehicles in the fleet:  
A. May use other verifiable indicators that are directly related to reduced vehicle operation to demonstrate an overall~~



reduction in fleet activity from July 1, 2007, to March 1, 2010, including but not limited to records of overall off-road diesel fuel use for the fleet, as described in section 2449(g)(1)(G)4. However, such fleets must subtract the total credit for early retirement claimed under section (v) below from their reduced activity credit.

B. ~~May use indicators, including but not limited to revenue or total vehicle operator employment, that demonstrate a reduction in business or staffing but that do not directly correspond to vehicle or fleet activity. To qualify for a credit using such indirectly correlated indicators, the fleet must be able to provide some evidence of overall reduced fleet activity. The Executive Officer will grant a fleet using such indicators a maximum 20 percent credit for demonstrated reduced activity not directly related to vehicular operation. Such fleets must also subtract from the 20 percent reduced activity credit any credits received for early retirement claimed under section (v) below credit. Fleets must not apply for credit using indicators that would demonstrate reduced business or staffing if the fleet has information or records that demonstrate the fleet has not reduced overall vehicle activity.~~

**(16) v. Credit for Early Reduced Fleet Hp Retirement** – Fleets that reduce overall hp from March 1, 2006, to March 1, 2010, accumulate carryover BACT turnover credit (in hp) equal to 0.5 multiplied by the following:  $[(\text{Total max hp of the fleet on March 1, 2006, including low-use vehicles}) - (\text{Total max hp of the fleet on March 1, 2010, including low-use vehicles})]$ . In accordance with section 2449.1(b)(9), large fleets may use any such credit to meet the BACT requirements in section 2449.1(b)(1) beginning with the January 1, 2015 BACT requirements, or in any subsequent year. Notwithstanding section 2449.1(b)(9), large fleets may not use credit from this provision to meet the BACT requirements in section 2449.1(b)(1) for the initial compliance year for large fleets, which is the January 1, 2014, compliance deadline. For example, if a fleet accumulated BACT credit by reducing hp from March 1, 2006, to March 1, 2010, and also accumulated BACT credit from repowers during the same period, the fleet could apply the repower credit toward their January 1, 2014, BACT requirements, but could not apply the credit from reduced hp under this provision to their January 1, 2014, BACT requirements. The fleet could apply the credit from reduced hp under this provision to their January 1, 2015, BACT requirements, as well as any future year until such credits are expended.

**(17) Credit for 2010 to 2011 Reduced Fleet Hp** – Fleets that reduce their overall hp from March 1, 2010, through February 28, 2011, will accumulate carryover BACT credit (in hp) equal to:  
(Total max hp of the fleet on March 1, 2010, including low-use vehicles) minus  
(Total max hp of the fleet on February 28, 2011, including low-use vehicles).

**(18) Credit for Interim Replacement and Retirement** – Fleets that replace or retire over 8 percent of the fleet's total max hp in Tier 0 and Tier 1 vehicles in any one year during the specified periods below will accumulate carryover BACT credit (in hp) equal to:

(Combined total of max hp of Tier 0 and Tier 1 vehicles retired over the year) minus (Combined total of max hp of Tier 0 or Tier 1 vehicles added over the year) minus [(Total max hp of fleet at the end of the year) multiplied by 0.08].  
In each year, the replacement or retirement of vehicles will be summed from January 1 through December 31 of that year, excepting 2011, during which the replacement or retirement will be summed from March 1 through December 31.  
Fleets shall exclude vehicles repowered or rebuilt to a more stringent emissions standard in each year (that earned BACT credit per section 2449.1(b)(13)), from all such calculations. For the purposes of this provision, Tier 0 and Tier 1 vehicles that are replaced must be replaced with Tier 2 or higher vehicles in order to accumulate BACT credit.

(A) Large fleets: March 1, 2011 through December 31, 2012

(B) Medium fleets: March 1, 2011 through December 31, 2015

(C) Small fleets: March 1, 2011 through December 31, 2017

**b. Accumulating carryover turnover credit—**

- i. 2010-2015** – From March 1, 2010 through March 1, 2015 for large fleets and from March 1, 2013 through March 1, 2015 for medium fleets a fleet accumulates carryover turnover credit each year it turns over more than the required percent of its maximum power specified in section 2449.1(a)(2)(A)1. The amount accumulated is the maximum power turned over in excess of the required percent in the 12 months prior to March 1 of the year in which the carryover is calculated. From March 1, 2010, through March 1, 2012, a medium fleet accumulates carryover turnover credit each year the total horsepower it turns over exceeds 8 percent of its maximum power.
- ii. After 2015** – After March 1, 2015, a fleet will accumulate carryover turnover credit each year it turns over more than 10 percent of its maximum power. The amount accumulated is the maximum power turned over in the 12 months prior to March 1 of the year in which the carryover is calculated plus the carryover turnover credit used minus the required 10 percent.
- iii. Repower Credit** – From March 1, 2010 through March 1, 2012, a for medium fleets that did not accumulate any credit under (i) above shall accumulate carryover turnover credit each year equal

to the total maximum power of Tier 2 or higher repower engines installed in affected vehicles in the 12 months prior to March 1 of the year in which the carryover is calculated. From March 1, 2010 through March 1, 2011, a large fleet that did not accumulate any credit under (i) above shall accumulate carryover turnover credit each year equal to the total maximum power of Tier 2 or higher repower engines installed in affected vehicles in the 12 months prior to March 1 of the year in which the carryover is calculated.

**c. Using carryover turnover credit**—Accumulated carryover turnover credit may be applied to meeting the turnover requirements of section 2449.1(a)(2)(A)1 in a later year. The amount of carryover turnover credit used to meet the turnover requirements in any one year is subtracted from the carryover turnover credit total available in subsequent years. The amount of actual turnover or retrofits plus the amount of carryover turnover credit used must equal the minimum BACT turnover required by section 2449.1(a)(2)(A)1.

**3. Order of turnover**—All engines in a fleet that were not subject to a PM standard for new engines (Tier 0 and Tier 1 with no PM standard, i.e., Tier 1 engines between 50 and 174 horsepower), except those in vehicles that qualify for an exemption from under section 2449.1(a)(2)(A)4., must be turned over before turnover of any other higher tier engines may be counted toward the turnover requirements in section 2449.1(a)(2)(A) or toward accumulating carryover turnover credit. A fleet may, however, receive carryover turnover credit per section 2449.1(a)(2)(A)2.a.iii for a VDECS verified to achieve NOx reductions installed on an engine, regardless of the engine's tier.

**4. Exemptions**—A vehicle is exempt from the turnover of section 2449.1(a)(2)(A)1. if all vehicles in the fleet that do not qualify for an exemption under this section have been turned over and the vehicle meets one of the following conditions:

- a. On the compliance date, the vehicle is less than 10 years old from the date of manufacture;
- b. The vehicle meets all of the following specialty vehicle criteria:
  - i. The fleet has turned over all other vehicles first,
  - ii. No repower is available for the specialty vehicle, as demonstrated to the Executive Officer,
  - iii. A used vehicle with a cleaner engine is not available to serve a function and perform the work equivalent to that of the specialty vehicle, as demonstrated to the Executive Officer, and
  - iv. The specialty vehicle has been retrofit with highest level VDECS,
- c. The vehicle has been retrofitted within the last six years with a Level 2 or 3 VDECS that was highest level VDECS at the time of retrofit, or
- d. The vehicle has a Tier 4 interim or Tier 4 final engine.

e. ~~The vehicle has the highest level VDECS installed prior to March 1, 2011, except that this exemption may be applied to no more than 15 percent of a fleet's total horsepower as of January 1, 2013 March 1, 2010.~~

**5. ~~Delay Tier 1 turnover~~** – All vehicles with a Tier 1 or higher engine are exempt from the turnover requirements until the compliance year ending ~~March 1, 2013 (i.e., the first turnover of Tier 1 or higher engines would be required between March 2, 2012 and March 1, 2013), provided that all Tier 0 vehicles in the fleet owner's fleet that do not qualify for an exemption under section 2449.1(a)(2)(A)4. have been turned over.~~

**6. ~~Designating vehicle as low-use~~** – A fleet may designate a vehicle that was formerly used 100 hours or more per year as low-use by limiting its use to less than 100 hours per year and committing to keep its use less than 100 hours per year.

a. ~~Only vehicles formerly used 100 hours or more per year may be so designated. Vehicles so designated may be counted toward the turnover requirements.~~

b. ~~Once designated as low-use, a vehicle may never again be used more than 100 hours per year by the fleet unless the vehicle meets the adding vehicles requirements in section 2449(d)(7).~~

c. ~~A fleet is not obliged to designate a vehicle whose use drops below 100 hours per year as low-use, or to count it toward the turnover requirements. If such a vehicle is not designated as low-use, its use may increase beyond 100 hours per year in subsequent years.~~

**7. ~~Rounding~~** – If the horsepower required to be turned over under section 2449.1(a)(2)(A) is less than half of the maximum power of the lowest horsepower engine in the fleet that is subject to the turnover requirements, the next engine is not required to be turned over. However, on the next year's compliance date, any horsepower not turned over due to this rounding provision must be added to the required turnover under section 2449.1(a)(2)(A). Once the required horsepower to be turned over equals or exceeds half of the maximum power of the next engine in the fleet that is subject to the turnover requirements, the next engine must be turned over.

**8. ~~Turnover Credit for NOx Retrofits~~** – VDECS that have been verified as achieving NOx reductions may be used to satisfy the turnover requirements in section 2449.1(a)(2)(A)1 on each compliance date as follows:

~~Turnover credit for NOx retrofits equals (Verified Percent NOx Reduction divided by 60 percent) multiplied by (Maximum power on which VDECS verified to achieve NOx reductions was installed in last 12 months).~~

~~Turnover credit for NOx retrofits may be applied to meet the turnover requirements of section 2449.1(a)(2)(A)1 or to accumulate carryover turnover credit.~~

Note: Authority cited: Sections 39002, 39515, 39516, 39600, 39601, 39602, 40000, 41511, 43000, 43000.5, 43013, 43016, 43018, and 43018.2, Health and Safety Code. Reference: Sections 39002, 39515, 39516, 39600, 39601, 39602, 39650, 39656, 39657, 39658, 39659, 39665, 39667, 43000, 43000.5, 43013, 43016, 43018, and 43018.2, Health and Safety Code.

## Section 2449.2 PM Performance Requirements

### (a) Performance Requirements

Each fleet must meet the fleet average requirements in section 2449.2(a)(1) by March 1 of each year or demonstrate that it met the best available control technology (BACT) requirements as described in section 2449.2(a)(2). There are differing requirements for large and medium, and small fleets. If various portions of a fleet are under the control of different responsible officials because they are part of different subsidiaries, divisions, or other organizational structures of a company or agency, the fleet portions may comply with the performance requirements separately and be reported separately. However, the total maximum power of the vehicles under common ownership or control determines the fleet size. Fleets owned by low population county local municipalities are subject to the small fleet requirements, even if their total maximum power exceeds 2,500 horsepower. Section 2449(d)(4) describes requirements for fleets that change size.

### (1) Fleet Average Requirements

#### (A) Fleet Average Requirements for Large and Medium Fleets

1. **Diesel PM Fleet Average** – For each compliance date, a large or medium fleet must demonstrate that its Diesel PM Index was less than or equal to the calculated Diesel PM Target Rate.

The equation for calculating Diesel PM Target Rate is below:

Diesel PM  
Target Rate =  $\frac{\text{SUM of (Max Hp for each engine in fleet multiplied by Target for each engine in fleet) for all engines in fleet}}{\text{SUM of (Max Hp) for all engines in fleet}}$

where Target is the Diesel PM target in g/bhp-hr from Table 2. To find the Target for each engine, read the value for the appropriate row based on the compliance year and the appropriate column based on the engine's maximum power from Table 2.

The equation for calculating Diesel PM Index is below:

Diesel PM Index =  $\frac{\text{SUM of (Max Hp for each engine in fleet multiplied by PM Emission Factor for each engine in fleet) for all engines in fleet}}{\text{SUM of (Max Hp) for all engines in fleet}}$

Table 2 shows the targets used to calculate the Diesel PM Target Rate for each compliance date for large and medium fleets. The Emission Factors are defined in Appendix A.

**Table 2—Large and Medium Fleet PM Targets  
For Use in Calculating PM Target Rates [g/bhp-hr]**

Compliance Date: March 1 of Year	PM Targets for each Max Hp Group							
	25-49 hp	50-74 hp	75-99 hp	100-174 hp	175-299 hp	300-599 hp	600-750 hp	>750 hp
2010 (large fleets only)	0.46	0.60	0.62	0.33	0.23	0.18	0.20	0.30
2011 (large fleets only)	0.46	0.60	0.62	0.33	0.23	0.18	0.20	0.30
2012 (large fleets only)	0.39	0.43	0.46	0.26	0.16	0.14	0.14	0.24
2013	0.39	0.43	0.46	0.26	0.16	0.14	0.14	0.24
2014	0.29	0.23	0.24	0.18	0.11	0.11	0.11	0.18
2015	0.29	0.23	0.24	0.18	0.11	0.11	0.11	0.18
2016	0.21	0.18	0.19	0.14	0.08	0.08	0.08	0.11
2017	0.21	0.18	0.19	0.14	0.08	0.08	0.08	0.11
2018	0.12	0.12	0.13	0.10	0.06	0.06	0.06	0.08
2019	0.12	0.12	0.13	0.10	0.06	0.06	0.06	0.08
2020	0.08	0.08	0.07	0.06	0.03	0.03	0.03	0.06

**(B) Fleet Average Requirements for Small Fleets** – Small fleets must meet a PM fleet average beginning in 2015. To meet the PM fleet average, for each compliance date, a small fleet must demonstrate that its Diesel PM Index was less than or equal to the calculated Diesel PM Target Rate.

The equations for calculating Target Rates and Diesel PM Index are below:

Diesel PM

Target Rate = [SUM of ((Max Hp for each engine in fleet multiplied by Target for each engine in fleet))] divided by [SUM of (Max Hp) for all engines in fleet]

where Target is the PM target in g/bhp-hr from Table 3. To find the Target for each engine, read the value for the appropriate row based on the compliance year and the appropriate column based on the engine's maximum power from Table 3.

Diesel PM Index = [SUM of (Max Hp multiplied by PM Emission Factor) for each engine in fleet] divided by [SUM of (Max Hp) for all engines in fleet]

Table 3 shows the targets used to calculate the Diesel PM Target Rate for each compliance date for small fleets. The Emission Factors are defined in Appendix A.

**Table 3—Small Fleet PM Targets  
For Use in Calculating PM Target Rates [g/bhp-hr]**

Compliance Date: March 1 of Year	PM Targets for each Max Hp Group							
	25-49 hp	50-74 hp	75-99 hp	100- 174 hp	175- 299 hp	300- 599 hp	600- 750 hp	>750 hp
2015	0.46	0.60	0.62	0.33	0.23	0.18	0.20	0.30
2016	0.46	0.60	0.62	0.33	0.23	0.18	0.20	0.30
2017	0.39	0.43	0.46	0.26	0.16	0.14	0.14	0.24
2018	0.39	0.43	0.46	0.26	0.16	0.14	0.14	0.24
2019	0.29	0.23	0.24	0.18	0.11	0.11	0.11	0.18
2020	0.29	0.23	0.24	0.18	0.11	0.11	0.11	0.18
2021	0.21	0.18	0.19	0.14	0.08	0.08	0.08	0.11
2022	0.21	0.18	0.19	0.14	0.08	0.08	0.08	0.11
2023	0.12	0.12	0.13	0.10	0.06	0.06	0.06	0.08
2024	0.12	0.12	0.13	0.10	0.06	0.06	0.06	0.08
2025	0.08	0.08	0.07	0.06	0.03	0.03	0.03	0.06

**(2) BACT Requirements**— Each year, each fleet must determine if it will be able to meet the fleet average requirements for the next March 1 compliance date, and if not, the following BACT requirement must be met. If a fleet does not meet the Diesel PM Target Rate in section 2449.2(a)(1), it must meet the BACT Retrofit Requirements in section 2449.2(a)(2)(A). Fleets that fail to meet both an applicable NOx target rate in section 2449.1(a)(1) and the Diesel PM Target Rates in section 2449.2(a)(1) in a compliance year must first meet the BACT turnover requirements in section 2449.1(a)(2) in that year and then meet the BACT Retrofit Requirements in section 2449.2(a)(2)(A) in that year.

**(A) PM Retrofit Requirements for Fleets Not Meeting Diesel PM Target Rate**

**1. PM Retrofit Rate**— If a fleet does not meet the Diesel PM Target Rate in section 2449.2(a)(1), it must demonstrate that it has retrofitted the required percent of its total maximum power (not including specialty vehicles retrofitted and exempted from turnover in section 2449.1(a)(2)(A)4.b.) with highest level VDECS since March 1 of the previous year. Any carryover retrofit credit previously accrued may be applied towards the retrofits required. If the VDECS is not new (i.e., is being reused), it must have been taken from a vehicle that is no longer operating in California. Fleets may count acquisition of vehicles with Tier 4 interim or Tier 4 final engines or retirement of Tier 0 vehicles toward the retrofit requirement as described below. The required retrofit percents to demonstrate on each compliance date are described below in a. through d.

- a. 2010: 20 percent.
- b. 2011 and 2012:
- c. 2013 and later: 36 percent for large fleets that did not meet the PM fleet average target in 2011 or 2012, 28 percent for large fleets that met the PM fleet average target in 2011 but not 2012, and 20



percent for large fleets that met the PM fleet average target in 2012 and for all medium fleets.

d. 2014: 20 percent.

**a. Turnover to Tier 4 In Lieu of Retrofitting**— If since March 1 of the previous year, a fleet acquired Tier 4 interim or Tier 4 final engines already equipped with an original equipment manufacturer diesel particulate filter or vehicles equipped with such engines, the total maximum power of the Tier 4 interim and Tier 4 final engines may be counted toward the required hp to be retrofit under section 2449.2(a)(2)(A)1. or used to accumulate carryover PM retrofit credit if during that same period, the fleet also retired Tier 0, 1, 2, or 3 engines with that total maximum power or greater.

**b. Retirement of Tier 0 Vehicles in Lieu of Retrofitting for Fleets with Reduced Horsepower**— If since March 1 of the previous year, a fleet's total maximum power has decreased, the lesser of the total maximum power of Tier 0 vehicles retired since March 1 of the previous year and the total horsepower by which the fleet has been decreased may be counted toward the required hp to be retrofit under section 2449.2(a)(2)(A)1. Such retirement of Tier 0 vehicles may not be used to accumulate carryover PM retrofit credit. Retired Tier 0 vehicles that are counted toward the required hp to be retrofit under this subsection may not be used in subsection a. above to demonstrate that the fleet retired Tier 0, 1, 2, or 3 engines with at least the total maximum power of the Tier 4 engines added.

**b. c. Conversion or Repower of Diesel Vehicles to Alternative Fuel or Gasoline-Powered**— Fleets that convert or repower a diesel vehicle subject to the regulation to alternative fuel or gasoline-powered may count the max power of the vehicle converted or repowered toward the required hp to be retrofit under section 2449.2(a)(2)(A)1. or to accumulate carryover PM BACT retrofit credit.

## **2. Carryover PM retrofit credit—**

**a. Beginning**— All fleets for vehicles remaining in their fleets begin with zero carryover retrofit credit on March 1, 2011-2009. All fleets may begin accumulating carryover retrofit credit on March 1, 2009.

**i. Double Credit for Early PM Retrofits**— Fleets that have installed the highest level VDECS on their vehicles before January 1, 2010 will accumulate a carryover retrofit credit equal to: 2 multiplied by total maximum power of engines on which highest level VDECS was installed before January 1, 2010, unless the contract for funding the VDECS stipulates single credit for installation of the VDECS.

**ii. Credit for Other PM Retrofits Before Initial Compliance Date**— Small and medium fleets that install highest level VDECS on their vehicles before March 1, 2012 will accumulate carryover retrofit credit equal to; 2 multiplied by total maximum power of engines on

which highest level VDECS was installed. Small fleets that install highest level VDECS on their vehicles between March 1, 2012 and February 28, 2014 accumulate carryover PM BACT retrofit credit equal to total maximum power of engines on which highest level VDECS was installed.

**iii. Credit for Reduced Fleet Activity**—Fleets that demonstrate a reduction in fleet activity will accumulate carryover retrofit credit (in horsepower). Fleet activity is defined as the sum of [(Total maximum power of the vehicle) times (Number of hours the vehicle was operated in the applicable 12-month period)] for each vehicle in the fleet.

1. Carryover retrofit credit generated from reduced activity may only be applied toward the March 1, 2010, or March 1, 2011 compliance dates.
2. Fleets that receive credit for the retirement of any vehicle prior to March 1, 2010, per section (iv) below, can not count that vehicle in the calculation of reduced activity credit.
3. Carryover retrofit credit shall be calculated for the fleet, not including those vehicles retired for credit under section (iv) below, as:

[(Fleet activity for January 1, 2007, to December 31, 2007) minus (Fleet activity for March 1, 2009, to February 28, 2010, including vehicles added to the fleet) divided by (fleet activity for January 1, 2007, to December 31, 2007)] multiplied by (Total maximum power of fleet on July 1, 2007)

4. Fleet owners must use vehicle specific data, including but not limited to hour meter logs or operator logs linking operators to specific vehicles, from July 1, 2007, to March 1, 2010, as described in section 2449(g)(1)(G)4 to document vehicle activity.
5. Fleets that do not have hour meter logs or vehicle-specific operator logs or equivalent records that are verifiable and substantively demonstrate activity for all vehicles in the fleet:
  - A. May use other verifiable indicators that are directly related to reduced vehicle operation to demonstrate an overall reduction in fleet activity from July 1, 2007, to March 1, 2010, including but not limited to records of overall off-road diesel fuel use for the fleet, as described in section 2449(g)(1)(G)4. However, such fleets must subtract the total credit for early retirement claimed under section (iv) below from their reduced activity credit.
  - B. May use indicators, including but not limited to revenue or total vehicle operator employment, that demonstrate a

reduction in business or staffing but that do not directly correspond to vehicle or fleet activity. To qualify for a credit using such indirectly correlated indicators, the fleet must be able to provide some evidence of overall reduced fleet activity. The Executive Officer will grant a fleet using such indicators a maximum 20 percent credit for demonstrated reduced activity not directly related to vehicular operation. Such fleets must also subtract from the 20 percent reduced activity credit any credits received for early retirement claimed under section (iv) below. Fleets must not apply for credit using indicators that would demonstrate reduced business or staffing if the fleet has information or records that demonstrate the fleet has not reduced overall vehicle activity.

**iv. Credit for Early Retirement**—Fleets that reduce overall horsepower from March 1, 2006, to March 1, 2010, begin with carryover retrofit credit (in horsepower) equal to: (Total maximum horsepower of the fleet on March 1, 2006) minus (Total maximum horsepower of the fleet on March 1, 2010).

**b. Accumulating carryover PM BACT retrofit credit**—Beginning March 1, 2011 for large fleets, March 1, 2013 for medium fleets, and March 1, 2015 for small fleets, a fleet will accumulate carryover retrofit credit each year the total horsepower it retrofits plus the carryover retrofit credit it uses exceeds the required percent of its maximum power specified in section 2449.2(a)(2)(A)1. The amount accumulated is the maximum power retrofit plus the carryover retrofit credit used minus the required percent in the past 12 months prior to March 1. A large fleet also accumulates carryover retrofit credit on March 1, 2010 if the sum of the double retrofit credit earned from March 1, 2009 to January 1, 2010 plus the single retrofit credit earned from January 1, 2010 to March 1, 2010 exceeds 20 percent of its maximum horsepower. The amount accumulated is the sum of double credit retrofit credit earned from March 1, 2009 to January 1, 2010 plus the single credit earned from January 1, 2010 to March 1, 2010 in excess of 20 percent of fleet's maximum horsepower in the past 12 months.

**c. Using carryover PM retrofit credit**—Accumulated carryover retrofit credit may be applied to meeting the retrofit requirements of section 2449.2(a)(2)(A)1. in a later year. The amount of carryover retrofit credit used to meet the retrofit requirements in any one year is subtracted from the carryover retrofit credit total available in subsequent years. The amount of actual retrofit plus the amount of carryover retrofit credit used must equal the minimum BACT retrofit rate required by section 2449.2(a)(2)(A)(1).

**3. Order of PM Retrofit**—No Level 2 VDECS may be counted toward the retrofit requirements in section 2449.2(a)(2)(A) until all engines in vehicles

older than 5 years for which the highest level VDECS available is a Level 3 VDECS have been retrofitted, except for specialty vehicles utilizing the exemption in section 2449.1(a)(2)(A)4.b. for which Level 2 is the highest level VDECS.

- 4. Exemptions**—A vehicle is exempt from the retrofit requirements in section 2449.2(a)(2)(A)1. if all vehicles in the fleet that do not qualify for an exemption under the following conditions have been retrofitted, and the vehicle meets one of the following conditions:
- a. On the date of compliance, the vehicle is less than 5 years old from the vehicle's date of manufacture,
  - b. There is no highest level VDECS available for the vehicle's engine (i.e., there is no Level 2 or 3 VDECS, or there is no Level 2 or 3 VDECS which can be used without impairing the safe operation of the vehicle as demonstrated per section 2449(e)(8)),
  - c. The vehicle's engine is equipped with an original equipment manufacturer diesel particulate filter that came new with the vehicle, or
  - d. The vehicle's engine has already been retrofitted with a Level 2 or 3 VDECS that was the highest level VDECS available at time of installation. An engine with a Level 2 VDECS that was not the highest level VDECS at time of installation does not qualify for this exemption.
- 5. Rounding**—If the horsepower required to be retrofit under section 2449.2(a)(2)(A) is less than half of the maximum power of the lowest horsepower engine in the fleet that is subject to the retrofit requirements, the next engine is not required to be retrofitted. However, on the next year's compliance date, any horsepower not retrofit due to this rounding provision must be added to the required retrofit under section 2449.2(a)(2)(A). Once the required horsepower to be retrofit equals or exceeds half of the maximum power of the next engine in the fleet that is subject to the retrofit requirements, the next engine must be retrofitted.

**(3) Adding Vehicles After the Final Target Date**—Commencing respectively on March 1, 2020 for large and medium fleets, and March 1, 2025 for small fleets, if a fleet owner adds a vehicle to his fleet and the engine did not come with an original equipment manufacturer diesel particulate filter, it must be equipped with the highest level VDECS within 3 months of acquisition.

Note: Authority cited: Sections 39002, 39515, 39516, 39600, 39601, 39602, 39650, 39656, 39658, 39659, 39665, 39667, 39674, 39675, 40000, 41511, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.1, 42402.2, 42402.4, 42403, 43000, 43000.5, 43013, 43016, 43018, and 43018.2, Health and Safety Code. Reference: Sections 39002, 39515, 39516, 39600, 39601, 39602, 39650, 39656, 39657, 39658, 39659, 39665, 39667, 39674, 39675, 40000, 41511, 42400, 42400.1, 42400.2, 42402.2, 43000, 43000.5, 43013, 43016, 43018, and 43018.2, Health and Safety Code.

## § ~~2449.3~~2449.2. Surplus Off-Road Opt-In for NOx (SOON) Program

### (a) Purpose

The purpose of this section is to achieve additional reductions of oxides of nitrogen (NOx) emissions from in-use off-road diesel-fueled vehicles in California. The reductions must be surplus to those that would otherwise be achieved through implementation of title 13, California Code of Regulations, sections 2449, and 2449.1 and 2449.2, “Regulation for In-Use Off-Road Diesel-Fueled Fleets-Vehicles” (Off-Road regulation).

### (b) Applicability

- (1) **District Applicability** - Section ~~2449.3~~2449.2 applies to any air quality management district or air pollution control district (jointly referred to hereafter as air district) whose governing board elects to opt into the provisions of this section as set forth in section ~~2449.3(f)~~2449.2(f) below.
- (2) **Fleet Applicability** – Section ~~2449.3~~2449.2 applies to a fleet that:
  - (A) Operates individual vehicles within the air district;
  - (B) As of January 1, 2008, on a statewide level, consisted of more than 40 percent Tier 0 and Tier 1 vehicles, and;
  - (C) Has a statewide fleet with maximum power (max hp) greater than 20,000 horsepower (hp), excluding the hp from engines in two-engine vehicles cranes and the hp from single engine cranes formerly subject to the Cargo Handling Equipment Regulation.

### (c) Definitions

The definitions in title 13, CCR, section 2449(c) apply, along with the following definitions:

- (1) **“Contract period”** means the period of time in which the vehicle participates in the program and is under contract to the air district to achieve additional emission reductions.
- (2) **“Operated within the district”** means a vehicle that currently operates within the boundaries of the air district and, during the three years immediately prior to the solicitation deadline, operated at least one hundred hours per year and operated more hours within the boundaries of the air district than in any other district.
- (3) **“Project”** means actions on one vehicle to reduce NOx emissions, such as retrofit, repower, or vehicle replacement, for which funding is requested.
- (4) **“Solicitation”** means a public announcement by the air district, requesting that fleets submit grant applications to the air district to participate in emission reduction incentive programs under this section.
- (5) **“Solicitation deadline”** means the last day, as provided in the solicitation, that an application may be physically received by the air district.

### (d) Requirements

(1) If an air district, having held a public hearing and opted into the SOON program and made the program mandatory per section 2449.3(e)(9)2449.2(e)(9), issues a solicitation for applications for funding under the SOON program, and if the solicitation so requires, a fleet that meets the applicability criteria of subsection (b) on the date of the solicitation must, before the solicitation deadline, do the following:

- (A) **Report to District and ARB** - File a report, in a format approved by the Executive Officer, of all information required under section 2449(g) with the air district and ARB on its statewide fleet and that part of the fleet that has operated within the air district, as defined in section (c)(2) above. If the solicitation deadline is before April 1, 2009, the fleet must provide information regarding the fleet as it existed on January 1, 2008. If the solicitation deadline is on or after April 1, 2009, the fleet must provide the information that was reported to ARB on the most recent ~~March~~April 1 reporting date.
- (B) **Calculate NO<sub>x</sub> fleet average index** - Determine the NO<sub>x</sub> fleet average index for vehicles that operated within the air district for the year in which the solicitation deadline occurs according to the formula in section 2449.1(a) (1)(A)1.
- (C) **Calculate NO<sub>x</sub> SOON fleet average target rate** - Determine the NO<sub>x</sub> SOON fleet average target rate for vehicles that operated within the air district for the year in which the solicitation deadline occurs according to the formula in section 2449.1(a) (1)(A)1, and using the SOON NO<sub>x</sub> targets set forth in Table 54 below. If there is no NO<sub>x</sub> SOON fleet average target rate for the year in which the solicitation deadline occurs, the nearest future target rate shouldshall be used.

**Table 5 – SOON Targets for Each Max Hp Group  
For Use in Calculating SOON Fleet Average Target Rates [g/bhp-hr]**

<b>Table 1: NO<sub>x</sub> Targets for each Max Hp Group [g/bhp-hr]</b>								
<b>Compliance Date:</b> <b>JanuaryMarch 1</b> <b>of Year</b>	<b>25-49 hp</b>	<b>50-74 hp</b>	<b>75-99 hp</b>	<b>100-174 hp</b>	<b>175-299 hp</b>	<b>300-599 hp</b>	<b>600-750 hp</b>	<b>&gt;750 hp</b>
2011	5.6	6.2	6.7	6.0	5.4	5.1	5.3	6.4
2014	4.9-5.8	5.1-6.5	5.2-7.1	4.7-6.4	2.8-3.9	2.7-3.7	2.7-3.7	4.2-5.3
2017	4.2-5.0	4.1-5.4	3.8-5.5	3.4-4.9	1.5-2.2	1.5-2.2	1.5-2.2	3.2-4.3
2020	3.5-4.1	3.2-4.2	2.4-3.4	2.2-3.1	0.9-1.4	0.9-1.3	0.9-1.4	2.6-3.4
2023	3.5-3.3	3.2-3.0	2.4-1.4	2.2-1.3	0.9-0.7	0.9-0.7	0.9-0.7	2.6-2.7

(D) **Apply for funding** – Except as provided in section 2449.3(d)(2)2449.2(d)(2) and 2449.3(e)(3)2449.2(e)(3) below, a fleet for which the NO<sub>x</sub> fleet average index, as calculated in section 2449.3(d)(1)(B)2449.2(d)(1)(B), is greater than the NO<sub>x</sub> SOON fleet average target rate, as calculated in section 2449.3(d)(1)(C)2449.2(d)(1)(C), must apply for SOON funding. The application submitted must be completed according to the guidelines and conditions established under the solicitation and, if the necessary NO<sub>x</sub> retrofits, repower, or vehicle replacements are available, must indicate how NO<sub>x</sub> retrofits, repowers, or vehicle replacements for which funding is requested will bring the NO<sub>x</sub> fleet average index for vehicles that operated

within the air district from where it would have been under compliance with section 2449.1 to less than or equal to the NOx SOON fleet average target rate calculated in section ~~2449.3(d)(1)(C)~~2449.2(d)(1)(C). The application must also indicate whether the fleet wants the application to be given high priority for SOON program funding by the district. The funding priority shall be determined under the air district guidelines developed per section ~~2449.3(f)(2)~~2449.2(f)(2).

**(E) Achieve NOx reductions** - Fleets that receive SOON program funding must complete the actions for which they were funded per the conditions of the solicitation. Fleets that do not receive requested SOON program funding are not required to take actions beyond compliance with Off-Road ~~the in-use off-road diesel vehicle regulation~~, as specified in sections 2449, and 2449.1, and 2449.2.

**(2) Fleets not meeting the applicability provisions** - A fleet that operates individual vehicles within the air district, but does not meet the applicability provisions of sections ~~2449.3(b)(2)(B)~~2449.2(b)(2)(B) and ~~2449.3(b)(2)(C)~~2449.2(b)(2)(C), are not required to file a report with the ARB or the air district under section ~~2449.3(d)(1)~~2449.2(d)(1). It is also not required to apply for funding under subsection (d)(1)(D), but may file a report with ARB or the air district under section ~~2449.3(d)(1)~~2449.2(d)(1) and apply for funding if the NOx fleet average index calculated for its fleet operating within the air district exceeds the NOx SOON fleet average target rate, and the fleet would like to qualify for funding. If the air district approves the fleet's application for funding, the fleet must achieve the NOx reductions as set forth in subsection (d)(1)(E). Participating in the SOON program in one year does not obligate the fleet to participate in subsequent years.

**(3) Air districts that opt into the SOON program** – Districts must prioritize requested projects based on the optimum NOx cost-effectiveness and on whether the fleet requesting the SOON program funding has requested high priority for SOON program funding. Air districts must report to ARB, in a format approved by the Executive Officer, all projects funded under the SOON program, including the equipment identification number of all vehicles funded.

**(e) Special Provisions –**

**(1) Accounting for the Off-Road regulation~~in-use off-road diesel vehicle rule~~ -**

(A) Reductions achieved through the SOON program must be surplus, over the entire contract period, to those required by the Off-Road regulation~~"Regulation for In-Use Off-Road Diesel Vehicles"~~, sections 2449 and ~~2449.1-2449.2~~ above.

(B) During the contract period, vehicles equipped with NOx retrofits, repowered with new engines, or that have been replaced using SOON program funding, cannot use this lower emission rate to calculate the fleet average index and target rate, NOx indices, PM indices, NOx target rates, PM target rates, and BACT turnover credit and retrofit credit under sections 2449.1 and 2449.2. Instead, for the purposes of calculating the fleet average index and target rate, NOx indices, PM indices, NOx target rates, PM target rates, and BACT turnover credit and retrofit credit under sections 2449.1 and 2449.2, these

vehicles must be reflected as if the actions taken under the SOON program did not occur. Actions taken using SOON program funding may be used for determining compliance under section 2449.1 and 2449.2 after the completion of the SOON program project contract period for that vehicle. For example, if a Tier 0 vehicle is repowered with a Tier 3 engine with SOON program funds, for purposes of compliance with sections 2449.1 and 2449.2, that vehicle is still treated as if it were a Tier 0 until the end of the contract period for the SOON program project.

- (C) If a fleet pays for a VDECS retrofit that is installed concurrently with a repower or vehicle replacement funded with SOON program funding, the fleet may count the VDECS retrofit toward determining compliance under section ~~2449.2~~2449.1. If a fleet's vehicle is repowered using SOON program funding with a Tier 4 engine that comes with an original engine manufacturer diesel particulate filter, and if the fleet pays a portion of the repower costs such that it offsets the cost of an equivalent VDECS retrofit diesel particulate filter, the fleet may count the original engine manufacturer diesel particulate filter retrofit towards determining compliance under section ~~2449.2~~2449.1.
- (2) **Turnover in section 2449.1** - A fleet may apply to the Executive Officer for an extension from the requirements in section 2449.1(b)(a)(2)(A) if, using the accounting provisions in section ~~2449.3(e)(1)~~2449.2(e)(1), section 2449.1(b)(a)(2)(A) would require, prior to ~~January~~March 1, 2014, a fleet to turn over vehicles that are Tier 2 or better. The exemptions in sections ~~2449.1(b)(2), (b)(3), and (b)(6)(a)(2)(A)4.a. and section 2449.1(a)(2)(A)5.~~ for vehicles less than 10 years old and Tier ~~2~~4 vehicles do not apply to the SOON program.
- (3) **Compliance plans** - In addition to a SOON program application, a fleet applying for SOON program funding must prepare and submit to the air district a compliance plan, in the format described in the district guidelines, laying out the actions it is required to take under sections 2449.1 and ~~2449.2~~ and the actions for which it is applying for funding under section ~~2449.3~~2449.2. Compliance plans must demonstrate that in the absence of any actions taken to satisfy section ~~2449.3~~2449.2, the fleet will be able to meet the requirements of sections ~~2449.1 and 2449.2~~ through the remaining actions set forth in the plan.
- (4) **Surplus** - Participation in the SOON program does not reduce the actions required for any fleet to comply with any requirements in the Off-Road regulation statewide in use off-road diesel vehicle regulation under sections 2449.1 and 2449.2.
- (5) **Tracking devices** - An air district may require any vehicle repowered, retrofitted, or replaced with incentive money through the SOON program to be equipped with a vehicle location device (per the air district's guidelines and conditions for receiving funding) to ensure that the vehicle is used in the air district for the required percent of operating hours.
- (6) **Particulate Matter Retrofits** -
- a. ~~The exemption from retrofit requirements for vehicles less than 5 years old in section 2449.2(a)(2)(A)4.a. does not apply to vehicles that are replaced or repowered with SOON program funds.~~
- (A)b. If a fleet has a vehicle that has been retrofitted within the last six years with a Level 2 or 3 VDECS, which was the highest level VDECS at the time of



retrofit, the fleet may but is not required to apply for SOON funding for that vehicle.

~~(B)e.~~ A fleet that receives SOON funding to repower or replace a vehicle is not required to install the highest level VDECS along with the repower or replacement.

**(7) Funding Guidelines** - Projects funded under the SOON program with Carl Moyer program money must be administered consistent with applicable Carl Moyer program guidelines, except as noted in section ~~2449.3(e)(6)~~2449.2(e)(6)(B). If a project is funded from other sources, the SOON program must be administered consistent with any applicable guidelines. The air district shall develop guidelines for administration of the SOON program, as provided in section ~~2449.3(f)(2)~~2449.2(f)(2).

**(8) Vehicles Scheduled to Leave District** – A fleet that has operated within the air district as defined in section ~~2449.3(e)(1)~~2449.2(c)(2) but that is planning to move vehicles out of the air district such that the vehicles will not operate enough hours in the air district to qualify for SOON funding may leave such vehicles out of the ~~NOx fleet average~~ index calculation in section ~~2449.3(d)(1)(B)~~2449.2(d)(1)(B), the ~~NOx SOON fleet average~~ target rate calculation in section ~~2449.3(d)(1)(C)~~2449.2(d)(1)(C), and the application for funding in section ~~2449.3(d)(1)(D)~~2449.2(d)(1)(D). The fleet must submit a statement under penalty of perjury to the district for each such vehicle stating its intent to move each such vehicle out of the district.

**(9) Voluntary or Mandatory Nature of SOON**- An air district, having held a public hearing and opted into this regulation, may issue a solicitation for applications for funding under the SOON program.

~~(A)a.~~ For fleets in the South Coast Air Quality Management District and San Joaquin Valley Air Pollution Control District, solicitations with a deadline before April 2, 2009, shall be voluntary. For solicitations with a deadline on or after April 2, 2009, the South Coast Air Quality Management District and San Joaquin Valley Air Pollution Control District may elect to make participation by fleets voluntary or mandatory.

~~(B)b.~~ In any district other than the South Coast Air Quality Management District or San Joaquin Valley Air Pollution Control District, for solicitations with a deadline before April 2, 2010, participation by fleets is voluntary. For solicitations with a deadline on or after April 2, 2010, the district may choose to make participation by fleets voluntary or mandatory.

~~(C)c.~~ The solicitation shall announce the air district's decision regarding voluntary or mandatory participation.

#### **(f) Local Air District Opt-In**

**(1)** To participate in the SOON program, an air district's governing board must hold a formally noticed public hearing, where public comment is taken, and, by majority vote, elect to opt into the program. As part of this hearing, for years when section ~~2449.3(e)(9)~~2449.2(e)(9) gives the district a choice between a voluntary and mandatory SOON program, the air district's governing board must decide whether participation by fleets is voluntary or mandatory.

**(2) District Guidelines** - An air district opting into section ~~2449.3~~2449.2 must develop, through a public process including a duly noticed public workshop and formally noticed public hearing, additional administrative provisions necessary to implement this section, including, but not limited to, funding guidelines (as required under section ~~2449.3(e)(7)~~2449.2(e)(7)), compliance planning requirements, and reporting and monitoring requirements. Funding guidelines may include limitations on the cost-effectiveness of projects that may be funded and must include the method used for prioritizing projects based on cost-effectiveness and whether applying fleets requested high priority for SOON program funding, and a description of any requirements on fleets that receive SOON funding to pay part of the SOON project cost. Compliance planning guidelines must indicate the format and length of compliance plans. Air district guidelines may include a pre-application process that collects vehicle data (model year, ~~horsepower~~horsepower, hours of use) and then requires full SOON project applications only for vehicles likely to receive funding.

**(3) ARB Approval of District Guidelines** - Before any guidelines, including administrative or funding guidelines, approved by an air district take effect, they must be approved by the Executive Officer. Air district staff shall submit proposed guidelines to the Executive Officer before they are acted on by the district's governing board. The Executive Officer will respond within 30 days with a description of any required changes to the proposed guidelines necessary for Executive Officer approval. In evaluating proposed air district guidelines, the Executive Officer shall consider, among other factors, the adequacy of cost-effectiveness criteria, whether fleet requests for high priority for SOON funding are given preference, and uniformity of district guidelines between air districts. After guidelines are adopted by a district's governing board, air district staff shall submit the adopted guidelines to the Executive Officer. The Executive Officer will respond within 30 days with approval or a description of any required changes to the guidelines.

~~**(4) ARB Authority** - ARB has sole authority to enforce the requirements of section 2449.3~~2449.2~~. The Executive Officer retains the authority to review any district's administration of section ~~2449.3~~2449.2 and to address any unforeseen circumstances or events.~~

Note: Authority cited: Sections 39002, 39515, 39516, 39600, 39601, 39602, 43000, 43000.5, 43013, 43016, and 43018, Health and Safety Code. Reference: Sections 39002, 39515, 39516, 39600, 39601, 39602, 39650, 39656, 39657, 39658, 39659, 39665, 39667, 43000, 43000.5, 43013, 43016, and 43018, Health and Safety Code.

## Appendix A –

Use the values in ~~th~~these tables unless engine is a Post-2007 Flexibility Engine, or unless the engine is an engine certified to on-road standards.

Engines certified to on-road standards ~~should~~shall use the standard to which the engine is certified. ~~Flexibility engines certified January 1, 2007 or later should~~shall use the emission standard to which the engine is certified. Engines certified to ~~FEL~~Family Emission Limits and flexibility engines certified before January 1, 2007, ~~should~~shall still use the emission factors in the table below.

Replacement engines produced per title 13, CCR, section 2423(j) ~~should~~shall use the engine model year of the engine replaced. For an engine certified to an emission standard lower than that shown in these tables for its model year, the emission standard to which the engine is certified may be used, provided that the certification Executive Order or certificate number is provided along with the initial and annual reporting required by section 2449(g)(1) and 2449(g)(2).

If the model year of an engine is unknown because it is missing a serial number, manufacturer's build code, and/or an engine family number, and the engine manufacturer or authorized representative is unable to determine the model year of the engine by examining the engine's build and components, such an engine shall be treated as a 1969 model year engine. If a manufacturer can bracket the model year of an engine (for example that an engine was built between 1987 and 1994) by examining the engine's build and components, the earliest date the engine could have been manufactured shall be used as the model year of that engine (in the example, 1987).

~~For engines that have been retrofit with VDECS, the PM Emission Factor is reduced 50 percent for a Level 2 VDECS, and 85 percent for a Level 3 VDECS; the NOx Emission Factor is reduced by whatever percentage NOx emission reductions are verified. The PM Emission Factor is not reduced for a Level 1 VDECS.~~

<b>PM Emissions Factors by Horsepower and Year (g/bhp-hr)</b>								
<b>Engine Model</b>	<b>Horsepower Group</b>							
<b>Year</b>	<b>25-49</b>	<b>50-74</b>	<b>75-99</b>	<b>100-174</b>	<b>175-299</b>	<b>300-599</b>	<b>600-750</b>	<b>Over 750</b>
<b>1900-1969</b>	0.950	1.200	1.200	1.100	1.100	0.950	0.950	0.950
<b>1970-1971</b>	0.950	1.200	1.200	0.940	0.940	0.810	0.810	0.810
<b>1972-1987</b>	0.950	1.200	1.200	0.780	0.780	0.680	0.680	0.680
<b>1988</b>	0.950	0.980	0.980	0.540	0.540	0.490	0.490	0.490
<b>1989-1995</b>	0.950	0.980	0.980	0.540	0.540	0.490	0.490	0.490
<b>1996</b>	0.950	0.980	0.980	0.540	0.40	0.40	0.40	0.500
<b>1997</b>	0.950	0.980	0.980	0.600	0.40	0.40	0.40	0.500
<b>1998</b>	0.950	1.090	1.090	0.600	0.40	0.40	0.40	0.500
<b>1999</b>	0.60	1.090	1.090	0.600	0.40	0.40	0.40	0.500
<b>2000</b>	0.60	1.090	1.090	0.600	0.40	0.40	0.40	0.40
<b>2001</b>	0.60	1.090	1.090	0.600	0.40	0.15	0.40	0.40
<b>2002</b>	0.60	1.090	1.090	0.600	0.40	0.15	0.15	0.40
<b>2003</b>	0.60	1.090	1.090	0.22	0.15	0.15	0.15	0.40
<b>2004</b>	0.45	0.30	0.30	0.22	0.15	0.15	0.15	0.40
<b>2005</b>	0.45	0.30	0.30	0.22	0.15	0.15	0.15	0.40
<b>2006</b>	0.45	0.30	0.30	0.22	0.15	0.15	0.15	0.15
<b>2007</b>	0.45	0.30	0.30	0.22	0.15	0.15	0.15	0.15
<b>2008</b>	0.22	0.22	0.30	0.22	0.15	0.15	0.15	0.15
<b>2009</b>	0.22	0.22	0.30	0.22	0.15	0.15	0.15	0.15
<b>2010</b>	0.22	0.22	0.30	0.22	0.15	0.15	0.15	0.15
<b>2011</b>	0.22	0.22	0.30	0.22	0.015	0.015	0.015	0.07
<b>2012</b>	0.22	0.22	0.015	0.015	0.015	0.015	0.015	0.07
<b>2013</b>	0.02	0.02	0.015	0.015	0.015	0.015	0.015	0.07
<b>2014</b>	0.02	0.02	0.015	0.015	0.015	0.015	0.015	0.07
<b>2015 and later</b>	0.02	0.02	0.015	0.015	0.015	0.015	0.015	0.03

<b>NO<sub>x</sub> Emissions Factors by Horsepower and Year (g/bhp-hr)</b>								
<b>Engine Model Year</b>	<b>Horsepower Group</b>							
	<b>25-49</b>	<b>50-74</b>	<b>75-99</b>	<b>100-174</b>	<b>175-299</b>	<b>300-599</b>	<b>600-750</b>	<b>Over 750</b>
<b>1900 – 1969</b>	7.2	14.8	14.8	15.9	15.9	15.2	15.2	15.2
<b>1970 – 1971</b>	7.2	14.8	14.8	14.8	14.8	14.1	14.1	14.1
<b>1972 – 1979</b>	7.2	14.8	14.8	13.6	13.6	13.0	13.0	13.0
<b>1980 – 1987</b>	7.2	14.8	14.8	12.5	12.5	11.9	11.9	11.9
<b>1988</b>	7.1	9.9	9.9	9.3	9.3	8.9	8.9	8.9
<b>1989 – 1995</b>	7.1	9.9	9.9	9.3	9.3	8.9	8.9	8.9
<b>1996</b>	7.1	9.9	9.9	9.3	6.9	6.9	6.9	8.9
<b>1997</b>	7.1	9.9	9.9	6.9	6.9	6.9	6.9	8.9
<b>1998</b>	7.1	6.9	6.9	6.9	6.9	6.9	6.9	8.9
<b>1999</b>	6.2	6.9	6.9	6.9	6.9	6.9	6.9	8.9
<b>2000</b>	6.2	6.9	6.9	6.9	6.9	6.9	6.9	6.9
<b>2001</b>	6.2	6.9	6.9	6.9	6.9	4.2	6.9	6.9
<b>2002</b>	6.2	6.9	6.9	6.9	6.9	4.2	4.2	6.9
<b>2003</b>	6.2	6.9	6.9	4.3	4.3	4.2	4.2	6.9
<b>2004</b>	4.9	4.9	4.9	4.3	4.3	4.2	4.2	6.9
<b>2005</b>	4.9	4.9	4.9	4.3	4.3	4.2	4.2	6.9
<b>2006</b>	4.9	4.9	4.9	4.3	2.6	2.6	2.6	4.2
<b>2007</b>	4.9	4.9	4.9	2.6	2.6	2.6	2.6	4.2
<b>2008</b>	4.9	3.0	3.0	2.6	2.6	2.6	2.6	4.2
<b>2009</b>	4.9	3.0	3.0	2.6	2.6	2.6	2.6	4.2
<b>2010</b>	4.9	3.0	3.0	2.6	2.6	2.6	2.6	4.2
<b>2011</b>	4.9	3.0	3.0	2.6	1.5	1.5	1.5	2.6
<b>2012</b>	4.9	3.0	2.5	2.5	1.5	1.5	1.5	2.6
<b>2013</b>	3.0	3.0	2.5	2.5	1.5	1.5	1.5	2.6
<b>2014</b>	3.0	3.0	2.5	2.5	0.3	0.3	0.3	2.6
<b>2015 and later</b>	3.0	3.0	0.3	0.3	0.3	0.3	0.3	2.6

# Final Regulation Order

## Regulation to Establish a Statewide Portable Equipment Registration Program

Amend sections 2451, 2452, 2453, 2455, 2456, 2458, 2459, 2460, 2461, and 2462 Title 13, California Code of Regulations to read as follows:

(Note: Proposed amendments to the regulation are identified below. The originally proposed language is shown in underline is used to indicate proposed additions. ~~Strikeout~~ is used to show proposed deletions from the regulation text.)

### Article 5. Portable Engine and Equipment Registration

#### § 2451. Applicability.

- (a) Registration under this regulation is voluntary for owners of portable engines or equipment units.
- (b) This regulation applies to portable engines and equipment units as defined in section 2452. Except as provided in paragraph (c) of this section, any portable engine or equipment unit may register under this regulation. Examples include, but are not limited to:
  - (1) portable equipment units driven solely by portable engines including confined and unconfined abrasive blasting, Portland concrete batch plants, sand and gravel screening, rock crushing, and unheated pavement recycling and crushing operations;
  - (2) consistent with section 209 (e) of the federal Clean Air Act, engines and associated equipment used in conjunction with the following types of portable operations: well drilling, service or work-over rigs; power generation, excluding cogeneration; pumps; compressors; diesel pile-driving hammers; welding; cranes; woodchippers; dredges; equipment necessary for the operation of portable engines and equipment units; and military tactical support equipment.
- (c) The following are not eligible for registration under this program:
  - (1) any engine used to propel mobile equipment or a motor vehicle of any kind as defined in section 2452 (aa)(1)(A);
  - (2) any engine or equipment unit not meeting the definition of portable as defined in section 2452 (dd) of this regulation;

- (3) ~~any engines, equipment units, and its associated engines~~ determined by the Executive Officer to qualify as part of a stationary source permitted by a district;
- (4) any engine or equipment unit subject to an applicable federal Maximum Achievable Control Technology standard, or National Emissions Standard for Hazardous Air Pollutants, or federal New Source Performance Standard, except for equipment units subject to 40 CFR Part 60 Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants);
- (5) any engine or equipment unit operating within the boundaries of the California Outer Continental Shelf (OCS). [Note: This shall not prevent statewide registration of portable engines and equipment units already permitted by a district for operation in the OCS. Such statewide registration shall only be valid for operation onshore and in State Territorial Waters (STW).];
- (6) any dredging operation in the Santa Barbara Harbor;
- (7) any dredging unit owned by a single port authority, harbor district, or similar agency in control of a harbor, and operated only within the same harbor;
- (8) generators used for power production into the grid, except to maintain grid stability during an emergency event or other unforeseen event that affects grid stability; and
- (9) generators used to provide primary or supplemental power to a building, facility, stationary source, or stationary equipment, except during unforeseen interruptions of electrical power from the serving utility, maintenance and repair operations, electrical upgrade operations including startup, shutdown, and testing that do not exceed 60 calendar days, operations where the voltage, frequency, or electrical current requirements can only be supplied by a portable generator, or remote operations where grid power is unavailable.

~~(d) — The Owner of any engine or equipment unit that loses eligibility for registration under this program shall apply for a permit with a district within 90 days of being notified of loss of eligibility. Registration shall remain valid and operation may continue under this article until the district grants or denies a permit or a registration for the engine or equipment unit.~~

(ed) In the event that the owner of an engine or equipment unit elects not to register under this program, the engine or equipment unit shall be subject to district permitting requirements pursuant to district regulations.

NOTE: Authority cited: Sections 39600, 39601, 41752, 41753, 41754, 41755, 43013(b) and 43018, Health and Safety Code. Reference: Sections 41750, 41751, 41752, 41753, 41754, and 41755, Health and Safety Code.

# Final Regulation Order

## Regulation to Establish a Statewide Portable Equipment Registration Program

Amend sections 2451, 2452, 2453, 2455, 2456, 2458, 2459, 2460, 2461, and 2462 Title 13, California Code of Regulations to read as follows:

(Note: Proposed amendments to the regulation are identified below. The originally proposed language is shown in underline is used to indicate proposed additions. ~~Strikeout~~ is used to show proposed deletions from the regulation text.)

### Article 5. Portable Engine and Equipment Registration

#### 2451. Purpose.

The purpose of this regulation is to establish a statewide registration program for portable engines and equipment.

This regulation shall apply to all portable engines and equipment that are used in California. It shall not apply to portable engines and equipment that are used in other states or countries.

(1) The registration program shall be administered by the Department of Industrial Relations. The Department shall establish rules and regulations to carry out the purposes of this regulation.

(2) The registration program shall be established in accordance with the provisions of this regulation. The registration program shall be established in accordance with the provisions of this regulation. The registration program shall be established in accordance with the provisions of this regulation.

#### 2452. Definitions.

(1) "Portable engine" means any internal combustion engine that is designed to be used in a portable manner.

(2) "Equipment" means any device or apparatus that is designed to be used in a portable manner.



**§ 2452. Definitions.**

(a) For the purposes of these regulations, the following definitions apply:

(1) ~~“Air Contaminant”~~ “Air Contaminant” shall have the same meaning as set out in section 39013 of the Health and Safety Code.

(2) ~~“ARB”~~ “ARB” means the California Air Resources Board.

(3) ~~“Certified Compression-Ignition Engine”~~ “Certified Compression-Ignition Engine” means an engine meeting the nonroad engine emission standards for compression-ignition engines, as set forth in Title 13 of the California Code of Regulations or 40 CFR Part 89 in effect at the time of application.

(4) ~~“Certified Spark-Ignition Engine”~~ “Certified Spark-Ignition Engine” means an engine meeting the nonroad engine emission standards for spark-ignition engines, as set forth in Title 13 of the California Code of Regulations or 40 CFR Part 1048 in effect at the time of application.

(5) ~~“Compression-Ignition (CI) Engine”~~ “Compression-Ignition (CI) Engine” means an internal combustion engine with operating characteristics significantly similar to the theoretical diesel combustion cycle. Compression-ignition engines usually control fuel supply instead of using a throttle to regulate power.

(6) ~~“Corresponding Onshore District”~~ “Corresponding Onshore District” means the district which has jurisdiction for the onshore area that is geographically closest to the engine or equipment unit.

(7) ~~“District”~~ “District” means an air pollution control district or air quality management district created or continued in existence pursuant to provisions of Part 3 (commencing with section 40000) of the California Health and Safety Code.

(8) ~~“Electrical Upgrade”~~ “Electrical Upgrade” means replacement or addition of electrical equipment and systems resulting in increased generation, transmission and/or distribution capacity.

(9) ~~“Emergency Event”~~ “Emergency Event” means any situation arising from sudden and reasonably unforeseen natural disaster such as earthquake, flood, fire, or other acts of God, or other unforeseen events beyond the control of the portable engine or equipment unit operator, its officers, employees, and contractors that threatens public health and safety and that requires the immediate temporary operation of portable engines or equipment units to help alleviate the threat to public health and safety.

- (j)(10) "~~Engine~~ Engine" means any piston driven internal combustion engine.
- (k)(11) "~~Equipment Unit~~ Equipment Unit" means equipment that emits PM<sub>10</sub> over and above that emitted from an associated engine.
- (l)(12) "~~Executive Officer~~ Executive Officer" means the Executive Officer of the California Air Resources Board or his/her designee.
- (m)(13) "~~Hazardous Air Pollutant (HAP)~~ Hazardous Air Pollutant (HAP)" means any air contaminant that is listed pursuant to section 112(b) of the federal Clean Air Act.
- (n)(14) "~~Home District~~ Home District" means the district designated by the responsible official as the district in which the registered engine or equipment unit resides most of the time. For registered engines or equipment units based out of California, the responsible official shall designate the home district based on where the registered engine or equipment unit is likely to be operated a majority of the time the registered engine or equipment unit is in California.
- (o)(15) "~~Identical Replacement~~ Identical Replacement" means a substitution due to mechanical breakdown of a registered portable engine or equipment unit with another portable engine or equipment unit that has the same manufacturer, type, model number, manufacturer's maximum rated capacity, and rated brake horsepower; and is intended to perform the same or similar function as the original portable engine or equipment unit; and has equal or lower emissions expressed as mass per unit time; and meets the emission ~~control technology~~ requirements of sections 2455 through 2457 of this article.
- (p)(16) "~~In-field Inspection~~ In-field Inspection" means an inspection that is conducted at the location that the portable engine or equipment unit is operated under normal load and conditions.
- (q)(17) "~~Location~~ Location" means any single site at a building, structure, facility, or installation.
- (r)(18) "~~Maximum Achievable Control Technology (MACT)~~ Maximum Achievable Control Technology (MACT)" means any federal requirement promulgated as part of 40 CFR Parts 61 and 63.
- (s)(19) "~~Maximum Rated Capacity~~ Maximum Rated Capacity" is the maximum throughput rating or volume capacity listed on the nameplate of the registered equipment unit as specified by the manufacturer.
- (t)(20) "~~Maximum Rated Horsepower (brake horsepower (bhp))~~ Maximum Rated Horsepower (brake horsepower (bhp))" is the maximum brake horsepower rating specified by the registered engine manufacturer and listed on the nameplate of the registered engine.

~~(u)~~(21) "~~Mechanical Breakdown~~ Mechanical Breakdown" means any failure of an engine's electrical system or mechanical parts that necessitates the removal of the registered engine from service.

~~(v)~~(22) "~~Modification~~ Modification" means any physical change to, change in method of operation of, or an addition to a registered engine or equipment unit, which may cause or result in an increase in the amount of any air contaminant emitted or the issuance of air contaminants not previously emitted. Routine maintenance and/or repair shall not be considered a physical change. Unless previously limited by an enforceable registration condition, a change in the method of operation shall not include:

- ~~(1)~~(A) an increase in the production rate, unless such increase will cause the maximum design capacity of the registered equipment unit to be exceeded;
- ~~(2)~~(B) an increase in the hours of operation;
- ~~(3)~~(C) a change of ownership; and
- ~~(4)~~(D) the movement of a registered engine or equipment unit from one location to another.

~~(w)~~(23) "~~New Nonroad Engine~~ New Nonroad Engine" means a nonroad engine, the equitable or legal title to which has never been transferred to an ultimate purchaser. If the equitable or legal title to an engine is not transferred to an ultimate purchaser until after the engine is placed into service, then the engine will no longer be new after it is placed into service. A nonroad engine is placed into service when it is used for its functional purposes. The term "ultimate purchaser" means, with respect to a new nonroad engine, the first person who purchases a new nonroad engine for purposes other than resale.

~~(x)~~(24) "~~New Source Performance Standard (NSPS)~~ New Source Performance Standard (NSPS)" means any federal requirement promulgated as part of 40 CFR Part 60.

~~(y)~~(25) "~~Non-field Inspection~~ Non-field Inspection" means an inspection that is either conducted at a location that is mutually acceptable to the district and the owner or operator or where the engine or equipment unit is stored and does not require operation of the engine or equipment unit for purposes of the inspection.

~~(aa)~~(26) "~~Nonroad Engine~~ Nonroad Engine" means:

~~(1)~~(A) Except as discussed in paragraph (2) of this definition, a nonroad engine is any engine:

- ~~(A)~~1. in or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function

(such as garden tractors, off-highway mobile cranes and bulldozers); or

(B)2. in or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers); or

(A)3. that, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

(2) An engine is not a nonroad engine if:

(A)1. the engine is used to propel a motor vehicle or a vehicle used solely for competition, or is subject to standards promulgated under section 202 of the federal Clean Air Act; or

(B)2. the engine is regulated by a federal New Source Performance Standard promulgated under section 111 of the federal Clean Air Act; or

(C)3. the engine otherwise included in paragraph (1)(C) of this definition remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. Any engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (at least two years) and that operates at that single location approximately three (or more) months each year.

(bb)(27) "~~Outer Continental Shelf (OCS)~~ Outer Continental Shelf (OCS)" shall have the meaning provided by section 2 of the Outer Continental Shelf Lands Act (43 U.S.C. Section 1331 et seq.).

(cc)(28) "~~Placard~~ Placard" means a visible indicator supplied by the Air Resources Board to indicate that an engine or equipment has been registered in the Portable Equipment Registration Program and is in addition to the registration identification device.

(dd)(29) "~~Portable~~ Portable" means designed and capable of being carried or moved from one location to another. Indicia of portability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. For the purposes of

this regulation, dredge engines on a boat or barge are considered portable. The engine or equipment unit is not portable if any of the following are true:

- (1) the engine or equipment unit or its replacement is attached to a foundation, or if not so attached, will reside at the same location for more than 12 consecutive months. The period during which the engine or equipment unit is maintained at a storage facility shall be excluded from the residency time determination. Any engine or equipment unit such as back-up or stand-by engines or equipment units, that replace engine(s) or equipment unit(s) at a location, and is intended to perform the same or similar function as the engine(s) or equipment unit(s) being replaced, will be included in calculating the consecutive time period. In that case, the cumulative time of all engine(s) or equipment unit(s), including the time between the removal of the original engine(s) or equipment unit(s) and installation of the replacement engine(s) or equipment unit(s), will be counted toward the consecutive time period; or
- (2) the engine or equipment unit remains or will reside at a location for less than 12 consecutive months if the engine or equipment unit is located at a seasonal source and operates during the full annual operating period of the seasonal source, where a seasonal source is a stationary source that remains in a single location on a permanent basis (at least two years) and that operates at that single location at least three months each year; or
- (3) the engine or equipment unit is moved from one location to another in an attempt to circumvent the portable residence time requirements.

~~(ee)~~(30) ~~“Prevention of Significant Deterioration (PSD) Prevention of Significant Deterioration (PSD)”~~ means any federal requirements contained in or promulgated pursuant to Part C of the federal Clean Air Act.

~~(ff)~~(31) ~~“Process Process”~~ means any air-contaminant-emitting activity associated with the operation of a registered engine or equipment unit.

~~(gg)~~(32) ~~“Project, for the purposes of onshore operation, Project, for the purposes of onshore operation.”~~ means the use of one or more registered engines or equipment units operated under the same or common ownership or control to perform a single activity.

~~(hh)~~(33) ~~“Project, for the purposes of State Territorial Waters (STW), Project, for the purposes of State Territorial Waters (STW).”~~ means the use of one or more registered engines and equipment units operating under the same or common ownership or control to perform any and all activities needed to fulfill specified contract work that is performed in STW. For the purposes of this definition, a contract means verbal or written commitments covering all operations necessary to complete construction, exploration, maintenance, or other work. Multiple or consecutive contracts may be considered one project if they are intended to perform activities in the same general area, the same parties are involved in the

contracts, or the time period specified in the contracts is determined by the Executive Officer to be sequential.

(ii)(34) ~~"Provider of Essential Public Service (PEPS)~~ Provider of Essential Public Service (PEPS)" means any privately-owned corporation or public agency that owns, operates, controls, or manages a line, plant, or system for the transportation of people or property, the transmission of telephone or telegraph messages, or the production, generation, transmission or furnishing of heat, light, water, power, or sanitation directly or indirectly to the public.

(jj)(35) ~~"Registration~~ Registration" means issuance of a certificate by the Executive Officer acknowledging expected compliance with the applicable requirements of this article, and the intent by the owner or operator to operate the engine or equipment unit within the requirements established by this article.

(kk)(36) ~~"Rental Business~~ Rental Business" means a business in which the principal use of its engines or equipment units is the rentings or leasings for profit of, registered engines or equipment units.

(ll)(37) ~~"Renter~~ Renter" means a person who rents and/or operates registered engines or equipment units not owned by that person.

(mm)(38) ~~"Resident Engine~~ Resident Engine " means either of the following:

- (1)(A) a portable engine that at the time of applying for registration, has a current, valid district permit or registration that was issued prior to January 1, 2006, or an engine that lost a permit to operate exemption through a formal district action. Moving an engine from a district that provides a permit to operate exemption to a district that requires a permit to operate or registration does not qualify for consideration as a resident engine; or
- (2)(B) a certified compression-ignition engine that operated in California at any time between March 1, 2004 and October 1, 2006. The responsible official shall provide sufficient documentation to prove the engine's residency to the satisfaction of the Executive Officer. Examples of adequate documentation include but are not limited to: tax records, purchase records, maintenance records, or usage records.

An engine permitted or registered by a district pursuant to Title 17 of the California Code of Regulations Section 93116.3(b)(6) is not a resident engine.

(nn)(39) ~~"Responsible Official~~ Responsible Official" refers to an individual employed by the company or public agency with the authority to certify that the registered engines or equipment units under his/her jurisdiction comply with applicable requirements of this regulation. A company or public agency may have more than one Responsible Official.

~~(oo)~~(40) "~~Spark-Ignition (SI) Engine~~ Spark-Ignition (SI) Engine" means an internal combustion engine with a spark plug (or other sparking device) with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark-ignition engines usually use a throttle instead of using fuel supply to control intake air flow to regulate power.

~~(pp)~~(41) "~~State Territorial Waters (STW)~~ State Territorial Waters (STW)" includes all of the following: an expanse of water that extends from the California coastline to 3 miles off-shore; a 3 mile wide belt around islands; and estuaries, rivers, and other inland waterways.

~~(qq)~~(42) "~~Statewide Registration Program~~ Statewide Registration Program" means the program for registration of portable engines and equipment units set out in this article.

~~(rr)~~(43) "~~Stationary Source~~ Stationary Source" means any building, structure, facility or installation which emits any air contaminant directly or as a fugitive emission. "Building," "structure," "facility," or "installation" includes all pollutant emitting activities which:

- ~~(1)~~(A) are under the same ownership or operation, or which are owned or operated by entities which are under common control;
- ~~(2)~~(B) belong to the same industrial grouping either by virtue of falling within the same two-digit standard industrial classification code or by virtue of being part of a common industrial process, manufacturing process, or connected process involving a common raw material; and
- ~~(3)~~(C) are located on one or more contiguous or adjacent properties.

[Note: For the purposes of this regulation a stationary source and nonroad engine are mutually exclusive.]

~~(ss)~~(44) "~~Storage~~ Storage" means a warehouse, enclosed yard, or other area established for the primary purpose of maintaining registered engines or equipment units when not in operation.

~~(tt)~~(45) "~~Tactical Support Equipment (TSE)~~ Tactical Support Equipment (TSE)" means equipment using a portable engine, including turbines, that meets military specifications, owned by the U.S. Department of Defense, the U.S. military services, or its allies, and used in combat, combat support, combat service support, tactical or relief operations, or training for such operations. Examples include, but are not limited to, internal combustion engines associated with portable generators, aircraft start carts, heaters and lighting carts.

~~(uu)~~(46) "~~Third-party Rental~~ Third-party Rental" means a non-rental business renting or leasing registered engines and/or equipment units to another party by written agreement.

~~(vv)~~(47) "~~Tier 1 Engine~~ Tier 1 Engine" means a certified compression-ignition engine according to the horsepower and model year as follows:

- ≥50 bhp and <100 bhp; 1998 through 2003
- ≥100 bhp and <175 bhp; 1997 through 2002
- ≥175 bhp and <300 bhp; 1996 through 2002
- ≥300 bhp and <600 bhp; 1996 through 2000
- ≥600 bhp and ≤750 bhp; 1996 through 2001
- >750 bhp; 2000 through 2005.

~~(ww)~~(48) "~~Tier 2 Engine~~ Tier 2 Engine" means a certified compression-ignition engine according to the horsepower and model year as follows:

- ≥50 bhp and <100 bhp; 2004 through 2007
- ≥100 bhp and <175 bhp; 2003 through 2006
- ≥175 bhp and <300 bhp; 2003 through 2005
- ≥300 bhp and <600 bhp; 2001 through 2005
- ≥600 bhp and ≤750 bhp; 2002 through 2005
- >750 bhp; 2006 through 2010.

~~(xx)~~ 49) "~~Transportable~~ Transportable" means the same as portable.

~~(yy)~~ 50) "~~U.S. EPA~~ U.S. EPA" means the United States Environmental Protection Agency.

~~(zz)~~ 51) "~~Vendor~~ Vendor" means a seller or supplier of portable engines or equipment units for use in California.

~~(aaa)~~52) "~~Volatile Organic Compound (VOC)~~ Volatile Organic Compound (VOC)" means any compound containing at least one atom of carbon except for the following exempt compounds: acetone, ethane, perchlorobenzotrifluoride (1-chloro-4-trifluoromethyl benzene), methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonates, methylene chloride (dichloromethane), methyl chloroform (1,1,1-trichloroethane), CFC-113 (trichlorotrifluoroethane), CFC-11 (trichlorofluoromethane), CFC-12 (dichlorodifluoromethane), CFC-22 (chlorodifluoromethane), CFC-23 (trifluoromethane), CFC-114 (dichlorotetrafluoroethane), CFC-115 (chloropentafluoroethane), HCFC-123 (dichlorotrifluoroethane), HFC-134a (tetrafluoroethane), HCFC-141b (dichlorofluoroethane), HCFC-142b (chlorodifluoroethane), HCFC-124 (chlorotetrafluoroethane), HFC-23 (trifluoromethane), HFC-134 (tetrafluoroethane), HFC-125 (pentafluoroethane), HFC-143a (trifluoroethane), HFC-152a (difluoroethane), cyclic, branched, or linear completely methylated siloxanes, the following classes of perfluorocarbons:

~~(1)~~(A) cyclic, branched, or linear, completely fluorinated alkanes;

~~(2)~~(B) cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;





# Final Regulation Order

## Regulation to Establish a Statewide Portable Equipment Registration Program

Amend sections 2451, 2452, 2453, 2455, 2456, 2458, 2459, 2460, 2461, and 2462 Title 13, California Code of Regulations to read as follows:

(Note: Proposed amendments to the regulation are identified below. The originally proposed language is shown in underline is used to indicate proposed additions. ~~Strikeout~~ is used to show proposed deletions from the regulation text.)

### Article 5. Portable Engine and Equipment Registration

#### 2451. Purpose.

The purpose of this regulation is to establish a statewide portable equipment registration program.

This regulation shall apply to all portable engines, portable generators, and portable air compressors that are used for commercial purposes and are subject to the requirements of this regulation.

(1) The registration fee for portable engines, portable generators, and portable air compressors shall be \$10 per year.

(2) The registration fee for portable engines, portable generators, and portable air compressors shall be \$10 per year, plus a \$5 processing fee.

#### 2452. Definitions.

(1) "Portable engine" means a self-contained internal combustion engine that is designed to be used for commercial purposes.

(2) "Portable generator" means a self-contained generator that is designed to be used for commercial purposes.

**§ 2453. Application Process.**

- (a) In order for an engine or equipment unit to be considered for registration by the Executive Officer, the engine or equipment unit must be portable as defined in section 2452 (dd) and meet all applicable requirements established in this article.
- (b) For purposes of registration under this article, an engine and the equipment unit it serves are considered to be separate emissions units and require separate applications.
- (c) For an identical replacement, an owner or operator of a registered portable engine or equipment unit is not required to complete a new application and may immediately operate the identical replacement. Except for TSE, the owner or operator shall notify the Executive Officer in writing within five calendar days of replacing the registered engine or equipment unit with an identical replacement. Notification shall include company name, responsible official, phone number, registration certificate number of the engine or equipment unit to be replaced; and make, model, rated brake horsepower, serial number of the identical replacement, description of the mechanical breakdown; and applicable fees as required in section 2461. Misrepresentation of engine or equipment unit information or the failure to meet the requirements of this regulation shall be deemed a violation of this article.
- (d) The Executive Officer shall inform the applicant, in writing, if the application is complete or deficient, within 30 days of receipt of an application. If deemed deficient, the Executive Officer shall identify the specific information required to make the application complete.
- (e) The Executive Officer shall issue or deny registration within 90 days of receipt of a complete application.
- (f) Upon finding that an engine or equipment unit meets the requirements of this article, the Executive Officer shall issue a registration for the engine or equipment unit. The Executive Officer shall notify the applicant in writing that the engine or equipment unit has been registered. The notification shall include a registration

certificate, any conditions to ensure compliance with State and federal requirements, and a registration identification device for each engine or equipment unit registered pursuant to this regulation. Except for TSE, the registration identification device shall be affixed on the engine or equipment unit at all times, and the registration certificate including operating conditions shall be kept on the immediate premises with the engine or equipment at all times and made accessible to the Executive Officer or district upon request. Failure to properly maintain the registration identification device shall be deemed a violation of this article.

- (g) Except for TSE, each application for registration and the appropriate fee(s) as specified in section 2461, shall be submitted in a format approved by the Executive Officer and include, at a minimum, the following information:
  - (1) indication of general nature of business (e.g., rental business, etc.);
  - (2) the name of applicant, including mailing address and telephone number;
  - (3) a brief description of typical engine or equipment-unit use;
  - (4) detailed description, including engine or equipment-unit make, model, manufacture year (for portable engines only), rated brake horsepower, throughput, capacity, emission control equipment, and serial number;
  - (5) necessary engineering data, emissions test data, or manufacturer's emissions data to demonstrate compliance with the requirements as specified in sections 2455, 2456, and 2457;
  - (6) for resident engines, a copy of either a current permit to operate that was granted by a district, or documentation as described in section 2452 ~~(mm)~~ (38); and
  - (7) the printed name and signature of the responsible official and date of the signature.
  
- (h) For TSE, application for registration and the appropriate fee(s) as specified in section 2461, shall be submitted in a format approved by the Executive Officer and include, at a minimum, the following information:
  - (1) the name of applicant, including mailing address and telephone number;
  - (2) a brief description of typical engine or equipment-unit use;
  - (3) engine or equipment-unit description, including type and rated brake horsepower; and
  - (4) the printed name and signature of the responsible official and date of the signature.
  
- (i) All registered engines and equipment units shall have a designated home district as defined in section 2452 (n) according to the following:
  - (1) Owners holding valid registration(s) prior to the effective date shall designate in writing to the Executive Officer a home district within 90 days of the effective date of this regulation. The Executive Officer shall

- designate the home district for any and all registered engines and equipment units for existing registration program participants that fail to designate a home district;
- (2) a home district shall be designated on each application for initial registration of an engine or equipment unit; and
  - (3) except for registered engines or equipment units owned by a rental business or involved in a third part rental, if the engine or equipment unit, based on averaging of annual operation in each district from the three annual reports submitted during the 3 year registration cycle, operated the largest percentage of the time in a district other than the designated home district, the owner shall change the home district designation at the time of renewal. The change is not required if the difference between the home district operation percentage and the district with the largest operating percentage is 5 percent or less.
- (j) Engines or equipment units owned and operated for the primary purpose of rental by a rental business shall be identified as rental at the time of application for registration and shall be issued a registration specific to the rental business requirements of this article. Misrepresentation of portable engine or equipment unit use in an attempt to qualify under the rental business definition shall be deemed a violation of this article.
- (k) New applications for non-operational engines or equipment units will not be accepted by the Executive Officer.
- (l) Once registration is issued by the Executive Officer, district permits or registrations for engines or equipment units registered in the Statewide Registration Program are preempted by the statewide registration and are, therefore, considered null and void, except for the following circumstances where a district permit shall be required:
- (1) engines or equipment units used in a project(s) operating in the OCS. The requirements of the district permit or registration apply to the registered engine or equipment unit while operating at the project(s) in the OCS; or
  - (2) engines or equipment units used in a project(s) operating in both the OCS and STW. The requirements of the district permit or registration apply to the registered engine or equipment unit while operating at the project(s) in the OCS and STW; or
  - (3) at STW project(s) that trigger district emission offset thresholds; or
  - (4) at any specific location where statewide registration is not valid. The owner of the engine or equipment unit shall obtain a district permit or registration for the location(s) where the statewide registration is not valid; or
  - (5) at any location where an engine or equipment unit that has been determined to cause a public nuisance as defined in Health and Safety Code Section 41700.

Under no circumstances shall a portable engine or equipment unit be operated under both statewide registration and a district permit at any specific location. Where both a district permit for operation at a specific location and statewide registration have been issued for an engine or equipment unit, the terms of the district permit shall take precedence at that location.

- (m) When ownership of a registered engine or equipment unit changes, the new owner shall submit a change of ownership application. This application shall be filed within 30 days of the change of ownership. During the 30 day period the new owner is authorized to operate the registered engine or equipment unit. If an application is not received within 30 days, the engine or equipment unit may not operate and the existing registration is not valid for the new owner until the application has been filed and all applicable fees have been paid. Registration will be reissued to the new owner after a complete application has been approved by the Executive Officer.
- (n) Except for TSE, a placard shall be required for every engine or equipment unit registered in the Statewide Registration Program. The placard shall be affixed on the registered engine or equipment unit at all times so that it may be easily viewed from a distance. Placards shall be purchased at the time of the first renewal or at the time of initial registration, whichever occurs first. Failure to properly maintain the placard shall be deemed a violation of this article.

NOTE: Authority cited: Sections 39600, 39601, 41752, 41753, 41754, 41755, 43013(b) and 43018, Health and Safety Code. Reference: Sections 41750, 41751, 41752, 41753, 41754, and 41755, Health and Safety Code.

#### § 2455. General Requirements.

~~(a) The emissions from engines or equipment units registered under this article shall not, in the aggregate, interfere with the attainment or maintenance of any California or federal ambient air quality standards. The emissions from one or more registered engines or equipment units, exclusive of background concentration, shall not cause an exceedance of any ambient air quality standard. This paragraph shall not be construed as requiring operators of registered engines or equipment units to provide emission offsets for engines or equipment units registered under this article.~~

~~(b) Engines or equipment units registered under this article shall comply with article 1, chapter 3, part 4, division 26 of the California Health and Safety Code, commencing with section 41700.~~

(c) Except for engines or equipment units permitted or registered by a district in which an emergency event occurs, an engine or equipment unit operated during an emergency event as defined in section 2452 (i) of this article, is considered

# Final Regulation Order

## Regulation to Establish a Statewide Portable Equipment Registration Program

Amend sections 2451, 2452, 2453, 2455, 2456, 2458, 2459, 2460, 2461, and 2462 Title 13, California Code of Regulations to read as follows:

(Note: Proposed amendments to the regulation are identified below. The originally proposed language is shown in underline is used to indicate proposed additions. ~~Strikeout~~ is used to show proposed deletions from the regulation text.)

### Article 5. Portable Engine and Equipment Registration

#### 2451. Purpose.

The purpose of this regulation is to establish a statewide registration program for portable engines and equipment.

This regulation shall apply to all portable engines and equipment that are used in California. It shall not apply to portable engines and equipment that are used in other states or countries.

(1) The registration program shall be administered by the Department of Industrial Relations. The registration program shall be subject to the provisions of the California Administrative Code.

(2) The registration program shall be subject to the provisions of the California Administrative Code. The registration program shall be subject to the provisions of the California Administrative Code.

#### 2452. Definitions.

(1) "Portable engine" means a self-contained internal combustion engine that is designed to be used in a portable manner.

(2) "Equipment" means any device or apparatus that is used in conjunction with a portable engine.

**§ 2455. General Requirements.**

- (c) Except for engines or equipment units permitted or registered by a district in which an emergency event occurs, an engine or equipment unit operated during an emergency event as defined in section 2452 (i) of this article, is considered





# Final Regulation Order

## Regulation to Establish a Statewide Portable Equipment Registration Program

Amend sections 2451, 2452, 2453, 2455, 2456, 2458, 2459, 2460, 2461, and 2462 Title 13, California Code of Regulations to read as follows:

(Note: Proposed amendments to the regulation are identified below. The originally proposed language is shown in underline is used to indicate proposed additions. ~~Strikeout~~ is used to show proposed deletions from the regulation text.)

### Article 5. Portable Engine and Equipment Registration

#### 2451. Purpose.

The purpose of this regulation is to establish a statewide portable engine and equipment registration program.

This regulation shall apply to all portable engines and equipment that are used in California. The purpose of this regulation is to establish a statewide portable engine and equipment registration program.

(1) The registration program shall be administered by the Department of Industrial Relations, which shall have the authority to issue, suspend, and revoke registration certificates, and to impose penalties for non-compliance with the provisions of this regulation.

(2) The registration program shall be administered by the Department of Industrial Relations, which shall have the authority to issue, suspend, and revoke registration certificates, and to impose penalties for non-compliance with the provisions of this regulation.

#### 2452. Definitions.

(1) "Portable engine" means any internal combustion engine that is designed to be used in a portable manner.

(2) "Equipment" means any piece of machinery or equipment that is designed to be used in a portable manner.

**§ 2456. Engine Requirements.**

~~(a) For TSE, no air contaminant shall be discharged into the atmosphere, other than uncombined water vapor, for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines, or of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke designated as No. 2 on the Ringelmann Chart. No other requirements of this section are applicable to TSE.~~

(b) Registered diesel pile-driving hammers shall comply with the applicable provisions of section 41701.5 of the California Health and Safety Code and are otherwise exempt from further requirements of this section.

- (c) To be registered in the Statewide Registration Program, a registered engine rated less than 50 brake horsepower shall be a certified compression-ignition engine or a certified spark-ignition engine, unless no emission standards exist for that brake horsepower and year of manufacture. In that event, the engine shall comply with the applicable daily and annual emission limits contained in section 2456 (d)(6) of this article. No other requirements of this section are applicable to portable engines rated less than 50 brake horsepower.
- (d) After January 1, 2006, engines rated equal to, or greater than 50 bhp registered under this article shall:
  - (1) be certified compression-ignition engines or certified spark-ignition engines that meet the most stringent emissions standard in effect for the applicable horsepower range at the time the application is submitted by the responsible official. Spark-ignition engines that are not certified spark-ignition engines may be registered if they meet the emission standards in Table 1. Subsection (d)(1) does not apply to certified compression-ignition engines built under the flexibility provisions listed in 40 CFR part 89.102, engines that are resident engines, changes of ownership, or engines that meet the requirements of Title 17 of the California Code of Regulations sections 93116.3(b)(7), ~~93116.3(b)(8)~~, or 93116.3.1.
  - (2) meet all applicable requirements in Title 17 of the California Code of Regulations commencing with section 93116;
  - ~~(3) use only fuels meeting the standards for California motor vehicle fuels as set forth in chapter 5, division 3, Title 13 of the California Code of Regulations, commencing with section 2250, or other fuels and/or additives that have been verified through the Verification Procedure for In-Use Strategies to Control Emissions from Diesel Engines;~~
  - (4) not exceed particulate matter emissions concentration of 0.1 grain per standard dry cubic feet corrected to 12 percent CO<sub>2</sub>. This provision does not apply to certified compression-ignition engines, certified spark-ignition engines, or any spark-ignition engine meeting Table 1 requirements;
  - ~~(5) not discharge air contaminants into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as or darker than Ringelmann 1 or equivalent 20 percent opacity; and~~
  - (6) not exceed the following emission limits:
    - (A) 550 pounds per day per engine of carbon monoxide (CO);
    - (B) 150 pounds per day per engine of particulate matter less than 10 microns (PM<sub>10</sub>);
    - (C) for registered engines operating onshore, 10 tons for each pollutant per district per year per engine for NO<sub>x</sub>, SO<sub>x</sub>, VOC, PM<sub>10</sub>, and CO in nonattainment areas; and
    - ~~(D) for registered engines operating within STW;~~

~~(1)1. the offset requirements of the corresponding onshore district apply. Authorization from the corresponding onshore district is required prior to operating within STW. If authorization is in the form of a current district permit, the terms and conditions of the district permit supersede the requirements of the statewide registration for the project, except that the most stringent of the technology and emission concentration limits required by the district permit or statewide registration are applicable. If the registered engine does not have a current district permit, the terms and conditions of the statewide registration apply, and the corresponding onshore district may require offsets pursuant to district rules and regulations. The requirement for district offsets shall not apply to the owner or operator of an engine(s) registered in the statewide registration program when the engine(s) is operated at a stationary source permitted by the district; and~~

~~(2)2. the corresponding onshore district may perform an ambient air quality impact analysis (AQIA) for the proposed project prior to granting authorization. The owner or operator of engine(s) registered in the statewide registration program shall be required, at the request of the district, to submit any information deemed by the district to be necessary for performing the AQIA. Statewide registration shall not be valid at any location where the AQIA demonstrates a potential violation of an ambient air quality standard.~~

~~(E) for registered engines operating in the South Coast Air Quality Management District (SCAQMD), 100 pounds nitrogen oxides (NOx) per project per day [An owner may substitute SCAQMD permit or registration limits in effect on or before September 17, 1997 (optional)];~~

~~(F) 100 pounds NOx per registered engine per day, except in SCAQMD where the limit is 100 pounds NOx per project per day.~~

- (7) In lieu of (6)(E) and (6)(F) above, operation of a registered new nonroad engine rated at 750 brake horsepower or greater for which a federal or California standard pursuant to 40 CFR Part 89 or Title 13 of the California Code of Regulations has not yet become effective, shall not exceed 12 hours per day.
- (8) For registered engines that operate in both STW and onshore, the 10 tons per district per year per engine limit in (6)(C) above shall only apply onshore.
- (9) For certified compression-ignition engines, certified spark-ignition engines, or any spark-ignition engine meeting Table 1 requirements, the daily and annual emission limitations in section 6 above shall not apply.

- (10) Effective January 1, 2010, all registered spark-ignition engines rated at 50 brake horsepower or greater shall be certified spark-ignition engines or shall meet Table 1 requirements. For those spark ignition engines that are not certified spark-ignition engines or do not meet Table 1 requirements, the registration shall expire on December 31, 2009 and the engine will not be allowed to operate under the authority of this regulation.
- (e) All registered engines shall be equipped with a functioning non-resettable hour meter, fuel meter or other operation tracking device approved by the Executive Officer. Engines registered prior to the effective date of this regulation, that are not equipped with a functional non-resettable hour meter, fuel meter or other operation tracking device shall install one and notify ARB in writing within 6 months of the effective date of this regulation.
- (f) Registered TSE is exempt from district New Source Review and Title V programs, including any offset requirements. Further, emissions from registered TSE shall not be included in Title V or New Source Review applicability determinations.

NOTE: Authority cited: Sections 39600, 39601, 41752, 41753, 41754, 41755, 43013(b) and 43018, Health and Safety Code. Reference: Sections 41750, 41751, 41752, 41753, 41754, and 41755, Health and Safety Code.

Table 1 Spark-ignition Engine Requirements\*

<i>Pollutant Emission Limits</i>		
<b><i>NO<sub>x</sub>**</i></b>	<b><i>VOC**</i></b>	<b><i>CO**</i></b>
80 ppm <sub>dv</sub> NO <sub>x</sub> (1.5 g/bhp-hr)	240 ppm <sub>dv</sub> VOC (1.5 g/bhp-hr)	176 ppm <sub>dv</sub> CO (2.0 g/bhp-hr)

\* These requirements are in addition to requirements of section 2455 and 2456.  
 \*\* For the purpose of compliance with this article, ppm<sub>dv</sub> is parts per million @ 15 percent oxygen averaged over 15 consecutive minutes. Limits of ppm<sub>dv</sub> are the approximate equivalent to the stated grams per brake horsepower hour limit based on assuming the engine is 24.2 percent efficient.

# Final Regulation Order

## Regulation to Establish a Statewide Portable Equipment Registration Program

Amend sections 2451, 2452, 2453, 2455, 2456, 2458, 2459, 2460, 2461, and 2462 Title 13, California Code of Regulations to read as follows:

(Note: Proposed amendments to the regulation are identified below. The originally proposed language is shown in underline is used to indicate proposed additions. ~~Strikeout~~ is used to show proposed deletions from the regulation text.)

### Article 5. Portable Engine and Equipment Registration

#### 2451. Purpose.

The purpose of this regulation is to establish a statewide portable equipment registration program.

This regulation shall apply to all portable engines, portable generators, and portable power tools that are used in California and that are subject to the requirements of this regulation.

(1) The registration fee for portable engines, portable generators, and portable power tools shall be \$10.00 per year.

(2) The registration fee for portable engines, portable generators, and portable power tools shall be \$10.00 per year, plus a \$5.00 processing fee. The fee shall be paid to the Department of Industrial Relations, Bureau of Occupational Safety and Health, 1400 Franklin Street, Sacramento, California 95834.

#### 2452. Definitions.

(1) "Portable engine" means a self-contained internal combustion engine that is designed to be used in a portable manner.

(2) "Portable generator" means a self-contained generator that is designed to be used in a portable manner.

**§ 2458. Recordkeeping and Reporting.**

- (a) Except for registered engines owned by a rental business, used in a third-party rental, operated by a PEPS, or TSE, the owner of registered engines, including engines otherwise preempted under section 209 (e) of the federal Clean Air Act, or registered equipment units shall maintain records of operation of each registered engine and equipment unit. Recordkeeping for engines not previously required to maintain records shall begin upon the effective date of the regulation or January 1, 2007, which ever is later. For engines not previously required to



have an hour meter, fuel meter or other device approved by the Executive Officer, the owner or operator shall record hours of operation until the hour meter, fuel meter or other device approved by the Executive Officer has been installed. The records shall be maintained at a central place of business for five years, and made accessible to the Executive Officer or districts upon request. Records shall be maintained in a format approved by the Executive Officer and include, at a minimum, all of the following:

- (1) engine or equipment unit registration number;
  - (2) recordings from an hour meter, fuel meter, or other device approved by the Executive Officer, and the corresponding dates of the recordings for each registered engine or equipment unit based on the following:
    - (A) for each project as defined in 2452 (gg) or (hh), readings shall be recorded prior to the commencement of operation and at the completion of the project; or
    - (B) for ongoing operation of a registered engine or equipment unit at multiple locations within a stationary source, readings shall be recorded at the beginning and end of each calendar week; or
    - (C) for each location, readings shall be recorded prior to commencement of operation and upon completion of operation at that location.
  - (3) For registered engines and equipment units subject to a daily operational limitation, daily records of either hours of operation, fuel usage, or process throughput as applicable.
  - (4) For equipment units subject to the requirements of section 2457(b)(3), daily throughput shall be the sum of measurements of material introduced into the equipment unit. These measurements shall be taken at the initial loading point(s) of the equipment unit.
  - (5) recordings from an hour meter, fuel meter, or other device approved by the Executive Officer and the corresponding dates of the recordings any time an engine or equipment unit is undergoing service, repair, or maintenance; and
  - (6) for each start and stop reading specified in (2) and (3) above, the location identified by district, county, or other indicator (i.e., street address, UTM coordinates, etc.)
- (b) A rental business or the owner of a registered engine or equipment unit involved in a third party rental, shall maintain records for each rental or lease transaction. The written rental or lease agreement shall be kept onsite with the registered engine or equipment unit at all times. Recordkeeping for registered engines not previously required to maintain records shall begin upon the effective date of the regulation or January 1, 2007, whichever is later. For registered engines not previously required to have an hour meter, fuel meter or other device approved by the Executive Officer, the owner or operator shall record hours of operation

until the hour meter, fuel meter or other device approved by the Executive Officer has been installed. The owner shall provide each person who rents a registered engine or equipment unit with a written copy of applicable requirements of this article, including recordkeeping and notification requirements, as a part of the agreement. The records, including written acknowledgment by each renter of the registered engine or equipment unit of having received the above information, shall be maintained by the rental business or the owner of the registered engine or equipment unit involved in a third-party rental at a central location for five years, and made accessible to the Executive Officer or districts upon request. Records shall be maintained in a format approved by the Executive Officer and include, at a minimum, for each rental engine all of the following:

- (1) registered engine registration number;
  - (2) dates for the start and end of the rental transaction;
  - (3) hours of operation for each rental period including the hour meter reading at the start of the rental transaction and the hour meter reading at the end of the rental transaction; and
  - (4) location of use (by district, county or other indicator (i.e., street address, UTM coordinates, etc.)).
- (c) For TSE, each military installation shall provide the Executive Officer an annual report, in a format approved by the Executive Officer, within 60 days after the end of each calendar year. The report shall include the number, type, and rating of registered TSE at each installation as of December 31 of that calendar year, and be accompanied by the applicable fees pursuant to section 2461. Any variation of registered TSE to actual TSE shall be accounted for in this annual report, and the Executive Officer shall issue an updated TSE list accordingly. A renewal registration will be issued with the updated TSE list every three years according to expiration date.
- (d) For each registered engine subject to the requirements of Title 17 California Code of Regulations section 93116, the owner shall keep records and submit reports in accordance with Title 17 California Code of Regulations section 93116.4.
- (e) Except for registered engines or equipment units owned by a rental business, used in a third-party rental, operated by a PEPS or TSE, the owner of a registered engine or equipment unit shall provide the Executive Officer an annual report signed by the responsible official, in a format approved by the Executive Officer, by March 1 of each calendar year containing all of the following information:
- (1) the reporting year;
  - (2) the registration number of each registered engine and/or equipment unit;

- (3) for registered engines, quarterly summaries for each district or county the total fuel usage in gallons per quarter, or total hours of operation per quarter, for each registered engine; and
  - (4) for registered equipment units, quarterly summaries for each district or county in which the registered equipment unit was operated and the total process weight or throughput.
- (f) The owner of a registered engine or equipment unit owned by a rental business or used in a third-party rental transaction shall provide the Executive Officer an annual report signed by the responsible official, in a format approved by the Executive Officer, by March 1 of each calendar year containing all of the following information:
- (1) the reporting year;
  - (2) the registration number of each registered engine and/or equipment unit;
  - (3) total hours of operation for the reporting year for each registered engine based on, and including, beginning and ending annual hour meter readings and dates upon which the total hours of annual operation calculation is based;
  - (4) list of all counties in which the registered engine operated in during the reporting year as reported by the entity(ies) that operated the registered engine;
  - (5) estimate of the percentage of total hours for each engine operated in each of the counties identified in (4) above; and
  - (6) for registered equipment units, quarterly and annual summaries for each district or county in which the registered equipment unit was operated and the total process weight or throughput.
- (g) the owner or operator of a registered engine or equipment unit used by a PEPS shall provide the Executive Officer an annual report, in a format approved by the Executive Officer, by March 1st of each calendar year containing all of the following information:
- (1) the reporting year;
  - (2) the registration number of each registered engine and/or equipment unit;
  - (3) total hours of operation; and
  - (4) estimate of the percentage of hours or fuel usage for the three counties in which the registered engine or equipment unit operated the most.
- (h) Records requests made by a district or Executive Officer shall be made to the responsible official. The responsible official shall provide the requested records within 30 days from receipt of the request. Failure to provide the records by the specified date shall be deemed a violation of this article.

- (i) Each district shall provide the Executive Officer with an annual report, in a format approved by the Executive Officer, by March 31 following the year in which the information was collected containing all of the following information:
  - (1) the number of portable engines and equipment units inspected;
  - (2) the number of portable engines and/or equipment units found operating without valid district permits or statewide registrations;
  - (3) the number of registered engines and equipment units inspected; and
  - (4) summary of results of inspections.
  
- (j) Vendors selling new portable engines and/or equipment units in California shall:
  - (1) notify the buyer about this regulation; and
  - (2) on a monthly basis submit to the Executive Officer the number of portable engines and/or portable equipment units sold by the vendor for use in California including: the name, address, and contact information of the purchaser, and description of the engine and/or equipment unit including make, model, and engine family name.

NOTE: Authority cited: Sections 39600, 39601, 41752, 41753, 41754, 41755, 43013(b) and 43018, Health and Safety Code. Reference: Sections 41750, 41751, 41752, 41753, 41754, and 41755, Health and Safety Code.

# Final Regulation Order

## Regulation to Establish a Statewide Portable Equipment Registration Program

Amend sections 2451, 2452, 2453, 2455, 2456, 2458, 2459, 2460, 2461, and 2462 Title 13, California Code of Regulations to read as follows:

(Note: Proposed amendments to the regulation are identified below. The originally proposed language is shown in underline is used to indicate proposed additions. ~~Strikeout~~ is used to show proposed deletions from the regulation text.)

### Article 5. Portable Engine and Equipment Registration

#### 2451. Purpose.

The purpose of this regulation is to establish a statewide portable equipment registration program.

The registration program shall require the registration of all portable equipment that is used in the state for the purpose of generating, transmitting, or receiving radio frequency energy.

The registration program shall require the registration of all portable equipment that is used in the state for the purpose of generating, transmitting, or receiving radio frequency energy.

The registration program shall require the registration of all portable equipment that is used in the state for the purpose of generating, transmitting, or receiving radio frequency energy.

#### 2452. Definitions.

For purposes of this regulation, the following definitions shall apply:

(a) "Portable equipment" means any device that is used in the state for the purpose of generating, transmitting, or receiving radio frequency energy.

**§ 2459. Notification.**

- (a) Except as listed in subsection (d) of this section, if a registered equipment unit will be at a location for more than five days, the owner or operator of that registered equipment unit, shall notify the district in writing in a format approved by the Executive Officer, within two working days of commencing operations in that district. If the registered equipment unit is to be moved to different locations within the same district, the owner or operator shall be subject to the notification requirements above, unless the owner or operator and the district, by mutual agreement, arrange alternative notification requirements on a case-by-case basis. The notification shall include all of the following:
  - (1) the registration number of the registered equipment unit;
  - (2) the name and phone number of the responsible official or renter with information concerning the locations where the registered equipment unit will be operated within the district; and
  - (3) estimated time the registered equipment unit will be located in the district.
  
- (b) If the district has not been notified as required in section 2459(a) above, because the owner or operator did not reasonably expect the duration of operation to trigger the notification requirement in section 2459(a) above, the owner or operator shall notify the district, in a format approved by the Executive Officer,

within 12 hours of determining the registered equipment unit will be operating at a location more than five days.

- (c) Owners and operators of TSE are not subject to the notification requirements of this section 2459.
- (d) For STW projects, the owner or operator of a registered engine or registered equipment unit shall notify the corresponding onshore district in writing, in a format approved by the Executive Officer at least 14 days in advance of commencing operations in that district. The notification shall include all of the following:
  - (1) the registration number of the registered engine or equipment unit;
  - (2) the name and phone number of the responsible official with information concerning the locations where the registered engine or equipment unit will be operated within the district;
  - (3) estimated time the registered engine(s) or equipment unit(s) will be located in the district; and
  - (4) calculations showing the estimation of actual emissions expected for the project.
- (e) Except as listed in section 2459(d) above, owners and operators of registered engines are not subject to notification requirements.
- (f) The Executive Officer shall make available via the Internet a list of approved notification methods for each district.
- (g) Failure to provide the required notifications within the timelines specified in this section shall be deemed a violation of this regulation.

NOTE: Authority cited: Sections 39600, 39601, 41752, 41753, 41754, 41755, 43013(b) and 43018, Health and Safety Code. Reference: Sections 41750, 41751, 41752, 41753, 41754, and 41755, Health and Safety Code.

# Final Regulation Order

## Regulation to Establish a Statewide Portable Equipment Registration Program

Amend sections 2451, 2452, 2453, 2455, 2456, 2458, 2459, 2460, 2461, and 2462 Title 13, California Code of Regulations to read as follows:

(Note: Proposed amendments to the regulation are identified below. The originally proposed language is shown in underline is used to indicate proposed additions. ~~Strikeout~~ is used to show proposed deletions from the regulation text.)

### Article 5. Portable Engine and Equipment Registration

#### 2451. Purpose.

The purpose of this regulation is to establish a statewide registration program for portable engines and equipment.

This regulation shall apply to all portable engines and equipment that are used in California. It shall not apply to portable engines and equipment that are used in other states or countries.

(1) The registration program shall be administered by the Department of Industrial Relations. The Department shall establish rules and regulations to carry out the purposes of this regulation.

(2) The registration program shall be established in accordance with the provisions of this regulation. The registration program shall be established in accordance with the provisions of this regulation. The registration program shall be established in accordance with the provisions of this regulation.

#### 2452. Definitions.

(1) "Portable engine" means any internal combustion engine that is designed to be used in a portable manner.

(2) "Equipment" means any device or apparatus that is designed to be used in a portable manner.



- (1) The Executive Officer shall determine the appropriate registration fee for each portable engine or equipment unit based on the following factors:
  - (a) The horsepower of the engine or equipment unit.
  - (b) The weight of the engine or equipment unit.
  - (c) The type of fuel used by the engine or equipment unit.
  - (d) The intended use of the engine or equipment unit.
  - (e) The location where the engine or equipment unit will be used.
  - (f) The age of the engine or equipment unit.
  - (g) The condition of the engine or equipment unit.
  - (h) The safety features of the engine or equipment unit.
  - (i) The environmental impact of the engine or equipment unit.
  - (j) The availability of parts and service for the engine or equipment unit.
  - (k) The cost of the engine or equipment unit.
  - (l) The cost of the registration process.
  - (m) The cost of the enforcement of the registration requirements.
  - (n) The cost of the public education and outreach program.
  - (o) The cost of the research and development program.
  - (p) The cost of the monitoring and evaluation program.
  - (q) The cost of the data collection and analysis program.
  - (r) The cost of the reporting and communication program.
  - (s) The cost of the training and technical assistance program.
  - (t) The cost of the public participation and consultation program.
  - (u) The cost of the stakeholder engagement program.
  - (v) The cost of the grievance redress mechanism program.
  - (w) The cost of the dispute resolution program.
  - (x) The cost of the conflict management program.
  - (y) The cost of the risk management program.
  - (z) The cost of the crisis management program.

**§ 2460. Inspections and Testing.**

- (a) In determining if a portable engine or equipment unit is eligible for registration, the Executive Officer may inspect the portable engine or equipment unit and/or require a source test, at the owner's expense.
- (b) Each district shall inspect all registered engines and equipment units for which the district has been designated as the home district pursuant to section 2453(i) above, as specified below:
  - (1) Within 45 days after the date of initial issuance or renewal of a registration, the owner or operator shall contact the home district to

arrange for inspection of the registered engine or equipment unit to be completed within one year of the initial registration or renewal date. If the registered engine or equipment unit shall be operating in a district, other than the home district, the owner or operator may request the home district to arrange for an inspection by that other district.

- (2) For portable engines, each home district should conduct no more than 20 percent of the arranged inspections for that district as in-field inspections. All arranged inspections not conducted as in-field inspections shall be conducted as non-field inspections. If a portable engine is found in violation during an in-field inspection, the next arranged inspection for that engine shall be an in-field inspection. This section does not limit the authority of a district to conduct any number of non-arranged in-field or non-field inspections for which no fee is charged.
- (3) For registered equipment units operating with registered engines, the owner or operator may not request that the registered engine be inspected ~~under the arranged inspection program or together with the equipment unit~~ at the hourly rate specified in Table 3 for equipment unit inspections. Inspection fees for registered engines are to be paid as listed in item 14 in Table 3.
- (4) Arranged inspections for PEPS engines and registered equipment units shall be non-field inspections unless an in-field inspection is requested by the holder of the registration and a reasonable in-field inspection location is arranged with the appropriate district.
- (5) The time for an arranged inspection shall be agreed upon in advance with the district and company preferences regarding time of day shall be accommodated within reason. To the extent that an arranged inspection does not fall within the district's normal workday, the district may charge for the off-hour time based on a fee as specified in Table 23.
- (6) If an arranged inspection of a registered engine or registered equipment unit does not occur due to unforeseen circumstances, the owner or operator and the home district shall reschedule the arranged inspection no later than 90 days of the initially scheduled inspection. Any unreasonable actions on the part of the owner or operator that prevents the inspection to occur within the specified time frame shall be deemed a violation of this article. Actions taken by the owner or operator that could be deemed "unreasonable" include, but are not limited to:
  - (A) failing to respond to the district correspondences or other contracts made to schedule the inspection;
  - (B) failing to ensure that the registered engine or equipment unit is in operation for arranged "in-field inspections" or where the district has

provided advance notification to the owner or operator that the registered engine or equipment unit is required to be observed in operation.

- (7) The owner or operator may request the scheduling of one or more arranged inspections for multiple engines in order to qualify for an inspection fee discount as specified in section 2461 (d). Within 45 days of date of initial issuance of registration or by January 30 of each year for renewals, the owner or operator shall submit a letter of intent including an equipment list and registration numbers to the district to arrange for inspection of multiple engines. The inspections shall be completed within one year after the registration renewal date for each engine inspected.
- (8) If a registered engine or equipment unit is out of California for one year or more following initial registration or renewal, the engine or equipment unit shall be excused from having the arranged inspection within that period if:
  - (A) within 45 days after the date of initial issuance or renewal of the registration, the owner or operator submitted a letter to the district noting the registration number of the registered engine or equipment unit and that the engine or unit is out of California for the one-year period; and
  - (B) upon the return of the registered engine or equipment unit to the State, the owner or operator shall arrange to have the registered engine or equipment unit inspected within 30 days.
- (c) After issuance of registration, the Executive Officer or district may at any time conduct an inspection of any registered engine or equipment unit in order to verify compliance with the requirements of this article. The district shall not charge the owner or operator an additional inspection fee for that inspection. Source testing of engines for compliance purposes shall not be required more frequently than once every three years (including testing at the time of registration), except as provided in section 2460 (e), unless evidence of engine tampering, lack of proper engine maintenance, or other problems or operating conditions that could affect engine emissions are identified. In no event shall the Executive Officer or district require source testing of a registered engine for which there is no applicable emission standard, emission limit or other emission related requirement contained in this regulation.
- (d) Testing shall be conducted in accordance with the following methods or other methods approved by the Executive Officer:

Particulate Matter:	ARB Test Method 5 with probe catch and filter catch only
VOC:	ARB Test Method 100 or U.S. EPA Test Method 25A
NOx:	ARB Test Method 100 or U.S. EPA Test Method 7E
Carbon Monoxide:	ARB Test Method 100 or U.S. EPA Test Method 10

Oxygen: ARB Test Method 100 or U.S. EPA Test Method 3A  
Gas Velocity and Flow Rate: ARB Test Method 1 & 2 or U.S. EPA Test Method 1 & 2

- (e) Initial or follow-up source testing of engines to verify compliance with the requirements of this regulation shall not be required for certified compression-ignition engines and spark-ignition engines.
- (f) The exemption provided in section 2460 (e) shall not apply to source testing of engines for compliance purposes where evidence of engine tampering, lack of proper engine maintenance, or other problems or operating conditions that could affect engine emissions are identified.

NOTE: Authority cited: Sections 39600, 39601, 41752, 41753, 41754, 41755, 43013(b) and 43018, Health and Safety Code. Reference: Sections 41750, 41751, 41752, 41753, 41754, and 41755, Health and Safety Code.

# Final Regulation Order

## Regulation to Establish a Statewide Portable Equipment Registration Program

Amend sections 2451, 2452, 2453, 2455, 2456, 2458, 2459, 2460, 2461, and 2462 Title 13, California Code of Regulations to read as follows:

(Note: Proposed amendments to the regulation are identified below. The originally proposed language is shown in underline is used to indicate proposed additions. ~~Strikeout~~ is used to show proposed deletions from the regulation text.)

### Article 5. Portable Engine and Equipment Registration

#### 2451. Purpose.

The purpose of this regulation is to establish a statewide portable equipment registration program.

The registration program shall require the registration of all portable equipment that is used in the state of California for the purpose of generating revenue for the state and local governments.

(1) The registration program shall require the registration of all portable equipment that is used in the state of California for the purpose of generating revenue for the state and local governments.

(2) The registration program shall require the registration of all portable equipment that is used in the state of California for the purpose of generating revenue for the state and local governments.

The following sections shall be amended to read as follows:

(1) The registration program shall require the registration of all portable equipment that is used in the state of California for the purpose of generating revenue for the state and local governments.

(2) The registration program shall require the registration of all portable equipment that is used in the state of California for the purpose of generating revenue for the state and local governments.

**§ 2461. Fees.**

- (a) Except as otherwise set out herein, the Executive Officer shall assess and collect reasonable fees for registration, renewal, and associated administrative tasks, to recover the estimated costs to the Executive Officer for evaluating registration applications, and issuing registration documentation.
- (b) Fees shall be due and payable to the Executive Officer at the time an application is filed or as part of any request requiring a fee. Fees are nonrefundable except in circumstances as determined by the Executive Officer.
- (c) Except as provided in (k) below, the owner or operator of a registered engine or equipment unit shall submit fees to the Executive Officer and to districts in accordance with Table 3.
- (d) The Executive Officer shall collect an inspection fee as listed in Table 3 one time per every three calendar years for each registered engine to be paid upon initial application and renewal. Except for TSE, when multiple registered engines are inspected at a given source or location, the owner shall receive a discount if the owner or operator intends to arrange multiple engines inspections with the district and complies with the requirements specified in section 2460(b)(7). The discounts shall be applied as follows:
  - (1) no discount for 1 to 3 engines
  - (2) 25 percent discount for 4 to 9 engines
  - (3) 35 percent discount for 10 or more engines
- (e) Failure to pay renewal fees when due may result in penalties. If a fee payment is not received or postmarked by the specified due date, fee penalties may be assessed per unit in accordance with Table 3. Failure to pay renewal fees prior

to expiration may result in cancellation of the registration. If a registration has expired for an engine or equipment unit that is eligible for reactivation, a canceled registration may be reactivated after payment of all renewal and penalty fees. Registration may be reissued under the original registration number and expiration date. A portable engine or equipment unit without valid registration is subject to the rules and regulations of the district in which it operates.

- (f) Fees shall be periodically revised by the Executive Officer in accordance with the consumer price index, as published by the United States Bureau of Labor Statistics.
- (g) A district may collect a fee for the inspection of a registered equipment unit pursuant to section 2460(b)(3). The district shall bill the owner of the equipment unit at a rate as specified in Table 3 of the regulation for actual staff time taken to perform the inspection, not to exceed the amount specified in Table 3. Upon receipt of the invoice for the inspection fee, the owner shall have the right to appeal the district's fee determination to the district Air Pollution Control Officer pursuant to the provisions of the district's rules and regulations that govern appeals of fee determinations.
- (h) The Executive Officer shall annually distribute district inspection fees collected for that year. General inspection fees will be distributed equally among the districts. Home district inspection fees will be distributed to the corresponding home district.
- (i) TSE fees are due at the time of the report pursuant to section 2458(c). Failure to submit the annual report and applicable fees within six calendar months after the end of the year will result in cancellation of the registration. For TSE, if registration is cancelled or allowed to expire, the applicant shall reapply and pay initial registration fees.
- (j) The district may collect an inspection fee as listed in Table 3 one time per calendar year for each registered TSE inspected. When multiple registered TSE units are inspected at a given source or location, the inspection fee shall be equal to the lesser of the actual cost, including staff time, for conducting the inspection or the fee as listed in Table 3 per registered portable engine or equipment unit inspected. If the district performs an inspection leading to determination of non-compliance with this article, or any applicable state or federal requirements, the district may charge a fee as listed in Table 3 per portable engine or equipment unit for each inspection necessary for the determination and ultimate resolution of the violation. In no event shall the total fees exceed the actual costs, including staff time, to the district of conducting the investigations and resolving any violations.
- (k) Portable engines qualifying for initial registration as resident engines per section 2452(mm)(2) shall use the Table 2 fee schedule. The fees collected subject to this section shall be distributed to the districts, except that \$270 dollars per

engine for initial registration, and an additional \$80 dollars per engine shall be retained by the Air Resources Board to provide for administrative costs. The fees shall be determined as follows:

- (1) For tier 1 engines, as defined in section 2452(vv), registration fees will be based on the year listed in Table 2, as determined below:
  - (A) Where date of purchase can be verified by the Executive Officer, the earlier of:
    - (1) for engines  $\geq 50$  bhp and  $< 100$  bhp: year of purchase or 2004;
    - (2) for engines  $\geq 100$  bhp and  $< 300$  bhp: year of purchase or 2003;
    - (3) for engines  $\geq 300$  bhp and  $< 600$  bhp: year of purchase or 2001;
    - (4) for engines  $\geq 600$  bhp and  $\leq 750$  bhp: year of purchase or 2002;
    - (5) for engines  $> 750$  bhp: year of purchase or 2006.
  - (B) Where the date of purchase can not be verified, the model year shall be used.
- (2) For tier 2 engines, as defined in section 2452(ww), registration fees as listed in Table 2 will be based on the year the engine was purchased (as verified by the Executive Officer) or the model year of the engine (if purchase date is not available).

Table 2 Registration Fees For Resident Engines Per Section 2452(mm)(2)

<i>Portable Engine Date*</i>	<i>Application Submitted on or Before 12/31/07</i>	<i>Application Submitted in 2008</i>	<i>Application Submitted in 2009</i>
1996	\$2,353	\$3,130	\$5,000
1997	\$2,195	\$2,920	\$4,685
1998	\$2,038	\$2,710	\$4,370
1999	\$1,880	\$2,500	\$4,055
2000	\$1,723	\$2,290	\$3,740
2001	\$1,565	\$2,080	\$3,425
2002	\$1,408	\$1,870	\$3,110
2003	\$1,250	\$1,660	\$2,795
2004	\$1,093	\$1,450	\$2,480
2005	\$935	\$1,240	\$2,165
2006	\$778	\$1,030	\$1,850

\*As determined in section 2461(k)



**Table 3 Fees for Statewide Registration Program  
(Fees are per registered unit except where noted otherwise)**

1	Initial Registration	\$270.00
2	TSE, initial registration	
A	Registration of first 25 units (or portion thereof)	\$750.00
B	Registration of every additional 50 units (or portion thereof)	\$750.00
3	Change of status from non-operational to operational	
A	Where initial evaluation has not been previously completed	\$180.00
B	Where initial evaluation has been previously completed	\$90.00
4	Identical replacement	\$75.00
5	Renewal, non-TSE	\$225.00
6	Penalty fee for late renewal payments, non-TSE	
A	Postmarked within 2 calendar months prior to registration expiration date	\$45.00
B	Postmarked within the calendar month prior to registration expiration date	\$90.00
C	Postmarked after the registration expiration date	\$250.00
7	Annual TSE inventory fee	
A	first 25 units (or portion thereof)	\$375.00
B	every additional 50 units (or portion thereof)	\$375.00
8	Modification to registered portable engine or equipment unit	\$75.00
9	Change of ownership	\$75.00
10	Replacement of registration identification device or placard	\$30.00
11	Correction to an engine or equipment unit description	\$45.00
12	Update company information, copy of registration documents	\$45.00
13	Copy of registration documents	\$45.00
14	Total district inspection fee per registered portable engine, paid once every 3 years	\$345.00
A	General district inspection fee	\$30.00
B	Home district inspection fee	\$315.00
15	District off-hour service fee per hour	\$50.00
16	District inspection fees for equipment units:	
A	General district inspection fee, paid once every 3 years	\$75.00
B	District inspection fee per equipment unit, per hour	\$98.00 (not to exceed \$500.00)
17	TSE inspection fees:	
A	General district inspection fee per TSE unit, paid annually	\$10.00
B	District inspection fee per TSE unit per inspection	\$75.00
18	Placard	\$5.00

NOTE: Authority cited: Sections 39600, 39601, 41752, 41753, 41754, 41755, 43013(b) and 43018, Health and Safety Code. Reference: Sections 41750, 41751, 41752, 41753, 41754, and 41755, Health and Safety Code.

43013(b), Health and Safety Code.

(1) Section 41750, Health and Safety Code, shall be amended to read:  
41750. (a) The Department shall, in cooperation with the State Board of Pesticide Control, the State Board of Agriculture, and the State Board of Forestry, develop and maintain a list of pesticides which are registered for use in California.

(2) The Department shall, in cooperation with the State Board of Pesticide Control, the State Board of Agriculture, and the State Board of Forestry, develop and maintain a list of pesticides which are registered for use in California.

41750, Health and Safety Code, shall be amended to read:  
41750. (a) The Department shall, in cooperation with the State Board of Pesticide Control, the State Board of Agriculture, and the State Board of Forestry, develop and maintain a list of pesticides which are registered for use in California.

# Final Regulation Order

## Regulation to Establish a Statewide Portable Equipment Registration Program

Amend sections 2451, 2452, 2453, 2455, 2456, 2458, 2459, 2460, 2461, and 2462 Title 13, California Code of Regulations to read as follows:

(Note: Proposed amendments to the regulation are identified below. The originally proposed language is shown in underline is used to indicate proposed additions. ~~Strikeout~~ is used to show proposed deletions from the regulation text.)

### Article 5. Portable Engine and Equipment Registration

#### 2451. Purpose.

The purpose of this regulation is to establish a statewide registration program for portable engines and equipment.

This regulation shall apply to all portable engines and equipment that are used in California. It shall not apply to portable engines and equipment that are used in other states or countries.

(1) The registration program shall be administered by the Department of Industrial Relations. The Department shall establish rules and regulations to carry out the purposes of this regulation.

(2) The registration program shall be established in accordance with the provisions of this regulation. The registration program shall be established in accordance with the provisions of this regulation. The registration program shall be established in accordance with the provisions of this regulation.

#### 2452. Definitions.

(1) "Portable engine" means any internal combustion engine that is designed to be used in a portable manner.

(2) "Equipment" means any piece of machinery or equipment that is designed to be used in a portable manner.

**§ 2462. Duration of registration.**

- (a) Except for registrations that will expire on December 31, 2009 pursuant to sections 2456(d)(10) and 17 CCR 93116.3(b)(1)(A), Registrations and renewals will be valid for three years from date of issuance. For change of ownership, the registration shall retain the original expiration date, except where the registration has expired.
- (b) The Executive Officer shall mail to the owner of a registered engine or equipment unit a renewal invoice at least 60 days prior to the registration expiration. Failure to send or receive a renewal invoice does not relieve the responsible official from paying all applicable fees when due.

NOTE: Authority cited: Sections 39600, 39601, 41752, 41753, 41754, 41755, 43013(b) and 43018, Health and Safety Code. Reference: Sections 41750, 41751, 41752, 41753, 41754, and 41755, Health and Safety Code.

**Chapter 9. Off-Road Vehicles and Engines Pollution Control Devices**

**Article 7. Certification Procedures for Aftermarket Parts For Off-Road Vehicles, Engines, Equipment**

**§ 2474. Add-On Parts and Modified Parts.**

\*\*\*\*\*

(e) The executive officer may exempt add-on and modified parts based on an evaluation conducted in accordance with the "Procedures for Exemption of Add-On and Modified Parts for Off-Road Categories," adopted July 14, 2000, as last amended June 5, 2009, which is hereby incorporated by reference herein.

\*\*\*\*\*

(i)(1) No person shall install, sell, offer for sale or advertise any used catalytic converter for off-road vehicles, engines, or equipment in California unless such catalytic converter has been exempted pursuant to the "Procedures for Exemption of Add-On and Modified Parts for Off-Road Categories," adopted July 14, 2000, as last amended June 5, 2009, which is hereby incorporated by reference herein.

\*\*\*\*\*

Note: Authority cited: Sections 39600, 39601, 43013 and 43018, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43000.5, 43013, 43017 and 43018, Health and Safety Code; and Sections 27156, 38391 and 38395, Vehicle Code.

## FINAL REGULATION ORDER

### **Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets, and Facilities Where TRUs Operate**

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Amend article 8, Off-Road Airborne Toxic Control Measures section 2477 and adopt sections 2477.1, 2477.2, 2477.3, 2477.4, 2477.5, 2477.6, 2477.7, 2477.8, 2477.9, 2477.10, 2477.11, 2477.12, 2477.13, 2477.14, 2477.15, 2477.16, 2477.17, 2477.18, 2477.19, 2477.20, and 2477.21, within division 3, chapter 9, title 13, California Code of Regulations, to read as follows:

**Note:** Proposed amendments are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions.

#### **Article 8. Off-Road Airborne Toxic Control Measures**

#### **Section 2477. Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets, and Facilities Where TRUs Operate.**

##### **(a)2477.1 Purpose.**

Diesel particulate matter (PM) was identified in 1998 as a toxic air contaminant. This regulation implements provisions of the Diesel Risk Reduction Plan, adopted by the Air Resources Board in October, 2000, as mandated by the Health and Safety Code Sections 39650-39675, to reduce emissions of substances that have been determined to be toxic air contaminants. Specifically, this regulation ~~will~~ uses a phased approach to reduce the diesel PM emissions from in-use transport refrigeration units (TRUs) and TRU generator (gen) set equipment used to power electrically driven refrigerated shipping containers and trailers that are operated in California.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

##### **(b)2477.2 Applicability.**

~~(1)~~(a) Owners and operators: Except as provided in subsection ~~(c)2477.3~~, section 2477.5 of this regulation applies to owners and operators of diesel-fueled TRUs and TRU gen sets (see definition of operator and owner in subsection ~~(d)2477.4~~) that operate in the ~~s~~State of California, regardless of where the vehicle is based. This specifically includes California-based and non-California-based TRUs and TRU gen sets that are installed on trucks, trailers, shipping containers, and railcars.

~~(A) Operators and owners of California-based TRUs and TRU gen sets that are installed on trucks, or trailers, shipping containers, or railcars; and~~

~~(B) Operators and owners of non-California-based TRUs and TRU gen sets that are installed on trucks, trailers, shipping containers, or trailers.~~

(b) Terminal operators: Section 2477.6 of this regulation applies to operators of terminals located in California where TRU-equipped trucks, trailers, or shipping containers, or TRU gen sets are regularly garaged, maintained, operated, or dispatched from, including a dispatch office, cross-doc facility, maintenance shop, business, or private residence.

(c) Drivers: Section 2477.7 applies to drivers (as defined in section 2477.4) that drive trucks or trailers that use TRUs or TRU gen sets on California highways.

(d) Freight brokers and freight forwarders: Section 2477.8 applies to freight brokers and freight forwarders (as defined in section 2477.4) that arrange, hire, tender contracts for, or dispatch the transport of perishable goods on California highways or railways in trucks, trailers, shipping containers, or railcars that are equipped with TRUs or TRU gen sets.

(e) Carriers: Section 2477.9 applies to motor carriers (as defined in section 2477.4) that use, cause to be used, or dispatch TRU-equipped trucks, trailers, or railcars, or trailer chassis or shipping containers with TRU gen sets that are driven on California highways or railways.

(f) California-based shippers: Section 2477.10 applies to California-based shippers (as defined in section 2477.4) that arrange, tender contracts for, or dispatch the transport of perishable goods from any location in California in TRU-equipped or TRU gen set-equipped trucks, trailers, shipping containers, or railcars.

(g) California-based receivers: Section 2477.11 applies to California-based receivers (as defined in section 2477.4) that arrange, tender contracts for, or dispatch the transport of perishable goods to any location in California in TRU-equipped or TRU gen set-equipped trucks, trailers, shipping containers, or railcars.

(h) Lessors and Lessees: Section 2477.12 applies to any person that rents or leases (lessor) TRUs or TRU gen sets and those persons renting (renter) or leasing (lessee) such equipment that is operated in California or that is based in California.

(i) TRU and TRU gen set original equipment manufacturers: Section 2477.13 applies to original equipment manufacturers (as defined in section 2477.4) that direct TRU or TRU gen set sales to the California market.

- (j) TRU, TRU gen set, and TRU-equipped truck and trailer dealers located in California: Section 2477.14 applies to TRU, TRU gen set, and TRU-equipped truck and trailer dealers that maintain a business location in California and sell, maintain, or repair new or in-use TRUs, TRU gen sets, or TRU-equipped trucks or trailers.
- (k) Repair shops located in California that work on TRUs or TRU gen sets: Section 2477.15 applies to repair shops that maintain a business located in California and install replacement engines in TRUs or TRU gen sets, or retrofit TRUs or TRU gen sets with verified diesel emissions control strategies to comply with this subarticle.
- (l) Engine rebuilders: Section 2477.16 applies to TRU or TRU gen set engine rebuilders that sell to the California market.
- ~~(2)~~(m) Facilities: Section 2477.17 This regulation applies to facilities located in California with 20 or more loading dock doors spaces serving refrigerated areas where perishable goods are loaded or unloaded for distribution on trucks, trailers, shipping containers, or rail cars that are equipped with TRUs and TRU gen sets and that are owned, leased, or contracted for by the facility, its parent company, affiliate, or subsidiary that are under facility control (see definition).
- ~~(3)~~(n) To the extent not already covered under subsections ~~(b)(1) and (b)(2)~~ (a) through (m), above, ~~subsection (g)~~ 2477.18 of this regulation shall apply to any person engaged in this State in the business of selling to an ultimate purchaser, or renting or leasing new or used TRUs or TRU gen sets, including, but not limited to, manufacturers, distributors, and dealers, auctioneers, carriers, private fleets, independent owner-operators, and rental and leasing companies.
- (o) For purposes of this subarticle, the terms “lease,” “leased,” “lessor,” and “lessee” mean the same as “rental agreement,” “rented,” “owner of rented vehicle,” and “renter,” respectively.
- ~~(4) TRU and TRU gen set original equipment manufacturers that directly or indirectly sell or offer for sale TRUs and TRU gen sets to the California market.~~
- ~~(5) Severability. If any subsection, paragraph, subparagraph, sentence, clause, phrase, or portion of this regulations is, for any reason, held invalid, unconstitutional, or unenforceable by any court of competent jurisdiction, such portion shall be deemed as a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of the regulation.~~

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.



**(e) 2477.3 Exemptions.**

(a) \_\_\_\_\_ This regulation does not apply to military tactical support equipment.

(b) Obviously non-operational TRUs or TRU gen sets are exempt from certain sections of this subarticle, as specified below, except that the prohibitions in section 2477.18 apply with respect to selling, renting, or leasing to a person that could be reasonably expected to operate the TRU in California:

(1) Any TRU that is removed or separated from the truck or trailer van, shipping container, or rail car. This exemption does not include TRU gen sets that are not attached to a shipping container or trailer chassis.

(2) Any trailer TRU housing that remains attached to a trailer van, but the fuel tank and battery have been removed and a label with the word “NONOPERATIONAL” has been affixed or attached to the housing in letters that contrast sharply with the color of the TRU housing and can be seen from 50 feet during daylight hours when the vehicle is stationary.

(3) Any truck TRU housing that remains attached to a truck van, but the positive and negative battery cables, fuel supply and return lines, and condensate drain line have been removed so that there are no visible ancillary connections to the TRU housing and a label with the word “NONOPERATIONAL” has been affixed or attached to the housing in letters that contrast sharply with the color of the TRU housing and can be seen from 50 feet during daylight hours when the vehicle is stationary.

(4) Any TRU or TRU gen set that has no engine or fuel injection system installed, making the engine incapable of being started.

(5) TRU gen sets that have been quarantined in a designated area that is separated from other compliant TRU gen sets by a cordon or barrier with signs that read “NONCOMPLIANT – DO NOT OPERATE IN CALIFORNIA”. Bright red tags must be affixed to the TRU gen set control panel at all times while in California that read: “NONCOMPLIANT – DO NOT OPERATE IN CALIFORNIA”. TRU gen sets may be stored in a shipping container in lieu of being quarantined in a cordoned area.

(c) Transport refrigeration systems that are not driven by an integral diesel internal combustion engine are exempt from the requirements of this subarticle. Examples of exempt equipment include, but are not limited to:

(1) transport refrigeration systems that are driven by gasoline-fueled internal combustion engines;

(2) transport refrigeration systems that are driven by electric motors with no integral diesel engine providing power; or

(3) Pure cryogenic temperature control systems with no diesel engine driven refrigeration system integration.

(d) TRUs that are used during an emergency (as defined) are exempt from the in-use performance standards of section 2477.5(a) of this subarticle, provided the requirements of section 2477.5(j) are met. This exemption expires on January 1, 2025. California-based TRUs are not exempt from the ARBER registration requirements in section 2477.5(e).

(e) (1) Noncompliant TRUs on refrigerated railcars that are not operated while traveling through California shall be exempted provided the Executive Officer has previously approved a written compliance plan submitted by the railway carrier.

(2) The written compliance plan must clearly identify the monitoring, recordkeeping, and reporting procedures that the railway carrier will implement and utilize to ensure that noncompliant TRUs on refrigerated railcars will not operate while in California.

(3) The compliance plan shall establish monitoring, recordkeeping, and reporting procedural requirements that the Executive Officer finds are sufficient to identify non-compliant TRUs being moved on railways in California and to ensure that such TRUs will not operate at any time while they are present within California.

(A) The compliance plan must include, without limitation: the procedure for tracking and recording routes and dates of travel within California of each noncompliant TRU, information identifying each noncompliant TRU (e.g. the railway carrier's reporting mark followed by the one-to-six-digit number which together uniquely identifies the railcar), a description of the automated monitoring and recordkeeping system for reporting the TRU "engine on" or "engine off" status, and the procedure for expeditiously reporting violations observed and/or discovered by the railway carrier.

(B) A statement is required, signed by an authorized railroad representative, declaring that the railway carrier agrees to be bound by the compliance plan.

(4) Within 30 days of the submission of a complete compliance plan, the Executive Officer shall approve or disapprove the compliance plan based on the information submitted by a railway carrier as specified in sections 2477.3(e)(2) and (3) above, and based on good engineering judgment. If the compliance plan is disapproved, the Executive Officer shall inform the railway carrier of the reasons for the disapproval. The railway carrier may revise the compliance plan to address the basis for disapproval and resubmit the compliance plan for EO approval or disapproval.

(5) The railway carrier shall maintain records collected pursuant to the approved compliance plan for a period of at least three (3) years and make these records available to ARB upon request.

(f) Railway carriers are exempt from the owner or owner/operator requirements of section 2477.5 for any TRU or TRU gen set that is not owned by the railway carrier, provided:

(1) The TRU or TRU gen set is not leased by the railway carrier, in which case, section 2477.12 applies; or

(2) The railway carrier or its agent is only fueling, monitoring to assure proper operation, keeping in operation, arranging repairs at the request of the owner, or restarting the TRU or TRU gen set engine after an unscheduled shut-down or repair, and is not performing any of the other activities listed under the definition of "operate".

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

~~(d)~~**2477.4 Definitions.**

(a) For purposes of this regulation, the following definitions apply:

- (1) "Affiliate or Affiliation" refers to a relationship of direct or indirect control or shared interests between the subject business and another business.
- (2) "Alternative Fuel" means natural gas, propane, ethanol, methanol, or advanced technologies that do not rely on diesel fuel, except as a pilot ignition source at an average ratio of less than 1 part diesel fuel to 10 parts total fuel on an energy equivalent basis. Alternative fuels also means any of these fuels used in combination with each other or in combination with other non-diesel fuels. Alternative-fueled engines shall not have the capability of idling or operating solely on diesel fuel at any time.
- (3) "Alternative-Fueled Engine" means an engine that is fueled with a fuel meeting the definition of alternative fuel.
- (4) "Alternative Diesel Fuel" means any fuel used in diesel engines that is not commonly or commercially known, sold or represented as No. 1-D or No. 2-D, pursuant to the specification for Diesel Fuel Oils D975-81, and does not require engine or fuel system modifications for the engine to operate, although minor modifications (e.g. recalibration of the engine fuel control) may enhance performance. Examples of alternative diesel fuels include, but are

not limited to, biodiesel, Fischer Tropsch fuels, and emulsions of water in diesel fuel. Natural gas is not an alternative diesel fuel. An emission control strategy using a fuel additive will be treated as an alternative diesel fuel based strategy unless:

- (A) The additive is supplied to the vehicle or engine fuel by an on-board dosing mechanism, or
- (B) The additive is directly mixed into the base fuel inside the fuel tank of the vehicle or engine, or
- (C) The additive and base fuel are not mixed until vehicle or engine fueling commences, and no more additive plus base fuel combination is mixed than required for a single fueling of a single engine or vehicle.

(5) "ARB" means the California Air Resources Board.

(6) "ARBER" means the ARB's Equipment Registration system.

~~(6)~~(7) "B100 Biodiesel Fuel" means 100% biodiesel fuel derived from vegetable oil or animal fat and complying with American Society for Testing Materials (ASTM) D 6751-02 and commonly or commercially known, sold, or represented as "neat" biodiesel or B100. B100 biodiesel fuel is an alternative diesel fuel.

~~(7)~~(8) "B100 Biodiesel-Fueled" (compression-ignition engine) means a compression-ignition engine that is fueled by B100 biodiesel fuel.

(9) "Broker" means a person, other than a motor carrier or an employee or agent of a motor carrier, that as a principal or agent sells, offers for sale, negotiates for, or holds itself out by solicitation, advertisement, or otherwise as selling, providing, or arranging for, transportation by motor carrier for compensation.

~~(8)~~(10) "Business" means an entity organized for profit including, but not limited to, an individual, sole proprietorship, partnership, limited liability partnership, corporation, limited liability company, joint venture, association or cooperative; or solely for purposes of the Prompt Payment Act (Government Code 927 et seq.), a duly authorized nonprofit corporation.

(11) "California-based shipper" means a shipper that operates a facility in California where wholesale freight is located prior to its transportation.

(12) "California-based receiver" means a receiver that operates a facility in California where wholesale freight is received.

- (9)(13) "California-Based TRUs and TRU Gen Sets" means TRUs and TRU gen sets equipped on trucks, trailers, shipping containers, or railcars that a reasonable person would find to be regularly assigned to terminals within California.
- (40)(14) "CARB Diesel Fuel" means any diesel fuel that is commonly or commercially known, sold or represented as diesel fuel No. 1-D or No. 2-D, pursuant to the specification for Diesel Fuel Oils D975-81 and meets the specifications defined in *13 CCR 2281, 13 CCR 2282, and 13 CCR 2284*.
- (41)(15) "Carbon Monoxide (CO)" means a colorless, odorless gas resulting from the incomplete combustion of hydrocarbon fuels.
- (42)(16) "Carrier" means ~~any person, party, or entity who undertakes the transport of goods from one point to another~~ "motor carrier".
- (43)(17) "Certification" means the obtaining of an Executive Order for a new off-road compression-ignition engine family that complies with the off-road compression-ignition emission standards and requirements specified in ~~the title 13 California Code of Regulations, Title 13, Section 2423~~. A "certified engine" is an engine that belongs to an engine family that has received a certification Executive Order.
- (44)(18) "Certification Data" means the ARB Executive Order number and related exhaust emission data for each test cycle mode used to certify the engine family and obtain the certification level shown in the certification Executive Order. Such data includes modal exhaust emissions data for nitrogen oxides, nonmethane hydrocarbons, carbon monoxide, and particulate matter includes, as a minimum, torque, engine speed, weighting factor, power, mass emission rate (grams per hour), and certification test fuel.
- (45)(19) "Compression Ignition (CI) Engine" means an internal combustion engine with operating characteristics significantly similar to the theoretical diesel combustion cycle. The regulation of power by controlling fuel supply in lieu of a throttle is indicative of a compression ignition engine.
- (46)(20) "Consignee" (see receiver).
- (47)(21) "Consignor" (see shipper).
- (48)(22) "Cryogenic Temperature Control System" means a heating and cooling system that uses a cryogen, such as liquid carbon dioxide or liquid nitrogen that is routed through an evaporator coil that cools air blown over the coil. The cryogenic system uses a vapor motor to drive a fan and alternator, and a propane-fired heater superheats the carbon dioxide for heating and defrosting. Electrically driven fans may be used instead of a vapor motor and

heating and defrost needs may be met by using electric heaters and/or vehicle engine coolant.

(23) “Delegation” means entrusting by contract another party to act on the owner’s behalf without forfeiture of any rights or property.

~~(19)~~(24)“Deterioration Factor (DF)” means a factor that is applied to the certification emission test data to represent emissions at the end of the useful life of the engine. Separate DFs apply to each measured pollutant, except that a combined NMHC+NO<sub>x</sub> DF applies to engines that do not use aftertreatment devices. Decreasing emissions over time would not be allowed to offset increasing emissions of the other pollutant in this combined DF.

~~(20)~~(25)“Diesel Fuel” means any fuel that is commonly or commercially known, sold, or represented as diesel fuel, including any mixture of primarily liquid hydrocarbons – organic compounds consisting exclusively of the elements carbon and hydrogen – that is sold or represented as suitable for use in an internal combustion, compression-ignition engine.

~~(21)~~(26)“Diesel-Fueled” means fueled by diesel fuel or CARB diesel fuel in whole or in part, except as allowed for a pilot ignition source under the definition for “alternative fuel”.

~~(22)~~(27)“Diesel Oxidation Catalyst (DOC)” means the use of a catalyst to promote the oxidation processes in diesel exhaust. Usually refers to an emission control device that includes a flow-through substrate where the surfaces that contact the exhaust flow have been catalyzed to reduce emissions of the organic fraction of diesel particulates, gas-phase hydrocarbons, and carbon monoxide.

~~(23)~~(28)“Diesel Particulate Filter (DPF)” means an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate. Periodically the collected particles are either physically removed or oxidized (burned off) in a process called regeneration.

~~(24)~~(29)“Diesel Particulate Matter” means the particles found in the exhaust of diesel-fueled CI engines. Diesel PM may agglomerate and adsorb other species to form structures of complex physical and chemical properties.

(30) “Dispatch” means to coordinate delivery, pickup, and drop-off schedules of vehicles; and monitor the delivery of freight from these vehicles.

(31) “Dispatched driver” means the driver of a truck or tractor-trailer combination that has been dispatched by a motor carrier, freight broker or forwarder, shipper, or receiver.

(32) “Driver” means a person who physically operates a truck or tractor. Drivers may also be an owner or an operator. Drivers are not railroad engineers.

~~(25)~~(33)“Dual-Fuel Engine” means an engine designed to operate on a combination of alternative fuel, such as compressed natural gas (CNG) or liquefied petroleum gas (LPG), and conventional fuel, such as diesel or gasoline. These engines have two separate fuel systems, which either inject both fuels simultaneously into the engine combustion chamber or fumigate the gaseous fuel with the intake air and inject the liquid fuel into the combustion chamber.

~~(26)~~(34)“Effective model year” or “effective engine model year” is an alternative model-year designation (see definition of “model year”) for a new replacement engine, rebuilt replacement engine, or flexibility engine when the engine does not meet, at the time of manufacture, the most stringent emission tier standard for a new engine in effect for the horsepower rating of the engine. When an engine is manufactured to meet a less stringent prior-tier emissions standard than is currently in effect, the effective model year is the last year that the prior-tier emission standard was in effect. Table 1 lists the tier standards that apply to TRUs and TRU gen sets and the corresponding effective model years.

**Table 1  
Effective Model Year**

<b><i>Prior-Tier Engine Emissions Standard</i></b>	<b><i>Tier Standard Effective Years</i></b>	<b><i>Effective Model Year</i></b>
Tier 1, 25-50 Hp (trailer)	1999-2003	2003
Tier 1, under 25 Hp (truck)	2000-2004	2004
Tier 2, 25-50 Hp (trailer)	2004-2007	2007
Tier 2, under 25 Hp (truck)	2005-2007	2007
Tier 4i, 25-50 hp (trailer)	2008-2012	2012 <sup>1</sup>

(35) “Electric-Standby-Equipped TRU” means a TRU that is equipped with an integral diesel-fueled internal combustion engine and electric-powered motor and the refrigeration system may be driven by either the diesel-fueled internal combustion engine or the integral electric motor.

(36) “Electronic Tracking System” means a system that meets the following criteria:

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<sup>1</sup> Effective model year applies for this tier only after Tier 4f becomes effective in 2013 for 25 to less than 50 hp engines.

- (A) The tracking device must acquire, at a minimum, date, time, TRU engine hour meter reading, and location data at a rate of at least one reading per minute, with no more than 10 minutes data gap.
- (B) The tracking device must be capable of determining if the TRU or TRU gen set location is within California and determining the TRU engine run time in California for each day.
- (C) The tracking records must be collected by an independent entity with no business relationship to the owner or operator of the TRU or TRU gen set being tracked, other than to provide the tracking service. The data shall be stored on a server that is secure from tampering and inaccessible to the TRU or TRU gen set owner or operator, other than to download reports over the Internet. An inspector shall have free access to download reports from this website over the Internet that show the TRU or TRU gen set engine operation in California for each day.

~~(27)~~(37) “Emergency” means any of the following times:

- (A) A failure or loss of normal power service that is not part of an “interruptible service contract” (see definition in ~~subsection (d)~~section 2477.4);
- (B) A failure of a facility’s internal power distribution system, provided the failure is beyond the reasonable control of the operator;
- (C) When an affected facility is placed under an involuntary “rotating outage” (see definition in ~~subsection (d)~~section 2477.4).
- (D) When the President of the United States or the Governor of the State of California declares a state of emergency related to any type of disaster where TRU-equipped trucks or trailers provide foodservice to incident responders, including but not limited to, forest fires and earthquakes.
- (E) When the National Interagency Fire Center dispatches mobile catering service businesses with TRU-equipped trucks or trailers to provide foodservice to incident responders located in California.

(38) “Emissions Control Group” has the same meaning as defined in title 13 CCR, section 2701

~~(28)~~(39) “Emission Control Strategy” means any device, system, or strategy employed with a diesel-fueled CI engine that is intended to reduce emissions. Examples of emission control strategies include, but are not limited to, particulate filters, diesel oxidation catalysts, selective catalytic reduction systems, alternative fuels, fuel additives used in combination with particulate filters, alternative diesel fuels, and combinations of the above.

~~(29)~~(40) “Emissions Rate” means the weight of a pollutant emitted per unit of time (e.g., grams per second).

~~(30)~~(41) “Executive Officer” means the Executive Officer of the California Air Resources Board or his or her delegate.



~~(31)~~(42)“Facility” means any facility where TRU-equipped trucks, trailers, shipping containers or railcars are loaded or unloaded with perishable goods. This includes, but is not limited to, grocery distribution centers, food service distribution centers, cold storage warehouses, and intermodal facilities. Each business entity at a commercial development is a separate facility for the purposes of this regulation, provided the businesses are “independently owned and operated” (see definition in ~~subsection (d)~~subsection 2477.4).

~~(32)~~(43)“Facility Control (of TRUs or TRU Gen Sets)” means the TRUs or TRU gen sets located at the facility are owned or leased by the facility, its parent company, affiliate, or a subsidiary, or under contract for the purpose of providing carrier service to the facility, and the TRUs' or TRU gen sets' arrival, departure, loading, unloading, shipping and/or receiving of cargo is determined by the facility, parent company, affiliate, or subsidiary (e.g. scheduled receiving, dispatched shipments).

~~(33)~~(44)“Fischer-Tropsch Diesel Fuel” See “ultra-low-aromatic synthetic diesel fuel”.

~~(34)~~(45)“Flexibility engine” means an engine installed in new equipment by an original equipment manufacturer under the Transitional Program for Equipment Manufacturers in accordance with title 40 Code of Federal Regulations (40 CFR) sections 89.102 and 1039.625, and title 13 CCR section 2423(d). Such engines shall use the “effective model year” designation for purposes of compliance with this subarticle, except as allowed under ~~subsection (e)(1)(B)~~section 2477.5(b)(5)(A).

(46) “Freight Broker” means “broker”, as defined herein.

(47) “Freight Forwarder” means a person holding itself out to the general public (other than as a pipeline, rail, motor, or water carrier) to provide transportation of property for compensation and in the ordinary course of its business does the following:

(A) Assembles and consolidates, or provides for assembling and consolidating, shipments and performs or provides for break-bulk and distribution operations of the shipments;

(B) Assumes responsibility for the transportation from the place of receipt to the place of destination; and

(C) Uses for any part of the transportation a motor carrier or rail carrier.

~~(35)~~(48)“Fuel Additive” means any substance designed to be added to fuel or fuel systems or other engine-related engine systems such that it is present in-cylinder during combustion and has any of the following effects: decreased emissions, improved fuel economy, increased performance of the engine; or assists diesel emission control strategies in decreasing emissions, or improving fuel economy or increasing performance of the engine.

~~(36)~~(49) "Generator Set (gen set)" means a CI engine coupled to a generator used as a source of electricity.

(50) "Highway" has the same meaning as defined in California Vehicle Code section 360.

(51) "Hybrid electric TRU" means a TRU that is powered by an integral diesel-fueled internal combustion engine coupled to an electric generator that provides electric power to an electric motor-driven refrigeration system and fans within the same housing and is designed to control the environment of temperature sensitive products that are transported in trucks and refrigerated trailers. Hybrid electric TRUs may be capable of both cooling and heating.

~~(37)~~(52) "Hybrid Cryogenic Temperature Control System" means a temperature control system that uses a cryogenic temperature control system in conjunction with a conventional TRU.

~~(38)~~(53) "Independently Owned and Operated" means a business concern that independently manages and controls the day-to-day operations of its own business through its ownership and management, without undue influence by an outside entity or person that may have an ownership and/or financial interest in the management responsibilities of the applicant business or small business.

~~(39)~~(54) "Intermodal Facility" means a facility involved in the movement of goods in one and the same loading unit or vehicle which uses successively several modes of transport without handling of the goods themselves in changing modes. Such a facility is typically involved in loading and unloading refrigerated shipping containers and trailers to and from railcars, trucks, and ocean-going ships.

~~(40)~~(55) "Interruptible Service Contract" means any arrangement in which a nonresidential electrical customer agrees to reduce or consider reducing its electrical consumption during periods of peak demand or at the request of the System Operator in exchange for compensation, or assurances not to be blacked out or other similar non-monetary assurances.

~~(41)~~(56) "In-Use TRU, TRU gen set, or engine" means a TRU, TRU gen set, or engine that is not a "new" TRU, TRU gen set, or engine.

~~(42)~~(57) "Low Emission TRU (LETRU or L)" means a TRU or TRU gen set that meets the performance standards described under ~~paragraph (e)(1)(A)1. or~~ (e)(1)(A)2. section 2477.5(a)(1) and (2).

~~(43)~~(58) "Manufacturer" means a business as defined in Government Code § 14837(c).

~~(44)~~(59) “Military tactical support equipment (TSE)” means equipment that meets military specifications, owned by the U.S. Department of Defense and/or the U.S. military services, and used in combat, combat support, combat service support, tactical or relief operations, or training for such operations.

~~(45)~~(60) “Model Year (MY)” means the following:

- (A) The designation used for engines manufactured to meet the emissions tier standard in effect for new engines at time of manufacture (see alternative designation, “effective model year, defined above); and
- (B) The diesel-fueled engine manufacturer’s annual production period, which includes January 1st of a calendar year, or if the manufacturer has no annual production period, the calendar year.

(61) “Motor Carrier” means a person providing motor vehicle transportation for compensation.

~~(46)~~(62) “New TRU, TRU Gen Set, or Engine” means any TRU, TRU gen set, or engine that has never been subject to a retail sale or lease to an “ultimate purchaser” (see definition in ~~sub~~section (d)2477.4).

~~(47)~~(63) “Nitrogen Oxide (NO<sub>x</sub>)” means compounds of nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), and other oxides of nitrogen. Nitrogen oxides are typically created during combustion processes and are major contributors to smog formation and acid deposition.

~~(48)~~(64) “Non-California-Based TRUs and TRU Gen Sets” means TRUs and TRU gen sets that are equipped on or used in trucks, trailers, shipping containers, or railcars that a reasonable person would find to be regularly assigned to terminals outside of California and operate in California from time to time for the purpose of transporting perishable goods into or out of the state.

~~(49)~~(65) “Non-methane Hydrocarbons (NMHC)” means the sum of all hydrocarbon air pollutants except methane. NMHCs are precursors to ozone formation.

(66) “Nonretail Delivery or Pick-up Point” means wholesale perishable goods distribution facilities or businesses in the supply chain prior to retail facilities or businesses. This includes, but is not limited to, food manufacturing facilities, shipper warehouses, transfer points, distribution centers, cold storage warehouses, and intermodal facilities where perishable goods are loaded or unloaded.

~~(50)~~(67) “Operate” means to start, cause to function, program the temperature controller, select an operating program or otherwise control, fuel, monitor to assure proper operation, or keep in operation. A TRU that is operational (e.g. capable of being operated) shall be considered to operate if it is in California.

~~(54)~~(68) “Operator” means any person (as defined), party or entity that operates a TRU or TRU gen set for the purposes of transporting perishable goods, excluding an employee driver and third party maintenance and repair service, and including but not limited to a: ~~(A) — M~~manufacturer, producer, supplier, carrier, shipper, consignor, consignee, receiver, distribution center, or warehouse of perishable goods; An operator may also be the driver if it is also the owner (e.g. independent owner-operator).

~~(B) An individual, trust, firm, joint stock company, business concern, partnership, limited liability company, association, or corporation including but not limited to, a government corporation;~~

~~(C) Any city, county, district, commission, the state or any department, agency, or political subdivision thereof, any interstate body, and the federal government or any department or agency thereof to the extent permitted by law.~~

(69) “Original equipment manufacturer (OEM)” means any person that originally manufactured new equipment for sale in commerce. This does not include a dealer who receives new equipment for sale in commerce.

~~(52)~~(70) “Owner” means any person that legally holds the title (or its equivalent) showing ownership of a TRU or TRU gen set, excluding a bank or other financial lending institution, and including but not limited to:

~~(A) Manufacturer, producer, supplier, carrier, shipper, consignor, consignee, receiver, distribution center, warehouse;~~

~~(B) An individual, trust, firm, joint stock company, business concern, partnership, limited liability company, association, or corporation including but not limited to, a government corporation;~~

~~(C) Any city, county, district, commission, the state or any department, agency, or political subdivision thereof, any interstate body, and the federal government or any department or agency thereof to the extent permitted by law.~~

means, except as modified by paragraphs (A) or (B) below, the person legally holding title (or its equivalent) to the TRU or TRU gen set, or either the person (see definition) registered as the owner or lessee of a vehicle by the California Department of Motor Vehicles or its equivalent in another state, province, or country, as evidenced on the vehicle registration document carried in the vehicle to which the TRU is attached, unless such person, can clearly demonstrate, with

written documentation, that another person (e.g., a lessee) is financially responsible for the maintenance of the TRU or TRU gen set, including responsibility for installing and maintaining the emissions control technologies on the TRU or TRU gen set, and registering the TRU with the California Air Resources Board's Equipment Registration (ARBER) system, as required by this subarticle. An owner may also be a driver or operator.

(A) Banks, other financial lending institutions, or other entities engaged in the act of financing TRUs are not owners, for the purposes of this subarticle unless they otherwise have an obligation to comply with this regulation (e.g., contractually responsible for the maintenance of a TRU under a sales or lease agreement).

(B) For a TRU-equipped truck or trailer, or TRU gen set owned by the federal government and not registered in any state or local jurisdiction, the owner means the department, agency, branch, or other entity of the United States, including the United States Postal Service, to which the vehicles in the fleet are assigned or which have responsibility for maintenance of the vehicles.

~~(53)~~(71) "Owner/Operator" means a requirement applies to the owner and/or operator of a TRU or TRU gen set, as determined by agreement or contract between the parties if the two are separate business entities.

~~(54)~~(72) "Parent Company" means a company that has a controlling interest in another company, usually through ownership of more than one-half the voting stock.

~~(55)~~(73) "Particulate Matter (PM)" means the particles found in the exhaust of CI engines, which may agglomerate and adsorb other species to form structures of complex physical and chemical properties.

(74) "Person" means an individual, corporation, business trust, estate, trust, partnership, limited liability company, association, joint venture, government, governmental subdivision, agency, or instrumentality, public corporation, or any other legal or commercial entity.

(75) Prior-Tier Replacement Engine" means a new replacement engine manufactured under title 40 CFR, section 89.1003 and 1068.240, and title 13 CCR, section 2423(j), as those sections existed on August 31, 2012, that meets a prior tier of the new engine emissions standards than the tier of standards currently in effect at the time of manufacture.

(76) "Rail Carrier" means a person providing common carrier railroad transportation for compensation, but does not include street, suburban, or interurban electric railways not operated as part of the general system of rail transportation

- ~~(56)~~(77) "Rated Brake Horsepower" means the power delivered, according to the statement of the engine manufacturer, at the rated speed.
- ~~(57)~~(78) "Real Emission Reductions" means that an action is taken that results in reductions in the PM emission rate of an in-use engine (e.g. a VDECS is installed that reduced the PM emissions rate by more than 50%).
- ~~(58)~~(79) "Receiver" means the person, ~~party, or entity~~ that receives shipped goods, cargo, or commodities.
- ~~(59)~~(80) "Refrigerated Trailer" means a trailer van, railcar, or shipping container equipped with a TRU or TRU gen set. Pursuant to Health and Safety Code section 39618, refrigerated trailers are mobile sources and shall be regulated by the ARB on a statewide basis.
- (81) "Repower" means to replace an existing engine in a vehicle or piece of equipment with another engine that is within the same category as the original engine and that is certified to emissions standards that are more stringent than the emission standards of the original engine (e.g. replacing a Tier 1 engine with a Tier 2 or later engine).
- (82) "Retail Delivery Point" means facilities or businesses where perishable goods are delivered to retail businesses that sell these goods to end users. This includes, but is not limited to, grocery stores, convenience stores, drug stores, restaurants, and prison or school cafeterias.
- ~~(60)~~(83) "Rotating Outage" means a controlled involuntary curtailment of electrical power service to consumers as ordered by the system operator - see definition in subsection ~~(d)~~2477.4.
- (84) "Semitrailer" means a "Semitrailer" as defined in section 550 of the California Vehicle Code.
- ~~(64)~~(85) "Shipper" means the person, party, or entity who usually owns or supplies the commodities ~~shipped~~transported by a carrier, or that has possession of freight prior to its transportation. This may include, but is not limited to, food manufacturers, processors, packing plants, temporary cold storage facilities, and distribution centers.
- ~~(62)~~(86) "System Operator" means one of the several organizations that control energy in California. System operators include, but are not limited to, the California Independent System Operator, the Los Angeles Department of Water and Power, the Imperial Irrigation District, the Sacramento Municipal Utility District.

~~(63)~~(87) "Terminal" means any place where a TRU or TRU gen set equipped truck, trailer, shipping container, railcar or TRU gen set is regularly garaged, maintained, operated, or dispatched from, including a dispatch office, cross-dock facility, maintenance shop, business, or private residence.

(88) "Terminal Operator" means the person that owns a terminal.

~~(64)~~(89) "Tier 4 Nonroad/Off-road Emission Standards" means the emission standards and associated procedures promulgated by U.S. Environmental Protection Agency in "Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel; Final Rule" (Vol. 69, No. 124 Fed.Reg. pp. 38957-39273 (June 29, 2004)).

(90) "Third Party Agreement Confirmation Information" means the information used to notify ARB that responsibility for registering a TRU in ARBER has been delegated to the lessee or to a consultant.

~~(65)~~(91) "Transport Refrigeration Unit (TRU)" means refrigeration systems powered by integral internal combustion engines designed to control the environment of temperature sensitive products that are transported in trucks and refrigerated trailers. TRUs may be capable of both cooling and heating.

(92) "Trailer" means a semitrailer.

~~(66)~~(93) "TRU Generator Set (TRU gen set)" means a generator set that is designed and used to provide electric power to electrically driven refrigeration units of any kind. This includes, but is not limited to gen sets that provide electricity to electrically powered refrigeration systems for semi-trailer vans and shipping containers.

~~(67)~~(94) "Ultimate Purchaser" means with respect to a new TRU, TRU gen set, or engine, the first person who in good faith purchases a new TRU, TRU gen set, or engine for purposes other than resale.

~~(68)~~(95) "Ultra-Low-Aromatic Synthetic Diesel Fuel" means fuel produced from natural gas, coal, or biomass by the Fischer-Tropsch gas-to-liquid chemical conversion process, or similar process that meets the following properties:

**Table 2**

<i>Property</i>	<i>ASTM</i>	<i>Value</i>
Sulfur Content (ppmw)	D5453-93	<1
Total Aromatic Content (wt %)	D5186-96	<1.5%
Polynuclear Aromatic Content (wt %)	D5186-96	<0.5%
Natural Cetane Number	D613-84	>74

~~(69)~~(96) “Ultra-Low Emission TRU (ULETRU or U)” means a TRU or TRU gen set that meets the performance standards described under subparagraphs ~~(e)(1)(A)1-~~2477.5(a)(1) and ~~(e)(1)(A)2-~~2477.5(a)(2) or that uses an “alternative technology” in accordance with subparagraph ~~(e)(1)(A)3-~~2477.5(a)(3).

~~(70)~~(97) “Verification Classification Level” means the classification assigned to a Diesel Emission Control Strategy by the Executive Officer as defined in the *Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emission from Diesel Engines (13 CCR Sections 2700-2710)*. PM reductions correspond as follows: Level 1: ≥25%; Level 2: ≥50%; Level 3: ≥85% or 0.01 g/hp-hr.

~~(71)~~(98) “Verified Diesel Emission Control Strategy” (VDECS) means an emission control strategy designed primarily for the reduction of diesel particulate matter emissions that has been verified per the *Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines (13 CCR Sections 2700-2710)*. Examples of diesel retrofit systems that may be verified include, but are not limited to, diesel particulate filters, diesel oxidation catalysts, fuel additives (e.g. fuel-borne catalysts), alternative fuels (e.g. dual fuel), alternative diesel fuels, and combinations of the above.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

## ~~(e)~~2477.5                    **Requirements for Owners or Owner/Operators.**

### ~~(1)~~In-Use Operation:

~~(A)~~(a) **In-Use Performance Standards:** In accordance with the schedule set forth below in paragraph ~~(e)~~(1)(B), no owner or owner/operator shall operate a TRU or TRU gen set in California unless it meets the in-use emission category performance standards set forth below.

~~4.~~(1) In-Use performance standard categories for TRU and TRU gen set engines with rated brake horsepower less than 25 horsepower (<25 hp) are shown in Table 3, along with the engine certification standards or the level of Verified Diesel Emission Control Strategy (VDECS) (see definition) that is necessary to qualify for each category.



**Table 3  
<25 HP TRU and TRU Gen Set In-Use PM Performance Standards**

Low Emission TRU (LETRU or L)	0.30 <sup>2</sup>	Level 2
Ultra-Low Emission TRU (ULETRU or U)	NA <sup>3</sup>	Level 3

a.(A) Compliance with the in-use performance standards can be achieved by:

1.1. Using a certified engine meeting the applicable nonroad/off-road emissions standards for all regulated pollutants and the in-use PM performance standard. Only engines for which certification data and deterioration factors have been provided to ARB shall be considered when determining compliance. The Executive Officer will consider such submittals, publish, and make available a list of qualifying engines.

1.2. Equipping the engine with the required Level of VDECS.

2.(2) In-Use performance standard categories for TRU and TRU gen set engines with rated brake horsepower greater than or equal to 25 horsepower (≥25 hp) are shown in Table 4, along with the engine certification standards or the level of VDECS that is necessary to qualify for each category.

**Table 4  
≥25 HP TRU and TRU Gen Set In-Use PM Performance Standards**

In-Use Emission Category	Engine Certification (g/hp-hr)	Level of VDECS Equipped with
Low Emission TRU (LETRU or L)	0.22 <sup>4</sup>	Level 2
Ultra-Low Emission TRU (ULETRU or U)	0.02 <sup>5</sup>	Level 3

<sup>2</sup> The Engine Certification value for the Low Emission TRU category corresponds to the "Interim" Tier 4 Nonroad/Off-road Emission Standards that are to go into effect in 2008.

<sup>3</sup> Not Applicable – must choose another compliance option.

<sup>4</sup> The Engine Certification value for Low Emission TRU category corresponds to the "Interim" Tier 4 Nonroad/Off-road Emission Standards that are to go into effect in 2008.

<sup>5</sup> The Engine Certification value for the Ultra-Low Emission TRU category corresponds to the Tier 4 "final" Nonroad/Off-road Emission Standards that will go into effect in 2012 or 2013.

~~a.~~(A) Compliance with the in-use performance standards can be achieved by:

~~f.~~1. Using a certified engine meeting the applicable nonroad/off-road emissions standards for all regulated pollutants and the in-use PM performance standard. Only engines for which certification data and deterioration factors have been provided to ARB shall be considered when determining compliance. The Executive Officer will consider such submittals, publish, and make available a list of qualifying engines.

~~h.~~2. Equipping the engine with the required Level of VDECS.

~~3.~~(3)As an alternative to meeting the ULETRU in-use performance standards in subsections 2477.5(ea)(1)(A)1. and (2)., an owner/operator may operate a TRU or TRU gen set in California meeting one of the *Alternative Technology* options listed below. Alternative Technologies qualify to meet the ULETRU in-use performance standard only if the TRU or TRU gen set is operated under the conditions included in the description listed below.

~~a.~~(A) Hybrid Electric TRU or Eelectric standby-equipped TRU may qualify as an Alternative Technology, provided the following conditions are met:

- ~~1.~~ that tThe TRU is not operated shall not operate under diesel engine power while at a nonretail facility, except during:
  - a. An emergency (as defined);
  - b. Normal ingress, egress, and yard maneuvering, limited to 5 minutes per movement inside the facility fenceline or property boundary; or
  - c. Unit/engine pre-trip inspections, troubleshooting diagnostics, and post-repair check-out (however, this exception does not apply to the initial van chill-down before loading);
2. The facility or facilities that a TRU is normally based or frequents to load or unload perishable goods shall be equipped with electric power plugs located in the parking areas and loading spaces and the TRU shall be plugged into these power plugs during initial chill-down and whenever the refrigerated van or container contains perishable products;
3. All nonretail delivery and pick-up points (as defined) that the E/S-equipped TRU frequents to load or unload goods shall be equipped with electric power plugs if the van load includes perishable goods. Electric power plugs shall be located in the parking areas and loading spaces and the TRU shall be plugged into these power plugs during initial chill-down and whenever the refrigerated van or container contain perishable goods and may need to operate;

4. The TRU engine run time at retail delivery points (as defined) shall not exceed 30 minutes, otherwise electric power plugs are also required at those retail delivery points and must be used to prevent engine operations that exceed 30 minutes at the delivery point;
5. The TRU shall be equipped with non-resettable engine hour meters and electric power use hour meters;
6. At least 50 percent of an owner's hybrid electric or electric standby-equipped TRUs shall be equipped with an electronic tracking systems by December 31, 2012, and 100 percent of an owner's hybrid electric or electric standby-equipped TRUs shall be equipped with electronic tracking systems by December 31, 2013; and
7. The TRU shall be registered in ARBER in accordance with section 2477.5(e).

- b.~~(B)~~ Cryogenic temperature control systems or hybrid cryogenic temperature control systems may qualify as an Alternative Technology, provided the following conditions are met:
1. that the TRU does not operate under diesel engine power while at a nonretail facility, except during:
    - a. An emergency;
    - b. Normal ingress and egress yard maneuvering; or
    - c. Unit/engine pre-trip inspections, diagnostics, and repair operations;
  2. The TRU engine run time at retail delivery points (as defined) shall not exceed 30 minutes, otherwise purely cryogenic temperature control shall be used at those retail delivery points to prevent engine operations that exceed 30 minutes at the delivery point;
  3. The TRU shall be equipped with non-resettable engine hour meter and cryogenic system use hour meter;
  4. The TRU shall be equipped with an electronic tracking system;  
and
  5. The TRU shall be registered in ARBER in accordance with section 2477.5(e).

- e.~~(C)~~ Alternative-fueled engines (see definition in subsection ~~(d)~~2477.4).  
If the engine is a CI engine, a VDECS is required.

Note: If the engine is not a compression ignition diesel fueled engine, this regulation would not apply, but the engine may have to meet other emission standards (e.g. large spark-ignited engine standards if >25 hp).

- d.~~(D)~~ Fuel exclusively with an alternative diesel fuel (see definition in subsection ~~(d)~~2477.4) that has been verified as a VDECS, provided it is used in accordance with the requirements of subsection 2477.5(eh)(21)(A) and the alternative diesel fuel contains no conventional diesel or CARB diesel fuel, except in trace amounts.
- e.~~(E)~~ Power by fuel cells. If a reformer is used with diesel fuel as the source of hydrocarbons, then emissions must be evaluated and verified through the *Verification Procedure Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines* (13CCR section 2700 – 2710).
- f.~~(F)~~ Equip with any other system approved by the Executive Officer to not emit diesel PM or increase public health risk while at a facility.

**~~(B)(b)~~ In-Use Compliance Dates:** In-use compliance dates are based upon the engine MY model year or effective MY model year (as defined in section 2477.4, as listed below, except as allowed in under subparagraphs ~~(e)(1)(B)~~5.a-2477.5(b)(5)(A) and (C)<sup>6,7</sup>. Compliance dates may also be extended if the requirements of subparagraphs 2477.5(f), (g), (k), (l) or (m) are met.

- 1.~~(1)~~ No owner or owner/operator shall operate a 2001 and older model year (MY) TRU or TRU gen set engine in California unless it meets the in-use performance criteria set forth in ~~paragraph (e)(1)(A)~~ section 2477.5(a) for
  - a.~~(A)~~ LETRU on or before December 31, 2008, and
  - b.~~(B)~~ ULETRU on or before December 31, 2015, as shown in Tables 5 and 6.
- 2.~~(2)~~ No owner or owner/operator shall operate a 2002 MY TRU or TRU gen set engine in California unless it meets the in-use performance criteria set forth in ~~paragraph (e)(1)(A)~~ section 2477.5(a) for
  - a.~~(A)~~ LETRU on or before December 31, 2009, and
  - b.~~(B)~~ ULETRU on or before December 31, 2016, as shown in Tables 5 and 6.
- 3.~~(3)~~ No owner or owner/operator shall operate a 2003 MY TRU or TRU gen set engine in California unless it meets the in-use performance criteria set forth in ~~subsection (e)(1)(A)~~2477.5(a) for

<sup>6</sup> Further explanation is provided in section 2477.5(i).

<sup>7</sup> Compliance dates may also be extended if the requirements of subparagraphs 2477.5(f), (g), (k), (l) or (m) are met.

a.(A) LETRU on or before December 31, 2010, and

b.(B) ULETRU on or before December 31, 2017, as shown in Tables 5 and 6.

4.(4) No owner or owner/operator shall operate a 2004 MY and subsequent MY TRU or TRU gen set engine in California unless it meets the in-use performance criteria set forth in paragraph (e)(1)(A) section 2477.5(a) for ULETRU on or before December 31<sup>st</sup> of the seventh year past the engine’s model year, as shown in Tables 5<sup>68</sup> and 6<sup>69</sup>, with the following exception:

a.(A) Less than 25 hp model year 2004 engines shall meet the in-use performance criteria set forth in paragraph (e)(1)(A) section 2477.5 (a), shown in Table 5, for:

1. LETRU on or before December 31, 2011, and

2. ULETRU by December 31, 2018.

**Table 5: <25 HP TRU and TRU Gen Set Engines  
In-Use Compliance Dates**

MY	In-Use Compliance Year <sup>79</sup>													
	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20
'01 & Older	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'02	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'03	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'04	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'05 <sup>810</sup>	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'06	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'07	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'08	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'09	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'10	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'11	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'12	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'13 <sup>8</sup>	■	■	■	■	■	■	■	■	■	■	■	■	■	U

<sup>68</sup> Model years 2013, and subsequent (not shown in tables 5 and 6), shall meet ULETRU by December 31<sup>st</sup> of the seventh year after the engine model year or effective model year, except as allowed under (e)(1)(B) section 2477.5(b)(5).

<sup>79</sup> Compliance date is December 31<sup>st</sup> of the compliance year shown. “MY” means model year. Black shaded areas are years with no in-use performance standard requirements since in-use compliance year precedes engine model year. Dark shaded areas without letter codes have no in-use performance standard requirements, pending in-use compliance date. “L” means must meet LETRU in-use performance standards. “U” means must meet ULETRU in-use performance standards.

<sup>810</sup> TRUs and TRU gen sets with MY 2005 engines and subsequent MY engines shall be required to comply with ULETRU requirements by the end of the seventh year after the model year or effective model year, except as allowed under subparagraph (e)(1)(B) subsection 2477.5(b)(5)(A).

**Table 6: ≥25 HP TRU and TRU Gen Set Engines  
In-Use Compliance Dates**

MY	In-Use Compliance Year <sup>911</sup>													
	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20
'01 & Older	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'02	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'03	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'04 <sup>4012</sup>	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'05	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'06	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'07	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'08	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'09	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'10	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'11	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'12	■	■	■	■	■	■	■	■	■	■	■	■	■	■
'13 <sup>8</sup>	■	■	■	■	■	■	■	■	■	■	■	■	■	■

5.(5) Requirements for TRUs or TRU gen sets that are equipped with flexibility engines and operated in California.

a.(A) Flexibility engines installed in TRUs and TRU gen sets manufactured prior to March 7, 2011, and operated in California shall meet the in-use performance standards of ~~subsection (e)(1)(A)~~ section 2477.5(a) by December 31<sup>st</sup> of the seventh year after the TRU or TRU gen set engine's manufacture year instead of the effective model year provided the TRU or TRU gen set owner registers the flexibility engine equipped TRU or TRU gen set in ARBER in accordance with ~~subsection (e)(1)(E)~~ section 2477.5(e) by May 6, 2011.

b.(B) To allow TRU and TRU gen set owners to meet the registration requirements of ~~subparagraph (a)~~ subsection (A) above, the original equipment manufacturer shall by April 6, 2011:  
 1. Provide the following unit and flexibility engine information to ARB in electronic format:

<sup>911</sup> Compliance date is December 31<sup>st</sup> of the compliance year shown. "MY" means model year. Black shaded areas are years with no in-use performance standard requirements since in-use compliance year precedes engine model year. Dark shaded areas without letter codes have no in-use performance standard requirements, pending in-use compliance date. "L" means must meet LETRU in-use performance standards. "U" means must meet ULETRU in-use performance standards.

<sup>4012</sup> TRUs and TRU gen sets with MY 2004 engines and subsequent MY engines shall be required to comply with ULETRU requirements by the end of the seventh year after the model year or effective model year, except as allowed under ~~subparagraph (e)(1)(B)~~ section 2477.5(b)(5)(A). Tier 4 final standards go into effect in 2013 which would meet ULETRU in-use performance standards in the 25 to less than 50 hp category. If the engines installed by original equipment manufacturers do not meet ULETRU in 2013, then ~~subparagraph (e)(1)(A)~~ section 2477.5(b)(5)(C) applies.

- ia. TRU or TRU gen set manufacturer;
- ii. TRU or TRU model name;
- iii. TRU or TRU gen set serial number;
- iv. TRU manufacture date;
- v. Engine manufacturer;
- vi. Engine Family;
- vii. Engine manufacture year; and
- viii. Engine serial number;

- ii. Notify the TRU or TRU gen set owners in writing that:
  - ia. The unit they own is equipped with a flexibility or TPEM engine; and
  - ib. The owner must register the TRU or TRU gen set that is equipped with a flexibility engine in ARBER by May 6, 2011;

- iii. Provide directly or through its dealers instructions and assistance on registration in ARBER to all owners of TRUs and TRU gen sets equipped with flexibility engines that request such help, which shall include specific instructions and assistance that ensures that information entered in ARBER is consistent with what appears on the unit label and engine emissions label, including the model year.

e.(C) The following requirements shall apply to flexibility engines installed in TRUs and TRU gen sets manufactured after March 7, 2011, and operated in California:

- i. The owner of a TRU or TRU gen set that is operated in California shall comply with the in-use performance standards set forth in subsection (e)(1)(A) 2477.5(a) by December 31<sup>st</sup> of the seventh year after the engine's effective model year.
- ii. The original equipment manufacturer shall provide the following a written disclosures to the ~~interested~~ ultimate purchaser of a TRU or TRU gen set that is equipped with a flexibility engine prior to its sale: in accordance with section 2477.13(a)(3).
  - i. ~~The TRU or TRU gen set has a flexibility engine that meets a less stringent emissions standard than was in effect at the time the flexibility engine was manufactured;~~
  - ii. ~~The effective model year of the flexibility engine;~~
  - iii. ~~If the owner registers the unit in ARBER, the owner must report the effective model year of the engine, not the model year of engine manufacture, and failure to do so may result in the owner being cited;~~

~~iv. If the TRU or TRU gen set is operated in California, the owner will be responsible at a future date for the engine meeting the ULETRU in-use standard based on the effective model year of the engine, in accordance with subsection (e)(1)(B)~~

(6) The manufacture year of the TRU unit may be used instead of the TRU engine model year to determine the TRU ATCM in-use performance standards that must be met and the related compliance dates; however, this exception only applies if the unit manufacture year shown on the TRU unit label is no more than one year later than the engine model year shown on the TRU engine emissions label. If the difference between the engine model year on the engine emissions label and the unit manufacture year is greater than one year, then the engine model year shall be used in accordance with subsections 2477.5(b)(1), (2), (3), and (4).

(A) If the owner complies with the TRU ATCM in-use performance standard by retrofitting with a VDECS, the engine model year shown on the engine emissions label shall be used to determine engine compatibility with the VDECS, in accordance with the Executive Order for that VDECS.

(B) If the owner of a TRU is required to apply for an ARB Identification Number (IDN), in accordance with section 2477.5(e), the engine model year that is shown on the engine emissions label shall be entered on the IDN application in the engine model year space.

~~(C)~~ **(c) Replacements Due to VDECS Failures.**

~~1.~~ (1) If a VDECS fails within its warranty period, the owner/operator of the TRU or TRU gen set must replace it with the same VDECS or a higher verification classification level, if available.

~~2.~~ (2) If a VDECS fails outside its warranty period and a higher verification classification level VDECS is available, then the owner/operator of the TRU or TRU gen set shall upgrade to the highest level VDECS required under paragraphs 2477.5(ea)(1)(A)1. and 2477.5(ea)(4)2. that is determined to be cost-effective by the Executive Officer.

~~(D)~~ **(d) In-Use Recordkeeping and Reporting.** In-use recordkeeping and reporting shall be completed by the owner or operator in accordance with the requirements of subsection ~~(f)(1)~~ following:-

(1) An owner that is also an operator, shall complete and maintain the operator report in accordance with section 2477.6(a).



- (2) An owner that has elected to comply by using a verified alternative diesel fuel shall comply with the recordkeeping requirements in section 2477.5(h)(1).
- (3) An owner that has elected to comply by using a hybrid electric TRU or electric standby-equipped TRU must meet the following recordkeeping, and reporting requirements for each unit.

(A) Beginning November 14, 2012, manual recordkeeping is required for all such units until automated monitoring, recordkeeping, and reporting is required under the phased compliance schedule in subparagraph (B), below. Manual records shall include the following, for each TRU that is equipped with electric standby or hybrid electric:

1. ARB Identification Number of the unit, issued under section 2477.5(e);
2. Date;
3. Address of each stationary location lasting more than 5 minutes. This record may be a location code for each stationary location, provided the owner or operator also provides a cross-reference of location codes with the corresponding physical addresses;
4. Time of arrival and departure, and the elapsed time calculated from those readings to show the duration of the stationary position;
5. Engine hour meter readings taken at arrival and departure and the elapsed time calculated from those readings to show the TRU engine run time while the vehicle is at the stationary location; and
6. Electric shore power driven electric motor hour meter readings taken at arrival and departure and the elapsed time that electric shore power drove the refrigeration system while the vehicle is at the stationary location.

(B) Automated monitoring, recordkeeping, and reporting is required for at least 50 percent of an owner's TRUs by December 31, 2012 and 100 percent of an owners TRUs by December 31, 2013. Automated monitoring, recordkeeping and reporting is required with an electronic tracking system (as defined in section 2477.4) and shall include data that includes the following for each stationary location lasting more than 5 minutes (300 seconds):

1. ARB Identification Number of the unit, issued under section 2477.5(e);
2. Date;

3. Address of each stationary location lasting more than 5 minutes (300 seconds). This record may be the GPS coordinates and a location code for each stationary location, provided the owner or operator also provides a cross-reference of location codes with the corresponding physical addresses;
4. Time of arrival and departure, and the elapsed time calculated from those readings to show the duration of the stationary position;
5. Engine hour meter readings taken at arrival and departure and the elapsed time calculated from those readings to show the TRU engine run time while the vehicle is at the stationary location;
6. Electric motor hour meter readings taken at arrival and departure and the elapsed time that electric shore power is powering the refrigeration system while the vehicle is at the stationary location; and
7. The electronic tracking system shall generate a report that lists all stationary locations lasting more than 5 minutes where the TRU engine operated for more than 30 minutes, resulting in a violation.

(C) Records shall be kept available for a minimum of three (3) years and shall be compiled and made available to ARB upon request.

(D) Record submittals shall include the owner's or responsible official's signature after the statement: "I certify under penalty of perjury under the laws of the State of California that the information provided is true, accurate, and complete."

(4) Hybrid cryogenic temperature control recordkeeping. An owner that has elected to comply by using a hybrid cryogenic temperature control system must meet the following automatic monitoring, recordkeeping, and reporting requirements with an electronic tracking system (as defined in section 2477.4). Automated recordkeeping shall include data that includes the following for each stationary location lasting more than 300 seconds (5 minutes):

(A) ARB Identification Number of the unit, issued under section 2477.5(e);

(B) Date;

(C) Location: GPS coordinates or coded, with full address in code look-up table;

(D) Time of arrival and departure, and the elapsed time calculated from those readings to show the duration of the stationary position;

(E) Engine hour meter readings taken at arrival and departure and the elapsed time calculated from those readings to show the TRU engine run time while the vehicle is stationary;

- (F) Cryogenic system use hour meter readings taken at arrival and departure and the elapsed time calculated from those readings to show the cryogenic system run time while the vehicle is stationary;
- (G) The electronic tracking system shall generate a report that lists all stationary locations lasting more than 5 minutes where the TRU engine operated for more than 30 minutes, resulting in a violation;
- (H) Records shall be kept available for a minimum of three (3) years and shall be compiled and made available to ARB upon request;  
and
- (I) Record submittals shall include the owner's or responsible official's signature after the statement: "I certify under penalty of perjury under the laws of the State of California that the information provided is true, accurate, and complete."

**(E)(e) ARB Identification Numbering Requirements.** Identification numbers (IDN) will be issued to help expedite the inspection procedure and prevent shipping delays<sup>13</sup>

4.(1) California-based TRUs and TRU gen sets:

- a.(A) On or before January 31, 2009, owners or owner/operators of all California-based TRUs and TRU gen sets subject to this regulation shall apply for an ARB IDN for all California-based TRUs or TRU gen sets operated by the owner or owner/operator by submitting an application that includes the information listed below.
  - 1. Company Information
    - a. Operator Company/business name, address, and contact information for the responsible official (e.g. title, phone number, email address, fax number).
    - b. Company/business tax identification number/federal employer identification number (EIN) or equivalent for other country (e.g. Canadian Business Number).
  - II. Owner name, address, and contact information (if other than operator).
  - 2. Rental or lease status. Indicate if the unit is a rental unit (no contract term) or a lease unit (under contract term, typically more than one year)
  - 3. Applicant identity indication. Indicate who is filling out application, either:
    - a. The owner (or an employee of owner), or
    - b. A third party entering the application information under a third party agreement between the owner or lessor and a consultant or lessee.
  - III.4. TRU or TRU gen set unit information:

<sup>13</sup> IDNs are obtained by registering a TRU or TRU gen set in the ARB's Equipment Registration (ARBER) system.

- a. Unit Type:
    - i. Truck TRU;
    - ii. Trailer TRU;
    - iii. Refrigerated railcar TRU;
    - iv. Refrigerated domestic shipping container TRU; or
    - v. TRU generator set.
  - b. make Unit manufacturer,
  - c. Unit model,
  - d. Unit model year, and
  - e. Unit serial number.
5. Other TRU or TRU generator set identifying numbers. Provide all that apply:
- a. If unit is installed on a truck or trailer, provide:
    - i. Vehicle Identification Number (VIN), and
    - ii. Vehicle license number, country of issuance, and state or province of issuance;
    - iii. Unique Bureau International de Container (BIC) Code, if trailer is multimodal
  - b. If unit is installed on refrigerated railcar, provide railcar reporting mark;
  - c. If unit is installed on domestic refrigerated shipping container, provide unique BIC Code;
  - d. If unit is a TRU gen set, provide unique BIC Code;
  - e. Provide company equipment number if company has labeled the equipment.
6. TRU status information. Indicate if the unit is:
- a. Active (unit is operational);
  - b. Removed from service (unit is scrapped or inactive for foreseeable future); or
  - c. Sold. If last registered owner sold unit, then they must provide:
    - i. Date of sale, and
    - ii. New owner's company name, address, and contact information
- IV.7. TRU engine information. Provide the following:
- a. Engine make, manufacturer;
  - b. Engine model;
  - c. Engine model year, or "MY"; and
  - d. Engine serial number;
  - e. Engine power rating. Indicate either:
    - i. Under 25 hp (under 19 kW), or
    - ii. 25 hp or greater (19 Kw or greater);
  - f. Engine family; and
  - g. Emissions standard tier that engine meets.
- V. Terminal or terminals that the TRU-equipped truck or trailer is assigned to, with address and contact information.

- VI. Other associated identification numbers, which may include (as applicable):
- i. ~~Vehicle Identification Number (VIN) of the TRU-equipped truck or trailer.~~
  - ii. ~~Vehicle license number of the TRU-equipped truck or trailer.~~
  - iii. ~~Railcar recording mark and car number.~~
  - iv. ~~Shipping container number (for TRU-equipped shipping containers only).~~
  - v. ~~Company equipment number (if any).~~
- VII. ~~Compliance status with in-use performance standards, under paragraph (e)(1)(A) requirements sections 2477.5(a) and (b). If compliance not as yet required, mark N/A.~~
- i. ~~Date when compliance was achieved.~~
  - ii. ~~What performance standard was met (e.g. LETRU or ULETRU).~~
  - iii. ~~How compliance was achieved (e.g. new compliant TRU, TRU engine replacement, or description of VDECS that was used).~~
  - iv. ~~Identify who did the installation work (if applicable).~~
    - a. Indicate if the ULETRU Early Compliance Extension has been granted
    - b. Indicate if compliance was achieved with an engine option:
      - i. Indicate if the engine currently in the unit is an original engine;
      - ii. Indicate if the engine currently in the unit is a new replacement engine and if so, provide:
        - I. Emissions standard tier that the engine meets; and
        - II. Installation date.
      - iii. Indicate if the engine currently in the unit is a rebuilt replacement engine installed to comply with the in-use requirements and if so, provide:
        - I. Emissions standard tier that the engine meets;
        - II. Rebuild year; and
        - III. Installation date.
    - c. Indicate if compliance was achieved with VDECS retrofit, and if so:
      - i. Provide the following from the VDECS label:
        - I. VDECS manufacturer name;
        - II. VDECS Family Name;
        - III. VDECS serial number;
        - IV. VDECS manufacture year; and
      - ii. Provide the VDECS installation date.
    - d. Indicate if compliance was achieved by using an Alternative Technology option under section 2477.5(a)(3), and if so provide the type used and the date installed or employed:
      - i. Electric standby-equipped TRU or hybrid electric TRU;

- ii. Hybrid cryogenic temperature controlled system;
  - iii. Alternative-fueled engine;
  - iv. Fueled exclusively with pure alternative diesel fuel;
  - v. Powered by fuel cells; or
  - vi. Other system approved by the Executive Officer.
  - e. If compliance was achieved by replacing an engine or retrofitting with a VDECS, provide the installer's company name, physical address, and contact information.
9. Indicate what state or province that the TRU or TRU gen set is based in:
- a. California; or
  - b. Outside of California. If based outside of California identify:
    - i. U.S. state;
    - ii. Mexican state; or
    - iii. Canadian province.
10. Owner's or responsible official's signature, after the statement: "I certify under penalty of perjury under the laws of the State of California that the information provided is true, accurate, and complete."
- ~~b.~~(B) Applications shall be submitted by one of the following methods:
- ~~f.~~1. Mail or deliver a physical report to ARB at the address listed immediately below:

~~CALIFORNIA AIR RESOURCES BOARD  
STATIONARY SOURCE DIVISION (TRU)  
P.O. BOX 2815  
SACRAMENTO, CA 95812~~

California Air Resources Board  
Stationary Source Division (SSD/ARBER)  
P.O. Box 2815  
Sacramento, CA 95812

- ~~h.~~2. ~~Electronically submit through ARB's the ARBER website web site. The web address will be identified in an advisory at:~~  
<http://www.arb.ca.gov/arber/arber.htm>
  - 3. Electronically submit by email to: arber@arb.ca.gov
- ~~e.~~(C) TRUs and TRU gen sets added to an owner's or owner/operator's TRU operations after January 31, 2009 shall be brought into compliance with subsection 2477.5(e)(4)(E). An application shall be submitted to ARB within 30 days of the unit entering the operator's control:
- ~~f.~~1. Requesting an ARB I.D. number for a new TRU or TRU gen set that was not previously numbered, or



accordance with subparagraph 2477.5(e)(1)(E)4.e., above. The non-California-based owner or owner/operator would then permanently affix or paint the identification number on the TRU or TRU gen set chassis in clear view, in accordance with subparagraph 2477.5(e)(1)(E)4.f.(F), above.

- (3) Owners or owner/operators may use alternative unique equipment identification markings instead of affixing an ARB IDN, provided the following conditions are met:
- (A) The owner or owner/operator registers the TRU or TRU gen set in ARBER and enters the unique equipment number in ARBER.
  - (B) The alternative identification number shall be truly unique. Examples of unique identification numbers include the Reporting Marks that are issued by the American Association of Railroads' contractor, RailInc, for their UMLER system and the BIC Codes issued by Bureau International de Containers. Company equipment numbers that are not truly unique on a worldwide basis do not qualify.
  - (C) Alternative identification numbers must be affixed or attached to both sides of the TRU gen set, shipping container (if the TRU is permanently attached), semitrailer, or railcar and meet all of the requirements of subparagraph 2477.5.(e)(1)(F).
  - (D) The ARB IDN shall be used in the Operator Report under section 2477.6(a).

**(F)(f) Early Compliance with LETRU In-Use Performance Standards.**

4.(1) For 2002 and older MY TRU and TRU gen set engines, owners or owner/operators or owners that meet the LETRU in-use performance standard earlier than required in paragraph ~~(e)(1)(B)~~ 2477.5(b) may apply to the Executive Officer for a delay in the ULETRU in-use performance standard. Except as provided below, early compliance would be achieved through any of the options available in paragraph ~~(e)(1)(A)~~ 2477.5(a).

a.(A) This delay would not be available to the owner or owner/operator or owner if the engine manufacturer of the replacement engine is using the early compliance with engine emissions standards in U.S. EPA's Averaging, Banking, and Trading Program (or California's equivalent program).

b.(B) Early compliance is conditioned upon real emission reductions (refer to definition in ~~subsection (d)~~ 2477.4) occurring earlier than the applicable compliance deadline.



~~e.~~(C) This delay may not be available to the owner or owner/operator or ~~owner~~ if public funds were used for early compliance. The applicant shall disclose whether public funds were used for any portion of early compliance and what program the funding came from.

~~2.~~(2) Early LETRU compliance with real emission reductions would allow specific units to delay compliance with ULETRU in-use performance standards by up to three years, according to the rounding conventions and examples listed below.

~~a.~~(A) Each year of early compliance with the LETRU in-use performance standards would be rewarded with 1 year delay in the ULETRU in-use performance standard.

~~i.~~1. One full year early compliance qualifies for one full year delay in meeting ULETRU compliance.

~~ii.~~2. Two full years early compliance qualifies for two full years delay in meeting ULETRU compliance.

~~iii.~~3. Three full years early compliance qualifies for three full years delay in meeting ULETRU compliance.

~~b.~~(B) A partial year of early LETRU compliance would be rounded to the nearest full year for the delayed ULETRU requirements.

~~i.~~1. Early LETRU compliance of 183 days or more in a calendar year would count toward a one year ULETRU delay.

~~ii.~~2. Early LETRU compliance of 182 days or less in a calendar year would not count toward a ULETRU delay.

~~3.~~(3) Upon receipt of an application to delay ULETRU compliance, the Executive Officer shall determine if the application demonstrates early compliance with LETRU in-use performance standards in accordance with ~~subsection (e)(1)(F)1-2477.5(f)(1)~~, and if the application is approved, shall delay the in-use ULETRU compliance date for specific TRUs and TRU gen sets operating in California in accordance with subparagraph ~~(e)(1)(F)2-2477.5(f)(2)~~.

~~4.~~(4) Upon approval of the application, ARB shall issue a certificate and ARB identification number in accordance with ~~subsection (e)(1)(E)1-e-2477.5(e)(1)(E)~~ which acknowledges early compliance with LETRU requirements and discloses the number of years delay granted, and resulting ULETRU compliance date.

5.(5) The owner or owner/operator shall maintain a legible copy of the certificate in a water-tight sleeve mounted inside the TRU or TRU gen set chassis housing. The owner or owner/operator shall paint the identification number in clear view in accordance with ~~subsection (e)(1)(E)1.f.2477(e)(1)(F)~~ on the specific TRU or TRU gen set that was granted the compliance extension.

**(g) ULETRU Extension for Compliance by Original Compliance Date**

(1) An owner of model year 2001 and older TRUs or TRU gen sets that complied by the original December 31, 2008, compliance date may qualify for a one year extension to the ULETRU compliance date, provided the following conditions are met:

(A) The original engine was retrofit with a Level 2 VDECS, or

(B) The original TRU was repowered with a replacement engine meeting either:

1. Tier 4 final Non-Road/Off-Road Emission Standards, if the engine is rated at less than 25 hp, or
2. Tier 4 interim Non-Road/Off-Road Emission Standards, if the engine is rated between 25 hp and less than 50 hp, or

(C) The original TRU was replaced with a new unit equipped with an engine meeting either:

1. Tier 4 final Non-Road/Off-Road Emission Standards, if the engine is rated at less than 25 hp, or
2. Tier 4 interim Non-Road/Off-Road Emission Standards, if the engine is rated between 25 hp and less than 50 hp, and

(D) The TRU or TRU gen set is registered in ARBER, the compliance information is complete and correct, and the IDN has been affixed to both sides of the TRU or TRU gen set housing.

(2) Owner must apply for the ULETRU extension at least 90 days before the ULETRU compliance date by submitting an ARB application that includes the following information:

(A) Owner name and Owner-Operator Number (OON);

(B) The affected unit's IDN;

(C) A statement that the unit was in compliance on or before December 31, 2008, and the IDN has been affixed to both sides of the TRU or TRU gen set housing in accordance with section 2477.5(e)(1)(F);

(D) Documentation that demonstrates that the LETRU in-use standard was met before December 31, 2008;

(E) In the case of a unit replacement, documentation on the old noncompliant unit that was replaced; and

(F) Owner's or responsible official's signature, after the statement: "I certify under penalty of perjury under the laws of the State of California that the information provided is true, accurate, and complete."

(3) The owner or responsible official must submit an application for "ULETRU Extension for Compliance by the Original Compliance Date" to the Executive Officer by one of the following methods:

(A) Mail or deliver to ARB at the address listed immediately below:

California Air Resources Board  
Stationary Source Division (ARBER/TRU)  
P.O. Box 2815  
Sacramento, CA 95812

(B) Electronically submit by email to: [arber@arb.ca.gov](mailto:arber@arb.ca.gov); or

(C) Electronically submit through ARB's ARBER website at:  
<http://www.arb.ca.gov/arber/arber.htm>

(4) Upon receipt of application for ULETRU extension, the Executive Officer shall determine if the application demonstrates the unit qualifies for ULETRU extension.

(5) Upon approval of the application, the Executive Officer shall:

(A) Change the "Compliant Through" date in ARBER; and

(B) Notify the owner with a revised ARBER TRU Certification showing the new "Compliant Through" date.

**(2)(h) Fuel Requirements.**

~~(A)(1)~~ Owners or Owner/Operators Choosing to Use Alternative Diesel Fuels. Owners or owner/operators choosing to use alternative diesel fuels in compression ignition TRU and TRU gen set engines to meet the requirements of subsection (e)(1)2477.5(a) shall:

~~1.(A)~~ Maintain records in accordance with subsection (f)(1)(B) of this regulation that document exclusive use of the chosen fuel or additive for each affected engine and hours of engine operation. Appropriate records would be copies of receipts or invoices of appropriate fuel and/or fuel additive and engine hour meter logs.

1. Records shall be kept available for a minimum of three (3) years and shall be compiled and made available to the ARB upon request.

~~2.(B)~~ Use only fuel that is a VDECS alternative diesel fuel that contains no conventional diesel or CARB diesel fuel in TRUs or TRU gen sets operated in California.

~~3.(C)~~ Permanently affix a label in clear view near the fill spout that identifies the proper fuel that is required to be in compliance.

~~4.(D)~~ In the event that the owner or owner/operator decides to revert to using conventional diesel or CARB diesel fuel, the owner or owner/operator shall comply with the requirements of subsection (e)(1)2477.5(a) within 10 days of discontinuation of alternative diesel fuel use. Within 10 days of discontinuation, the owner or owner/operator shall notify the Executive Officer in writing of this change in fuel use and shall include an update to any ARB I.D. number application the compliance information submitted to ARBER or annual report submitted to comply with subsections (e)(1)(E), 2477.5(e), (e)(1)(F) 2477.5(f), or (f)(1)2477.6.

~~(B)(2)~~ Owners or Owner/Operators that Retrofit TRUs or TRU Gen Sets with a VDECS. Owners or owner/operators that retrofit TRUs or TRU gen sets with a VDECS that requires certain fuel properties to be met in order to achieve the required PM reduction or PM emissions shall only fuel the subject TRU or TRU gen set with fuel that meets these specifications when operating in the state of California. In addition, owners or owner/operators that choose a VDECS that requires certain fuel properties to be met in order to prevent damage to the VDECS or an increase in toxic air contaminants, other harmful compounds, or in the nature of the emitted PM shall only fuel the subject TRU or TRU gen set with fuel that meets these specifications.

**(i) Compliance by Replacing Engines.**

A new or rebuilt replacement engine shall meet more stringent emissions standards than the original engine. The new or rebuilt replacement engine must subsequently meet the in-use performance standard requirements of section 2477.5(a) by the compliance dates of section 2477.5(b), which are based on the new or rebuilt replacement engine's model year or effective model year (see definition).

(1) Current tier new replacement engines. Current tier new replacement engines shall use the engine model year to determine requirements and compliance dates. The engine model year is shown on the engine emissions label if the engine is manufactured when an emissions standard tier is in effect.

Emissions label language examples include, but are not limited to:

(A) "THIS ENGINE MEETS 2008 INT. TIER 4 EMISSION REGULATIONS FOR U.S. EPA AND CALIFORNIA NONROAD CI ENGINES." This label language indicates the engine is a current-tier 2008 model year engine for the purposes of in-use requirements and registration.

(B) "THIS ENGINE COMPLIES WITH U.S. EPA AND CALIFORNIA REGULATIONS FOR 2009 M.Y. NONROAD AND STATIONARY/OFF-ROAD DIESEL ENGINES." This label language indicates the engine is a current-tier 2009 model year engine for the purposes of in-use requirements and registration.

(2) Prior tier new replacement engines. Prior-tier new replacement engines shall use the effective model year (see definition) to determine requirements and compliance dates. The manufacture year and the installation year of a prior tier replacement engine shall not be used to determine the in-use requirements and the compliance dates. Prior-tier new replacement engine emissions labels typically do not clearly show the effective model year, but provide dates that indicate the prior-tier emissions standard that the engine meets. The year in the first sentence of the replacement engine emission label is the first year of the tier met. The date in the second sentence of the replacement engine label is the first day of the next tier standard. Table 1 in section 2477.4 and the following example of replacement engine emissions label language show how these labels shall be interpreted for this subarticle:

(A) "THIS ENGINE COMPLIES WITH CALIFORNIA OFF-ROAD AND U.S. EPA NONROAD EMISSION REQUIREMENTS FOR 2004 ENGINES UNDER 13 CCR 2423(j) AND 40 CFR 89.1003(b)(7). SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN TO REPLACE AN OFF-ROAD ENGINE BUILT BEFORE JANUARY 1, 2008 MAY BE A VIOLATION OF CALIFORNIA AND FEDERAL LAW SUBJECT TO CIVIL PENALTY." The first sentence includes the year 2004 (the first year of the tier). The second sentence indicates the next tier started on January 1, 2008, so the last year of the tier the engine met would be 2007.

The center column of Table 1 shows the effective years 2004 to 2007 matches a Tier 2 engine in the 25-50 hp (trailer) category.

(3) Rebuilt replacement engines. Rebuilt replacement engines must meet the requirements of section 2477.16.

(A) Prior tier rebuilt replacement engines. If the rebuilt engine meets a prior tier emissions standard, then the effective model year (see definition) shall be used to determine the requirements and compliance dates. The rebuild year and the installation year of a prior tier replacement engine shall not be used to determine the in-use requirements and the compliance dates.

(B) Current tier rebuilt replacement engines. If the rebuilt engine meets the tier standard that is currently in effect, then the model year is the year that the rebuild is completed and this year shall be used to determine the requirements and compliance dates.

**(j) Mobile Catering Company Exemption Requirements.**

(1) The Executive Officer may grant a one year exemption to mobile catering companies for TRUs that are not compliant with the in-use performance standards under section 2477.5(a) if the following conditions are met:

(A) The mobile catering company must be under contract with the National Interagency Fire Center to provide mobile catering food service to emergency incidents for the year that the exemption would apply.

(B) All California-based TRUs shall comply with the ARBER registration requirements under section 2477.5(e) and have an ARB Identification Number (IDN) affixed to both sides of the TRU housing. All TRUs owned or leased by the mobile catering company that are based outside of California that the owner wants included in the mobile catering company exemption must be registered in ARBER in accordance with section 2477.5(e).

(C) The mobile catering company must submit an application each year for a Mobile Catering Company Exemption to the Executive Officer by one of the following methods:

1. Mail or deliver to ARB at the address listed immediately below:

California Air Resources Board  
Stationary Source Division (ARBER/TRU)  
P.O. Box 2815  
Sacramento, CA 95812

2. Electronically submit by email to: [arber@arb.ca.gov](mailto:arber@arb.ca.gov); or

3. Electronically submit through ARB's ARBER website at:  
<http://www.arb.ca.gov/arber/arber.htm>
- (D) Applications for Mobile Catering Service Exemption shall include the following information:
1. Business name;
  2. Business street address, state, zip code;
  3. Business phone number;
  4. Responsible official's name;
  5. Responsible official's mobile phone number;
  6. Federal Tax Identification Number (EIN) and Owner-Operator Number (OON) issued to the owner by ARBER when they registered in ARBER.
  7. A list of ARB IDNs issued by ARBER for all TRUs that are to be included under the exemption. For TRUs that are not in compliance with the in-use standards under section 2477(a) that do not have ARB IDNs, provide the unit serial number instead of the IDN on this list;
  8. A copy of the mobile catering company's contract with the National Interagency Fire Center shall be provided with the application; and
  9. Owner's or responsible official's signature, after the statement: "I certify under penalty of perjury under the laws of the State of California that the information provided is true, accurate, and complete."
- (E) The owner shall update the application information within 30 days of any changes to the information submitted. For example, if the owner buys, sells, or leases TRUs, the IDN and unit serial number list required under subparagraph (j)(1)(D)7. shall be amended.
- (F) The owner shall provide the driver with a copy of the current Mobile Catering Service Exemption that has been approved by the Executive Officer and the Mobile Food and Shower Service Request Form issued by the National Interagency Fire Center for the incident they are traveling to or from.
- (G) During transit on California highways, the driver must, upon request:
1. Present to the ARB inspector the Mobile Catering Service Exemption that has been approved by the Executive Officer and the Mobile Food and Shower Service Request Form issued by the National Interagency Fire Center, and
  2. Allow the ARB inspector to inspect the TRU to confirm the Mobile Catering Service exemption applies to the equipment.
- (H) All circumstances at the time of inspection shall be consistent with the Mobile Catering Service Exemption that has been approved by the Executive Officer and the Mobile Food and Shower Service Request Form issued by the National Interagency Fire Center.
- (I) Mobile Catering Company Exemptions shall expire on December 31<sup>st</sup> of each year. Mobile catering companies shall re-apply for this exemption annually.

**(k) Compliance Extension for In-Use Performance Standards Based on Unavailability of Compliance Technology.**

(1) If there is no compliance technology available for a specific TRU or TRU gen set within six months of a compliance date, the Executive Officer may grant a one year extension of the compliance deadline, provided the following conditions are met:

(A) A person or applicant must submit a written application to the Executive Officer that demonstrates the absence of any suitable compliance option that can be used on the specific equipment and the owner cannot otherwise meet the requirements of section 2477.5(a) by the compliance dates of section 2477.5(b). The application for and issuance of any extension pursuant to this subsection shall be subject to the following requirements:

1. Except for the units for which the extension is sought, the applicant shall demonstrate that all other units subject to the owner or operator's direct control meet the requirements of sections 2477.5(a) and (b);
2. The application shall be submitted to and received by the Executive Officer no later than six months before the compliance date of the engine for which the extension is requested;
3. The application shall identify each unit and engine for which the extension is requested;
4. For each engine identified in paragraph 2477.5(k)(1)(A)3., immediately above, the applicant shall provide a detailed description of the reasons and factors that serve as the basis for the applicant's claim that no suitable control technologies are available. The description shall include, without limitation, detailed engineering diagrams and calculations that support the applicants claim that there are no suitable control technologies available.
  - a. For a replacement engine to be determined suitable or unsuitable, the concerns that will be considered are if the replacement engine will physically fit and functionally perform in the equipment.
5. Owners or responsible officials shall provide their signature, after the statement: "I certify under penalty of perjury under the laws of the State of California that the information provided is true, accurate, and complete."
6. The owner or responsible official must submit an application for Compliance Extension to the Executive Officer by one of the following methods:
  - a. Mail or deliver to ARB at the address listed immediately below:

California Air Resources Board  
Stationary Source Division (ARB/ER/TRU)  
P.O. Box 2815  
Sacramento, CA 95812



- b. Electronically submit by email to: [arber@arb.ca.gov](mailto:arber@arb.ca.gov); or
- c. Electronically submit through ARB's ARBER website at: <http://www.arb.ca.gov/arber/arber.htm>
- 7. The TRU or TRU gen set shall be registered in ARBER under section 2477.5(e).

(B) The Executive Officer may grant additional one-year extensions provided the same procedures are followed, as described in section 2477.5(k)(1), immediately above.

**(I) Compliance Extension for In-Use Performance Standards Based on Delays Due to Private Financing, Equipment Manufacture Delays, or Installer Delays.**

(1) The Executive Officer may grant a one-time, maximum four month extension to the normal compliance date set forth in section 2477.5(b) for meeting the in-use performance standards set forth in section 2477.5(a), provided certain conditions are met:

(A) The owner must have ordered the compliance technology from the manufacturer no later than two months before the compliance date for VDECS retrofit compliance technologies and no later than four months before the compliance date for engine replacements, unit replacements, and trailer replacements, and the purchase order must be consistent with these limits:

(B) The TRU or TRU gen set is registered in ARBER;

(C) An extension application is submitted before the compliance deadline that explains in detail why a compliance extension is needed and how much additional time to comply is needed, including:

1. If delivery is the cause for delay, explain the status, and provide documentation from the manufacturer to demonstrate this is true, along with an updated delivery schedule.
2. If installation is the cause for delay, report the date that compliance technology was delivered, explain the installation status and provide documentation from the installer to demonstrate the facts, along with an updated installation schedule.
3. If there are other circumstances causing the delay, such as financing, explain the status and provide documentation from the financier to demonstrate this is true, along with an updated schedule.
4. The owner or responsible official shall provide their signature, after the statement: "I certify under penalty of perjury under the laws of the State of California that the information provided is true, accurate, and complete."

5. The owner or responsible official must submit an application for Compliance Extension to the Executive Officer by one of the following methods:

a. Mail or deliver to ARB at the address listed immediately below:

California Air Resources Board  
Stationary Source Division (ARBER/TRU)  
P.O. Box 2815  
Sacramento, CA 95812

b. Electronically submit by email to: [arber@arb.ca.gov](mailto:arber@arb.ca.gov); or

c. Electronically submit through ARB's ARBER website at:  
<http://www.arb.ca.gov/arber/arber.htm>

**(m) ULETRU Extension for Compliance with LETRU.**

(1) The ULETRU compliance dates required under subparagraphs 2477.5(b)(1) through (4) may be extended one year for TRUs or TRU gen sets equipped with MY 2003 or older engines if they complied by meeting the LETRU In-Use Performance Standard by the compliance dates listed below and the following qualifications are met:

(A) Compliance with LETRU was achieved by the following compliance dates:

1. December 31, 2009 for MY 2001 and older engines;
2. December 31, 2009 for MY 2002 engines; and
3. December 31, 2010 for MY 2003 engines.

(B) The original engine met the LETRU in-use standard by being retrofit with a Level 2 VDECS; or

(C) The unit was repowered with a replacement engine meeting the LETRU in-use standard:

1. Tier 4 final Non-Road/Off-Road Emission Standards, if the engine is rated at less than 25 hp
2. Tier 4 interim Non-Road/Off-Road Emission Standards, if the engine is rated between 25 hp and less than 50 hp

(D) The original TRU or TRU gen set was replaced with a new TRU or TRU gen set that is equipped with an engine that meets the LETRU in-use performance standard:

1. Tier 4 final Non-Road/Off-Road Emission Standards, if the engine is rated at less than 25 hp, or
2. Tier 4 interim Non-Road/Off-Road Emission Standards, if the engine is rated between 25 hp and less than 50 hp, or

(E) The unit is registered in ARBER under subparagraph 2477.5(e)

(F) Owner must apply for the ULETRU extension by submitting an application to the Executive Officer at least 90 days before the ULETRU compliance date that includes the following information:

1. Owner name and Owner-Operator Number (OON);

2. The affected unit's IDN;
  3. A statement that the unit was in compliance on or before the compliance date required under section 2477.5(m)(1)(A), above;
  4. Documentation that demonstrates that the LETRU in-use standard was met before the compliance date required under section 2477.5(m)(1)(A), above;
  5. In the case of a unit replacement that meets LETRU, additional information that demonstrates the old noncompliant unit that was replaced, including:
    - a. A statement that the owner replaced a MY 2003 or older (actual model year must be specified) TRU or TRU gen set with a new TRU or TRU gen set that was equipped with an engine that is certified to meet a new engine emissions standard that meets the LETRU in-use performance standard;
    - b. Receipts for the purchase of the new TRU or TRU gen set, dated on or before the compliance date required under section 2477.5(m)(1)(A), above;
    - c. Documentation for the old, replaced TRU or TRU generator set that supports the statement in subparagraph 2477.5(m)(1)(F)5.a., above; and
  6. Owner's or responsible official's signature, after the statement: "I certify under penalty of perjury under the laws of the State of California that the information provided is true, accurate, and complete."
- (G) The owner or responsible official must submit an application for ULETRU Compliance Extension for Compliance with LETRU for TRU or TRU gen set replacement under subparagraph 2477.5(m)(1)(C), above, to the Executive Officer by one of the following methods:

1. Mail or deliver to ARB at the address listed immediately below:

California Air Resources Board  
Stationary Source Division (ARBER/TRU)  
P.O. Box 2815  
Sacramento, CA 95812

2. Electronically submit by email to: [arber@arb.ca.gov](mailto:arber@arb.ca.gov); or
3. Electronically submit through ARB's ARBER website at: <http://www.arb.ca.gov/arber/arber.htm>

**(n) Safe Passage for Noncompliant Equipment Traveling in California.**

- (1) The Executive Officer may grant a safe passage permit to a TRU or TRU gen set owner to travel on California highways with a specific noncompliant TRU or TRU gen set, provided the following conditions are met:

- (A) The purpose of traveling on California highways is to take the noncompliant equipment to a dealer or installer to bring the equipment into compliance.
- (B) Only one permit shall be allowed if the specific TRU or TRU gen set must comply with the ULETRU in-use standard, and two permits shall be allowed if the specific TRU or TRU gen set must comply with both the LETRU and ULETRU in-use standards.
- (C) The TRU or TRU gen set shall not be operating (with the engine running) while in a noncompliant state in California;
- (D) No temperature-sensitive products shall be transported in a vehicle with a noncompliant TRU or TRU gen set;
- (E) The owner shall submit an application for a safe passage permit to the Executive Officer. Safe passage permit applications shall be submitted by one of the following methods:
  - 1. Mail or deliver a physical report to ARB at the address listed immediately below:

California Air Resources Board  
Stationary Source Division (ARBER/TRU)  
P.O. Box 2815  
Sacramento, CA 95812

- 2. Electronically submit by email to: [arber@arb.ca.gov](mailto:arber@arb.ca.gov)
- 3. Electronically submit through ARB's ARBER website at: <http://www.arb.ca.gov/arber/arber.htm>
- (F) Applications for safe passage permits shall include the following information:
  - 1. Owner's name;
  - 2. Business name (if different);
  - 3. Owner's street address, state, zip code;
  - 4. Contact person's name;
  - 5. Contact person's business phone number;
  - 6. Date(s) transport will take place;
  - 7. Statement that the reason for transporting the noncompliant equipment on California highways is strictly to take the noncompliant equipment to a dealer or installer to bring the equipment into compliance;
  - 8. TRU or TRU gen set serial number;
  - 9. Vehicle Identification Number (VIN), BIC Code (for TRU gen sets and domestic shipping containers), or railcar reporting mark;
  - 10. Physical address of starting location or point of entry into California;
  - 11. Dealer's or installer's business name and physical address where compliance technology will be installed; and
  - 12. Owner's or responsible official's signature, after the statement: "I certify under penalty of perjury under the laws of the State of California that the information provided is true, accurate, and complete."
- (G) The Executive Officer shall provide a decision within 15 days of the application submittal.

- (H) The owner shall provide the driver with a copy of the safe passage permit that has been approved by the Executive Officer.
- (I) During transit on California highways, the driver must, upon request:
1. Show an inspector that no temperature-sensitive products are being transported;
  2. Present to the inspector the safe passage permit for the noncompliant TRU or TRU gen set that has been approved by the Executive Officer; and
  3. Allow the inspector to inspect the TRU or TRU gen set to confirm the permit applies to the noncompliant equipment.
- (J) All circumstances at the time of inspection shall be consistent with the safe passage permit.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

**(f) Monitoring, Recordkeeping, and Reporting Requirements.**

~~(1) TRU and TRU Gen Set Operator Recordkeeping and Reporting.~~

**2477.6 Requirements for Terminal Operators.**

**(A)(a) Operator Reporting.**

- ~~4.~~(1) All terminal operators subject to this regulation shall submit an Operator Report to ARB by January 31, 2009, for each terminal located in California that shall include the following information:
- a.(A) Terminal Operator name, address, and contact information for the responsible official (phone number, email address, fax number).
  - b.(B) List of all terminals owned or leased by the operator located within California, with Terminal address, phone number, and terminal contact name for each California terminal where TRUs or TRU generator sets are garaged, maintained, operated, or dispatched from.
  - c.(C) TRU and TRU gen set inventory information List of ARB Identification Numbers issued in accordance with section 2477.5(e) for each all TRUs and TRU gen sets based in California that is owned or leased by the operator assigned to each California terminal:
    - I. ~~TRU or gen set make, model, model year, and serial number.~~
    - II. ~~TRU owner, and if other than operator, owner name, address, and contact.~~

- III. ~~Engine make, model, model year, and serial number.~~
- IV. ~~Terminal(s) that the TRU is assigned to.~~
- V. ~~ARB TRU or TRU gen set identification number, if already issued. If the ARB identification number has not been issued or there has been a change in the other identification numbers listed below since the prior annual report, then provide the following identification numbers (as applicable):~~
  - i. ~~Vehicle Identification Number.~~
  - ii. ~~Vehicle license number.~~
  - iii. ~~Railcar recording mark and car number.~~
  - iv. ~~Shipping container number (for TRU-equipped shipping containers only).~~
  - v. ~~Company equipment number.~~
- VI. ~~Compliance status with paragraph (e)(1)(A) requirements.~~

~~2.(2)~~ The Operator Report shall be updated within 30 days when changes to any of the above operator information occur. An Operator Report shall be submitted to ARBER within 30 days of the start-up of any new facility and shall be removed from ARBER within 30 days of a terminal shutting down.

~~a.(A)~~ Operator Reports shall be submitted by one of the following methods:

- ~~1.~~ Mail or deliver a physical report to ARB at the address listed immediately below:

~~CALIFORNIA AIR RESOURCES BOARD  
STATIONARY SOURCE DIVISION (TRU)  
P.O. BOX 2815  
SACRAMENTO, CA 95812~~

California Air Resources Board  
Stationary Source Division (ARBER/TRU)  
P.O. Box 2815  
Sacramento, CA 95812

- ~~II.2.~~ Electronically submit through ARB's ARBER website web site at: http://www.arb.ca.gov/arber/arber.htm. The web address will be identified in an advisory.
3. Electronically submit by email to: arber@arb.ca.gov

~~3-(3)~~ Failure to report or submittal of false information is a separate violation of state law of this rule and subject to civil penalty.

**~~(B) Alternative Diesel Fuel Use and Fuel Additive Recordkeeping and Reporting.~~**

- ~~1.~~ Operators that choose a compliance pathway that involves the use of alternative diesel fuel in accordance with subparagraph (e)(1)(A)3.d. (e.g. B100 biodiesel fuel or ultra-low aromatic synthetic diesel fuel) and/or a VDECS that includes the use of a fuel additive (e.g. fuel borne catalyst) shall maintain records that document exclusive use of the chosen fuel or additive for each affected CI engine and hours of operation. Appropriate records would be copies of receipts or invoices of appropriate fuel and/or fuel additive and daily operating hour logs.
- ~~2.~~ Records shall be kept available for a minimum of three (3) years and shall be compiled and made available to the ARB upon request.
- ~~3.~~ Failure to keep records or submittal of false information is a violation of state law subject to civil penalty.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

**2477.7 Requirements for Drivers.**

- (a) Beginning January 1, 2013, a driver shall not operate a TRU-equipped truck or tractor-trailer equipped with a TRU or TRU gen set on a California highway unless the TRU or TRU gen set complies with section 2477.5(a).
- (b) A driver must, upon request, provide the following available information to authorized enforcement personnel:
  - (1) Driver's license;
  - (2) Truck or tractor registration;
  - (3) Trailer registration;
  - (4) Bill of lading or freight bill with origin and destination of freight being transported, the consignor (shipper) and consignee (receiver);
  - (5) The company name and contact information of the carrier that dispatched the driver; and

- (6) The company name and contact information of the business entity (e.g. shipper, freight broker, freight forwarder, or receiver) that arranged, hired, or contracted for the transport of the perishable goods being hauled, subject to the requirements in sections 2477.8, 2477.9, 2477.10, and 2477.11.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

### **2477.8 Requirements for Freight Brokers and Freight Forwarders.**

- (a) Beginning January 1, 2013, freight brokers and freight forwarders that arrange, hire, contract for, or dispatch the transport of perishable goods in TRU-equipped or TRU gen set-equipped trucks, tractor-trailers, shipping containers, or railcars on California highways or railways must:
- (1) Require the carriers they hire or contract with for transport of perishable goods, to only dispatch TRU-equipped trucks, trailers, shipping containers, and railcars or TRU gen sets that comply with section 2477.5(a) if they travel on California highways or railways.
  - (2) Provide the following information to the carrier for their dispatched driver who will be traveling on a California highway or railway:
    - (A) Freight broker's or freight forwarder's business name;
    - (B) Freight broker's or freight forwarder's street address, state, zip code;
    - (C) Freight broker's or freight forwarder's contact person's name; and
    - (D) Freight broker or freight forwarder contact person's business phone number.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

### **2477.9 Requirements for Motor Carriers.**

- (a) Beginning January 1, 2013, motor carriers that dispatch TRU-equipped trucks, trailers, or shipping containers equipped with a TRU or TRU gen set that travel on a highway within California must:
- (1) Only dispatch TRUs or TRU gen sets that comply with section 2477.5.
  - (2) Provide the following information to a dispatched driver who will be traveling on a highway within California:
    - (A) Carrier's business name;
    - (B) Carrier's street address, state, zip code;
    - (C) Carrier contact person's name; and
    - (D) Carrier contact person's business phone number.



(3) Provide the dispatched driver with the business name, address, contact person, and phone number of the business entity (e.g. freight broker, freight forwarder, shipper or receiver) that arranged, hired, contracted for, or dispatched the transport of the perishable goods being hauled.

(b) Carriers may also have to comply with terminal operator requirements, under section 2477.6, if they have terminals located in California.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

### **2477.10 Requirements for California-Based Shippers.**

(a) Beginning January 1, 2013, California-based shippers that arrange, hire, contract for, or dispatch the transport of perishable goods in TRU-equipped trucks, trailers, shipping containers, or railcars, or TRU gen sets on California highways or railways must:

- (1) Dispatch TRUs or TRU gen sets that comply with section 2477.5(a) if they travel on California highways or railways; or
- (2) Require the carriers they hire or contract with for transport of perishable goods, to only dispatch TRUs or TRU gen sets that comply with section 2477.5(a) if they travel on California highways or railways; and
- (3) Provide the following information to the carrier or a dispatched driver who will be traveling on a highway within California:
  - (A) Shipper's business name and address;
  - (B) Receiver's business name and address;
  - (C) Freight broker or forwarder business name and address (if any); and
  - (D) Contact person's name, and phone number at the shipper, broker, or receiver with knowledge of the transport arrangements.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

### **2477.11 Requirements for California-Based Receivers.**

(a) Beginning January 1, 2013, California-based receivers that arrange, hire, contract for, or dispatch the transport of perishable goods in TRU-equipped trucks, trailers, shipping containers, or railcars; or TRU gen sets on California highways or railways must:

- (1) Dispatch TRUs or TRU gen sets that comply with section 2477.5(a) if they travel on California highways or railways; or

- (2) Require the carriers they hire or contract with for transport of perishable goods, to only dispatch TRUs or TRU gen sets that comply with section 2477.5(a) if they travel on California highways or railways; and
- (3) Provide the following information to the carrier or a dispatched driver who will be traveling on a highway within California:
  - (A) Shipper's business name, address;
  - (B) Receiver's business name, address;
  - (C) Freight broker or forwarder business name and address (if any); and
  - (D) Contact person's name, and phone number at the shipper, broker, or receiver with knowledge of the transport arrangements.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

## **2477.12 Requirements for Lessors and Lessees.**

(a) Lessors shall be subject to all of the following:

- (1) The lessor is responsible for the owner requirements set forth in section 2477.5. See the definition of "owner" in section 2477.4 for clarification related to banks and financial institutions.
  - (A) The lessor may delegate the responsibility for applying for an IDN (registering in ARBER) under section 2477.5(e) to the lessee, if the following conditions are met:
    - 1. The lease contract must show clear delegation of the ARBER registration requirements to the lessee;
    - 2. The lessor must submit third party agreement confirmation information for leased units to ARB at least 10 days prior to the lessee applying for an IDN. The following information is required:
      - a. Unit serial numbers for each TRU or TRU gen set;
      - b. Unique company equipment number;
      - c. Vehicle license number;
      - d. Vehicle Identification Number (VIN);
      - f. Lessor company name, address, federal tax ID (EIN), contact person, and contact information;
      - g. Lessee company name, address, federal tax I.D (EIN), contact person, and contact information;
      - e. Copy of the contract pages of the lease contract with the language highlighted that identifies the lessee as the responsible party for registration; and
      - f. Owner's/lessor's or responsible official's signature, after the statement: "I certify under penalty of perjury under the laws of the State of California that the information provided is true, accurate, and complete."

3. The lessor must submit third party agreement confirmation information for leased units to the Executive Officer by one of the following methods:  
a. Mail or deliver to ARB at the address listed immediately below:

California Air Resources Board  
Stationary Source Division (ARBER/TRU)  
P.O. Box 2815  
Sacramento, CA 95812

b. Electronically submit by email to: arber@arb.ca.gov

4. The lessor must notify the lessee in writing of this delegation.

(B) The lessor shall not delegate owner requirements for complying with the in-use standards under section 2477.5(a) to the lessee unless the lessor is a bank or financial institution (see definition of "owner" in section 2477.4).

(2) When TRUs or TRU gen sets are at a lessor's California terminal for 30 or more days, the lessor shall be subject to the operator report requirements set forth in section 2477.6.

(b) Lessees shall be subject to all of the following:

(1) The terminal operator requirements set forth in section 2477.6 if a leased or rented TRU or TRU generator set has been assigned to the lessee's California terminal for 30 or more days.

(2) If delegated by contract and the lessor has submitted third party agreement confirmation information for leased units to ARB under section 2477.12(a)(1)(A) and notified the lessee of delegation under section 2477.12(a)(1)(A)3., the lessee is responsible for the registration requirements of section 2477.5(e) and shall complete all of the following:

(A) Submit a registration application for an IDN after at least 10 days of the lessor submitting the third party agreement confirmation information for leased units to ARB, but no more than 30 days after the lessor's notice;

(B) Submit a copy of the ARBER TRU Certification to the lessor within 30 days after registration in ARBER is completed and an ARBER TRU Certification is issued; and

(C) Affix (attach) the IDN to the TRU or TRU gen set housing within 30 days in accordance with subparagraph 2477.5(e)(1)(F).

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

**2477.13 Requirements for TRU and TRU Gen Set Original Equipment Manufacturers.**

(a) TRU and TRU original equipment manufacturers that equip TRUs or TRU gen sets with flexibility engines, as defined in section 2477.4, shall do all of the following:

(1) Beginning November 14, 2012, provide written notification to the Executive Officer of their intent to equip TRUs or TRU gen sets with flexibility engines. This notification shall be submitted at least 12 months in advance of the first flexibility engine being installed in production, to:

California Air Resources Board  
Stationary Source Division (TRU)  
P.O. Box 2815  
Sacramento, CA 95812

(2) Beginning February 12, 2013, provide supplemental labels that list all of the engine information needed to register the TRU or TRU gen set in ARBER under section 2477.5(e), if the engine manufacturer's emissions label does not provide this information.

(A) The supplemental label shall be permanently affixed to the flexibility engine in an easily accessible place, in accordance with 40 CFR 89.110 (for Tier 1 or Tier 2) or 40 CFR 1039.135 (for Tier 4). Alternative supplemental label locations and font sizes may be necessary, such as on the equipment frame, subject to Executive Officer approval.

(3) Beginning February 12, 2013, the original equipment manufacturer shall provide written disclosures with new TRUs or TRU gen sets that are equipped with flexibility engines. These written disclosures may be included with documentation that is shipped with the TRU or TRU gen set and must include instructions to dealers telling them they are required by California law to notify the ultimate purchaser of these disclosures prior to sale and to pass these written disclosures to the ultimate purchaser at point of sale. The following disclosures are required:

(A) The TRU or TRU gen set is equipped with a flexibility engine. Flexibility engines meet less stringent emissions standards than the emission standards that were in effect at the time the flexibility engine was manufactured.

(B) Provide the effective model year of the flexibility engine, as shown in section 2477.4, Table 1.

(C) Notify the ultimate purchaser that if they register the TRU or TRU gen set in ARBER under section 2477.5(e), they are required report the effective model year of the engine, not the year that the engine was manufactured. Noncompliance may result in penalty.

(D) If the TRU or TRU gen set is operated in California, the owner will be required to bring the engine into compliance with the ULETRU in-use standard seven years after the effective model year of the engine, in accordance with section 2477.5(a) and (b).

(3)(b) Original Equipment Manufacturer Reporting

(A)(1) Current Production Reports: Beginning April 6, 2011, and by January 1st and June 30th of each calendar year thereafter, TRU and TRU gen set original equipment manufacturers shall provide to ARB the information listed below for all TRUs and TRU gen sets that will be manufactured and marketed for sale in the following markets: California, United States, Canada, and Mexico. The following data shall be provided for TRUs and TRU gen sets that will be produced during the six month period following the report due date for each market area:

1.(A) TRU or TRU genset manufacturer and model name, as it appears on the unit label; and

2.(B) The following engine information for each TRU or TRU gen set model:

- a.1. Engine manufacturer;
- b.2. Engine model, as it appears on the engine emissions label;
- c.3. Engine model, as it appears on the serial number label, if different;
- d.4. Engine Family;
- e.5. Rated horsepower and rated speed;
- f.6. Displacement (liters);
- g.7. Exhaust Emissions Control System;
- h.8. Tier standard met; and
- i.9. ARB's Executive Order that the engines are manufactured under.

3.(C) Current Production Reports shall be submitted by one of the following methods:

- a.1. Mail or deliver a physical report in electronic format to ARB at the address listed immediately below:

~~CALIFORNIA AIR RESOURCES BOARD  
STATIONARY SOURCE DIVISION (TRU)  
1001 I STREET  
SACRAMENTO, CA 95814~~

California Air Resources Board  
Stationary Source Division (TRU)  
1001 I Street  
Sacramento, CA 95814

~~b.2.~~ Electronically submit to ARB's TRU Program via email at:  
~~tru~~arber@arb.ca.gov

~~4.(D)~~ Original equipment manufacturers that produce less than 100 TRUs or TRU gen sets per calendar year may submit Current Production Year Reports within ten days of installing the first engine in a production run of a new model.

~~(B)(2)~~ Prior Production Reports:

~~4.(A)~~ Prior unit and engine data. TRU and TRU gen set original equipment manufacturers shall:

~~a.1.~~ By April 6, 2011, provide a production report to ARB with the information listed below in subparagraph ~~(f)(3)(B)1.a.2477.13(b)(2)(A)1.~~ 32477.13(b)(2)(C) for the previous five calendar years for each TRU or TRU gen set produced for sale in California, North America, Canada, and Mexico; or

~~b.2.~~ If the TRU or TRU gen set original equipment manufacturer elects not to provide the information in subparagraph ~~(f)(3)(B)1.a.2477.13(b)(2)(A)1.~~, then within 30 days of any request from ARB, the TRU or TRU gen set original equipment manufacturer shall provide a production report to ARB with the information listed below in subparagraph 32477.13(b)(2)(C) for the unit and engine serial numbers provided in ARB's request.

~~2.(B)~~ Monthly production reports. TRU and TRU gen set original equipment manufacturers shall either:

~~a.1.~~ Beginning April 6, 2011, provide by the 15th of each calendar month, a monthly production report to ARB with the information listed below in subparagraph 32477.13(b)(2)(C) for the previous calendar month for each TRU or TRU gen set produced for sale in California, North America, Canada, and Mexico; or

~~b.2.~~ As an alternative, the TRU or TRU gen set original equipment manufacturer may request reporting that is equivalent to and at least as effective as subparagraph ~~(f)(3)(B)2.a.2477.13(b)(2)(B)1.~~, immediately above, subject to Executive Officer approval.

~~3.(C)~~ Original equipment manufacturers shall provide the following information for each TRU and TRU gen set:

~~a.1.~~ TRU or TRU gen set model name, as it appears on the unit label;

~~b.2.~~ TRU or TRU gen set serial number;

~~c.3.~~ Engine manufacturer;

~~d.4.~~ Engine model, as it appears on the engine emissions label;

~~e.5.~~ Engine model, as it appears on the serial number label, if different;

- f.6. Engine Family;
- g.7. Engine serial number;
- h.8. Rated horsepower and rated speed; and
- i.9. Tier standard met.

4.(D) Prior Production Reports and Flexibility Engine Reports shall be submitted on CD or DVD to:

~~CALIFORNIA AIR RESOURCES BOARD  
STATIONARY SOURCE DIVISION (TRU)  
1001 I STREET  
SACRAMENTO, CA 95814~~

California Air Resources Board  
Stationary Source Division (TRU)  
1001 I Street  
Sacramento, CA 95814

~~(C)~~(3) Confidentiality of current and prior production reports. TRU and TRU gen set original equipment manufacturers may designate current and prior production report information as confidential or trade secret, and such information will be handled in accordance with title 17 CCR, section 91000.

(c) Beginning February 12, 2013, TRU and TRU gen set original equipment manufacturers (OEM) that sell TRUs, TRU gen sets, or replacement engines in California shall:

(1) Provide a supplemental label with all new and rebuilt replacement engines that provides the information that is required to register the unit in ARBER under section 2477.5(e), if the engine manufacturer's emissions label does not provide this information. If a prior-tier replacement engine (as defined in section 2477.4) is used, the effective model year (as defined in section 2477.4) shall be listed on the supplemental label.

(A) The supplemental label shall be permanently affixed to the replacement engine in an easily accessible place, in accordance with 40 CFR 89.110 (for Tier 1 or Tier 2 engines) or 40 CFR 1039.135 (for Tier 4 engines). Alternative supplemental label locations and font sizes may be necessary if accessible engine surface space is not available, subject to Executive Officer approval.

(2) Provide a registration information document with each new TRU and TRU gen set, that includes:

(A) All of the TRU or TRU gen set unit information that is needed to register the TRU or TRU gen set in ARBER under section 2477.5(e). This information must be the same as the information on the unit label that is attached to the unit.

- (B) All of the TRU or TRU gen set engine information needed to register in ARBER under section 2477.5(e). This information must be the same as the information on the engine labels that are attached to the engine.
  - (C) The registration information document shall include a certification statement by the TRU OEM stating that the unit registration information provided is exactly the same as listed on the TRU or TRU gen set unit label and the engine registration information provided is exactly the same as listed on the engine labels.
  - (D) As an alternative to providing the registration information document, the TRU or TRU gen set original equipment manufacturer may provide a web-based, on-line lookup system for registration information that is at least as effective as section 2477.13(c)(2)(A), (B), and (C), subject to advance Executive Officer approval. In determining whether a specific web-based, on-line lookup system for registration information is at least as effective as section 2477.13(c)(2)(A), (B), and (C), the Executive Officer shall consider information submitted by the manufacturer and shall exercise good scientific and engineering judgment.
- (3) Provide a registration information document with each new and rebuilt replacement engine supplied by the OEM that includes:
- (A) All of the engine information needed to register in ARBER under section 2477.5(e). This information must be the same as the information on the new replacement engine labels or rebuilt replacement engine supplemental labels (see section 2477.16(b)) that are attached to the engine or an alternative location approved by the Executive Officer.
  - (B) The registration information document shall include a certification statement by the TRU OEM stating that the engine registration information provided is exactly the same as listed on the replacement engine labels.
  - (C) Include entry spaces and instructions for the dealer or installer to fill in the unit information that is needed to register the unit in ARBER pursuant to section 2477.5(e)(1)(A)4. Include a certification statement for the dealer or installer to sign under, stating that the unit information entered is exactly the same as listed on the unit label that the replacement engine is installed into.
  - (D) As an alternative to providing the registration document, the TRU or TRU gen set original equipment manufacturer may provide a web-based, on-line lookup system for registration information that is at least as effective as section 2477.13(c)(3)(A), (B), and (C), subject to advance Executive Officer approval. In determining whether a specific web-based, on-line lookup system for registration information is at least as effective as section 2477.13(c)(2)(A), (B), and (C), the Executive Officer shall consider information submitted by the manufacturer and shall exercise good scientific and engineering judgment.



(d) Beginning November 14, 2012, OEMs shall provide written disclose with each prior-tier replacement engine they supply that shall be passed on to interested buyers prior to sale of a prior-tier replacement engine notifying them that the engine was manufactured to meet less stringent emissions standards than are currently required. This notification must also provide the effective model year of the prior-tier replacement engine and the ULETRU compliance deadline.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

**2477.14 Requirements for TRU, TRU Gen Set, and TRU-Equipped Truck and Trailer Dealers.**

(a) Beginning February 12, 2013, dealers that sell and/or install TRUs, TRU gen sets, or replacement engines in California shall:

(1) Pass the registration information document provided by the TRU or TRU gen set OEM (under section 2477.13) or print-out from the OEM's web-based look-up system (under section 2477.13(c)(2)(D) or 2477.13(c)(3)(D)) to the ultimate purchaser upon sale of a new TRU or TRU gen set that includes the TRU or TRU gen set unit information and the TRU engine information required for registration under section 2477.5(e).

(2) Pass the registration information document provided by the TRU or TRU gen set OEM under (section 2477.13) or print-out from the OEM's web-based look-up system (under section 2477.13(c)(2)(D) or 2477.13(c)(3)(D)), or engine rebuilder (under section 2477.16) to the ultimate purchaser upon sale of a new replacement engine, or rebuilt replacement engine that includes the engine information required for registration under section 2477.5(e).

(3) If an engine is not supplied by a TRU OEM, the dealer shall provide a registration information document that lists all of the TRU or TRU gen set engine information needed to register in ARBER under section 2477.5(e)(1)(A)7. This information must be exactly the same as the information on the engine emissions label that is attached to the engine. The registration information document must include a certification statement by the dealer stating that the engine information provided is exactly the same as listed on the engine emissions label.

(4) If a new TRU or TRU gen set is equipped with a flexibility engine, the dealer shall notify the ultimate purchaser of the written disclosures provided by the OEM under section 2477.13(a)(3) prior to sale and shall pass these disclosures to the ultimate purchaser at point of sale of a new TRU or TRU gen set.

(b) Dealers that sell TRUs or TRU gen sets from businesses located in California may purchase, receive, or otherwise acquire and have in their possession, TRUs or TRU gen sets that are noncompliant with the in-use performance standards of section 2477.5(a) and the registration requirements of section 2477.5(e), if the following conditions are met:

(1) The noncompliant TRUs or TRU gen sets are not sold for use in California prior to being brought into compliance with the requirements;

(2) The noncompliant TRU or TRU gen set is sold to a person that would not be reasonably expected to do business in California and a written disclosure to the buyer in the bill of sale is required in accordance with section 2477.18(b)(1);

(3) The noncompliant TRUs or TRU gen sets are not rented or leased prior to being brought into compliance with these requirements;

(4) The noncompliant TRUs or TRU gen sets are not operated at the dealers place of business or on California highways for the purposes of controlling the environment of temperature sensitive products while in California. This condition applies to TRU or TRU gen sets under the dealer's control. This condition does not apply to TRUs or TRU gen sets owned by others that are being repaired by the dealer; and

(5) If a noncompliant TRU or TRU gen set is in transit on California highways:

(A) The TRU or TRU gen set shall not be operating;

(B) The dealer shall be responsible for ensuring that no temperature-sensitive products are transported in the vehicle;

(C) The dealer shall provide the driver with written evidence that the noncompliant TRU or TRU gen set is under the control of the dealer, including the following information:

1. Dealer's business name;

2. Dealer's street address, state, zip code;

3. Dealer contact person's name;

4. Dealer contact person's business phone number;

5. Date(s) transport will take place;

6. Statement of the reason for transporting the noncompliant equipment

7. TRU or TRU gen set serial number

8. Physical address of starting location;

9. Physical address of ending location; and

10. Dealer owner's or responsible official's signature, after the statement: "I certify under penalty of perjury under the laws of the State of California that the information provided is true, accurate, and complete."

(D) During transit on California highways, the driver, upon request, must show an inspector that no temperature-sensitive products are being transported and must present written evidence provided by the dealer that the noncompliant TRU or TRU gen set is under the control of a dealer; and

(E) All circumstances at the time of inspection shall be consistent with the requirements under section 2477.14(b)(5).

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

**2477.15 Requirements for Repair Shops Located in California that Work on TRUs or TRU Gen Sets.**

(a) Repair shops located in California that sell and/or install new or rebuilt replacement engines into TRUs or TRU gen sets shall:

(1) Pass the registration information document provided by the TRU or TRU gen set OEM (under section 2477.13) or engine rebuilder (under section 2477.16) to the ultimate purchaser upon sale of a new or rebuilt replacement engine that includes the engine information needed to register in ARBER, as listed in section 2477.5(e)(1)(A)7.

(2) Beginning February 12, 2013, if an engine is not supplied by a TRU OEM, the installer shall provide a registration information document that lists all of the TRU or TRU gen set engine information needed to register in ARBER, as listed in section 2477.5(e)(1)(A)7.

(A) This information must be exactly the same as the information on the engine emissions label that is attached to the engine.

(B) The registration information document shall provide a certification statement by the repair shop responsible official stating that the engine information provided is exactly the same as listed on the engine emissions label.

(3) Beginning February 12, 2013, provide the unit information on the registration information document that is needed to register the unit in ARBER for TRU or TRU gen set that the new or rebuilt replacement engine is installed into. The unit information that is required is listed in section 2477.5(e)(1)(A)4.

(A) The repair shop responsible official shall provide a certification statement on the registration information document stating that the unit information provided is exactly the same as listed on the unit label.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

## **2477.16 Requirements for Engine Rebuilders.**

- (a) If a TRU engine is being rebuilt to remain in compliance with the in-use standards of section 2477.5(a), it must be rebuilt in accordance with the 40 CFR, sections 89.130 and 1068.120, and 13 CCR, section 2423(l), as these sections existed on August 31, 2012, and shall meet the following requirements:
- (1) To remain in compliance with the in-use performance standards, the engine must be rebuilt to a configuration of a more stringent emissions standard tier than the original engine;
  - (2) The engine must be rebuilt to a certified configuration of matched components. "Matched components" means a complete set of components corresponding to the certified emissions configuration (tier) of the engine that is being used as the reference for the rebuilt engine.
- (b) Beginning November 14, 2012, engine rebuilders shall provide a supplemental label with each rebuilt engine that includes the following information:
- (1) Name of the engine rebuilder;
  - (2) Engine manufacturer of the original engine
  - (3) Engine model;
  - (4) Engine model year:
    - (A) Prior tier engines. If the rebuilt engine meets a prior-tier emissions standard, then the effective model year is required (see definition of effective model year in section 2477.4);
    - (B) Current tier engines. If the rebuilt engine meets the tier standard that is currently in effect, then the model year is the year that the rebuild is completed.
  - (5) Horsepower rating of the certified configuration of the rebuilt engine;
  - (6) Emissions standard tier met by the certified configuration (e.g. Tier 4i); and
  - (7) Calendar year that the rebuild was completed.
- (c) Supplemental labels shall be permanently affixed to the rebuilt engine in an easily accessible place, in accordance with 40 CFR, section 89.110 (for Tier 1 or Tier 2) or 40 CFR, section 1039.135 (for Tier 4). Alternative supplemental label locations and font sizes may be necessary if surface space is not available, subject to Executive Officer approval.
- (d) Beginning January 13, 2013, engine rebuilders shall provide the following documentation, within 30 days of request, that demonstrates they have complied with the engine rebuilding practices of 40 CFR, sections 89.130 and 1068.120, and 13 CCR, section 2423(l):
- (1) Information that demonstrates there is a reasonable technical basis for knowing that the rebuilt engine is equivalent, from an emissions standpoint, to an engine that complies with the certification standards applicable to the emissions tier standard of the rebuilt engine (i.e. tolerances, calibrations, specifications). Such equivalency would exist if the following two conditions are met:
    - (A) Parts installed (whether the parts are new, used, or rebuilt) are such that a person familiar with the design and function of engines would reasonably believe that the parts perform the same function with respect to emission control as the original parts; and

(B) Any parameter adjustment or design element change is made only in accordance with the original engine manufacturer's instructions or where data or other reasonable technical basis exists that such parameter adjustment or design element change, when performed on the rebuilt engine, is not expected to adversely affect in-use emissions.

(2) The technical demonstration must be signed and stamped by a licensed professional mechanical engineer.

(e) Beginning February 12, 2013, engine rebuilders shall provide a registration information document with the rebuilt engine that includes:

(1) All of the TRU or TRU gen set engine information needed to register in ARBER pursuant to subparagraph 2477.5(e)(1)(A)7 except that engine family may be omitted for rebuilt engines. This information must be the same as the information on the rebuilt engine's re-label and supplemental emissions label that is attached to the engine. The registration information document would include a certification statement by the engine rebuilder, or third party installer stating that the engine information provided is exactly the same as listed on the engine emissions label.

(2) A separate section of the registration information document shall include entry spaces for all of the TRU or TRU gen set unit information that is required to register the unit in ARBER pursuant to subparagraphs 2477.5(e)(1)(A)4 and 5. The registration information document would include a certification statement, with a signature space for the third party installer, stating that the unit information provided is exactly the same as listed on the unit label.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

## **~~(2) Facility Monitoring, Recordkeeping, and Reporting.~~**

### **~~(A)2477.17 Facility Reporting.~~**

~~(A)(a)~~ All facilities subject to this subsection shall submit a Facility Report to ARB by January 31, 2006, containing the following information, as of December 31, 2005:

~~1-(1)~~ Contact information for the facility's responsible official.

~~2-(2)~~ Provide all North American Industrial Classification System codes (NAICS) applicable to the facility.

~~3-(3)~~ The number of loading dock doors serving refrigerated storage space.

~~4-(4)~~ The number of square feet of refrigerated storage space.

~~5-(5)~~ The number of TRUs or TRU gen sets under facility control by model year and horsepower category.

~~6.~~(6) The number of refrigerated trucks, trailers, shipping containers, or railcars leased or rented.

~~7.~~(7) The total annual TRU engine operating hours for all TRUs or TRU gen sets under facility control during 2005 (e.g. total TRU engine operating time for both on-road and off-road operations).

~~8.~~(8) The average weekly number of inbound refrigerated trucks, trailers, shipping containers, and railcars delivering goods to the facility during 2005, calculated by dividing the annual total inbound refrigerated loads by 52.

~~9.~~(9) The average weekly number of outbound refrigerated trucks, trailers, shipping containers and railcars delivering goods from the facility during 2005, calculated by dividing the annual total outbound refrigerated loads by 52.

~~10.~~(10) The average total number of hours per week that outbound TRU or TRU gen set engines operate while at the facility during 2005. Average TRU or TRU gen set engine operating time at facility for outbound refrigerated loads may be used if the result is representative of the outbound TRU or TRU gen set operations at facilities, as determined by the Executive Officer. Average values would be determined for outbound loads based on recordkeeping, conducted in accordance with subparagraph (f)(2)(B)2., and applied to the total annual number of refrigerated outbound loads, and then weekly averages calculated as follows: Average TRU or TRU gen set engine operating time per outbound refrigerated load multiplied by the total annual number of outbound loads, divided by 52 weeks equals the average total number of hours per week that outbound TRU or TRU gen set engines operate while at the facility.

~~11.~~(11) The average total number of hours per week that inbound TRU or TRU gen set engines operate while at the facility during 2005. Average TRU or TRU gen set engine operating time at facility for inbound refrigerated loads may be used if the result is representative of the inbound TRU or TRU gen set operations at facilities, as determined by the Executive Officer. Average values would be determined for inbound loads based on recordkeeping, conducted in accordance with subparagraph (f)(2)(B)2., and applied to the total annual number of refrigerated inbound loads, and then weekly averages calculated as follows: Average TRU or TRU gen set engine operating time per inbound refrigerated load multiplied by the total annual number of inbound loads, divided by 52 weeks equals the average total number of hours per week that inbound TRU or TRU gen set engines operate while at the facility.

~~12.~~(12) The number of refrigerated trailers (as defined) that are used at the facility for cold storage, the total annual number of hours of TRU engine operation associated with these refrigerated trailers, and the total annual number of hours of operation using electric standby associated with these refrigerated trailers.

**~~(B)~~(b) Recordkeeping.**

~~1.~~(1) Recordkeeping that substantiates the information reported in the Facility Report shall be maintained and shall be compiled and made available to State inspectors upon request for a minimum of three (3) years.

~~2.~~(2) The Executive Officer may approve alternative recordkeeping and calculation procedures for determining the average weekly hours of TRU engine operation at a facility for inbound and outbound refrigerated loads, provided the Executive Officer finds that the alternative procedures meet the intent of ~~subparagraph (f)(2)~~section 2477.17.

**~~(C)~~(c) Facility Report Submittals.** Facility Reports shall be submitted by one of the following methods:

~~1.~~(1) Mail or deliver a physical report to ARB at the address listed immediately below:

~~CALIFORNIA AIR RESOURCES BOARD  
STATIONARY SOURCE DIVISION (TRU)  
P.O. BOX 2815  
SACRAMENTO, CA 95812~~  
California Air Resources Board  
Stationary Source Division (TRU)  
1001 I Street  
Sacramento, CA 95814

~~2.~~(2) Electronically submit through ARB's web site. The web address will be identified in an advisory. by email to: [tru@arb.ca.gov](mailto:tru@arb.ca.gov)

**~~(D)~~(d) Failure to ~~r~~Report or ~~s~~Submittal of ~~f~~False ~~i~~Information.** Failure to report or submittal of false information is a separate violation of ~~state law~~ subject to civil penaltythis rule.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

~~(g)~~**2477.18 Prohibitions.**

~~(1)(a)~~ Except as allowed under section 2477.14(b), No person who is engaged in this State in the business of selling to an ultimate purchaser, or renting or leasing new or used TRUs or TRU gen sets, including, but not limited to, manufacturers, distributors, and dealers, auctioneers, and motor carriers shall intentionally or negligently import, deliver, purchase, receive, or otherwise acquire a new or used TRU or TRU gen set engine that does not meet the performance requirements or alternatives set forth in section 2477.5(~~ea~~)(1) above.

~~(2)(b)~~ Except as allowed under section 2477.14(b), No person who is engaged in this State in the business of selling to an ultimate purchaser new or used TRU or TRU gen set engines, including, but not limited to, manufacturers, distributors, and dealers, auctioneers, and motor carriers shall sell, or offer to sell, to an ultimate purchaser who is a resident of this State or a person that could reasonably be expected to do business in this State a new or used TRU or TRU gen set engine that does not meet the performance requirements or alternatives set forth in section 2477.5(~~ea~~)(1) above.

(1) If a noncompliant TRU or TRU gen set is sold to a person who is a resident outside this State, then the bill of sale shall disclose to the buyer that the TRU or TRU gen set is not compliant for use in California and the TRU or TRU gen set must meet the in-use performance standards of section 2477.5 before operating in the State, and if the TRU is based in the State, then it must be registered in ARBER. The following statement must be included in the bill of sale of any noncompliant TRU or TRU gen set: "This TRU does not currently meet California's in-use performance standards under title 13, California Code of Regulations, section 2477.5, and is therefore not compliant for use in California."

(2) No owner of a TRU that is equipped with an Alternative Technology under section 2477.5(a)(3) (e.g. hybrid electric or electric standby) shall sell the TRU or TRU gen set, without disclosing in writing that it must be used in a way that qualifies it as an Alternative Technology in accordance with section 2477.5(a)(3) in order to be compliant.

~~(3)(c)~~ No person who is engaged in this State in the business of renting or leasing new or used TRU or TRU gen set engines, including, but not limited to, manufacturers, distributors, and dealers, and carriers shall lease, offer to lease, rent, or offer to rent, in this state any new or used TRU or TRU gen set engine that does not meet the performance requirements or alternatives set forth in section 2477.5(~~ea~~)(1) above.

~~(4)(d)~~ Operators of affected facilities and operators of affected TRUs and TRU gen sets are prohibited from taking action to divert affected TRUs to alternative staging areas in order to circumvent the requirements of this section.



NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

**(h)2477.19 Penalties.**

**(1)(a)** All persons, as defined in section 19 of the Health and Safety Code, found to be in violation of title 13, CCR, sections 2477 through 2477.18 may be cited and subject to the penalty provisions set forth in Health and Safety Code sections 39674, 39675, 42400 et seq., 42402 et seq., and 42410. Where a violation involves multiple TRUs, TRU gen sets, or TRU engines, there is a separate violation for each such unit.

**(b)** Failure to keep records, report, or submittal of false information is a violation of this rule subject to penalty.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

**2477.20 Authority to Request Additional Information.**

The Executive Officer may request that additional information be submitted as part of the review of any extension application, exemption, or other action that delays or defers a compliance date or action.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

**2477.21 Severability.** If any subsection, paragraph, subparagraph, sentence, clause, phrase, or portion of this regulation is, for any reason, held invalid, unconstitutional, or unenforceable by any court of competent jurisdiction, such portion shall be deemed as a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of the regulation.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39666, 39667, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3.5, 42402, 42402.2, 42410, 40717.9, 43013, and 43018, California Health and Safety Code.

## FINAL REGULATION ORDER

### REGULATION FOR MOBILE CARGO HANDLING EQUIPMENT AT PORTS AND INTERMODAL RAIL YARDS

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Adopt new section 2479, title 13, California Code of Regulations, to read as follows:  
(Note: The entire text of section 2479 set forth below is new language being added to the California Code of Regulations.)

#### **Section 2479. Regulation for Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards.**

##### **(a) Purpose**

The purpose of this regulation is to reduce diesel particulate matter (PM) and criteria pollutant emissions from compression ignition (CI) mobile cargo handling equipment that operate at ports and intermodal rail yards in the state of California.

##### **(b) Applicability**

Except as provided in subsection (c), the regulation would apply to any person who conducts business in California who sells, offers for sale, leases, rents, purchases, owns or operates any CI mobile cargo handling equipment that operates at any California port or intermodal rail yard.

##### **(c) Exemptions**

- (1) The requirements of this section do not apply to mobile cargo handling equipment that do not operate at a port or intermodal rail yard;
- (2) The requirements of this section do not apply to portable CI engines;
- (3) The requirements of subsections (e), (f), (g), (h), and (i) do not apply to mobile cargo handling equipment that are not used to handle cargo at any time but are used for transporting personnel or fuel delivery. Examples include, but are not limited to, fuel delivery trucks operating solely at the terminal to deliver fuel to terminal equipment and vans and buses used to transport personnel; and
- (4) The requirements of this section do not apply to military tactical support cargo handling equipment.

##### **(d) Definitions**

For purposes of this section, the definitions of Health and Safety Code section 39010 through 39060 shall apply except to extent that such definitions may be modified by the following definitions that apply specifically to this regulation:

- (1) "Alternative Diesel Fuel" means any fuel used in a CI engine that is not commonly or commercially known, sold, or represented by the supplier as diesel fuel No. 1-D or No. 2-D, pursuant to the specifications in ASTM D975-81, "Standard Specification for Diesel Fuel Oils," as modified in May 1982, which is incorporated herein by reference, or an alternative fuel, and does not require engine or fuel system modifications for the engine to operate, although minor modifications (e.g., recalibration of the engine fuel control) may enhance performance. Examples of alternative diesel fuels include, but are not limited to, biodiesel that does not meet the definition of CARB diesel fuel; Fischer-Tropsch fuels; emulsions of water in diesel fuel; and fuels with a fuel additive, unless:
  - (A) the additive is supplied to the engine fuel by an on-board dosing mechanism, or
  - (B) the additive is directly mixed into the base fuel inside the fuel tank of the engine, or
  - (C) the additive and base fuel are not mixed until engine fueling commences, and no more additive plus base fuel combination is mixed than required for a single fueling of a single engine.
- (2) "Alternative Fuel" means natural gas, propane, ethanol, methanol, gasoline (when used in hybrid electric mobile cargo handling equipment only), hydrogen, electricity, fuel cells, or advanced technologies that do not rely on diesel fuel. "Alternative fuel" also means any of these fuels used in combination with each other or in combination with other non-diesel fuel.
- (3) "Basic Container Handling Equipment" means mobile cargo handling equipment, other than yard trucks, bulk cargo handling equipment, and RTG cranes, used to handle cargo containers. Basic Container Handling Equipment includes but is not limited to top handlers, side handlers, reach stackers, straddle carriers, and forklifts.
- (4) "Bulk Cargo Handling Equipment" means mobile cargo handling equipment, other than yard trucks, basic container handling equipment, and RTG cranes, generally used to move non-containerized cargo, including but not limited to dozers, excavators, loaders, tractors, mobile cranes (excluding rubber-tired gantry cranes), aerial lifts, and sweepers.
- (5) "California Air Resources Board (CARB) Diesel Fuel" means any diesel fuel that meets the specifications of vehicular diesel fuel, as defined in title 13 CCR, sections 2281, 2282, and 2284.
- (6) "Carbon Monoxide (CO)" is a colorless, odorless gas resulting from the incomplete combustion of hydrocarbon fuels.
- (7) "Cargo Handling Equipment" means any off-road, self-propelled vehicle or equipment used at a port or intermodal rail yard to lift or move container, bulk, or

liquid cargo carried by ship, train, or another vehicle, or used to perform maintenance and repair activities that are routinely scheduled or that are due to predictable process upsets. Equipment includes, but is not limited to, mobile cranes, rubber-tired gantry cranes, yard trucks, top handlers, side handlers, reach stackers, forklifts, loaders, sweepers, aerial lifts, excavators, and dozers.

- (8) "Certified Off-road Diesel Engine" means an engine certified to California off-road engine emission standards under title 13 CCR, section 2423.
- (9) "Certified On-road Diesel Engine" means an engine certified to California on-road diesel engine emission standards under title 13 CCR, section 1956.8.
- (10) "Compression Ignition (CI) Engine" means an internal combustion engine with operating characteristics significantly similar to the theoretical diesel combustion cycle. The regulation of power by controlling fuel supply in lieu of a throttle is indicative of a compression ignition engine.
- (11) "Contiguous Properties" means two or more parcels of land with a common boundary or separated solely by a public roadway or other public right-of-way.
- (12) "Diesel Fuel" means any fuel that is commonly or commercially known, sold, or represented by the supplier as diesel fuel, including any mixture of primarily liquid hydrocarbons (HC) - organic compounds consisting exclusively of the elements carbon and hydrogen - that is sold or represented by the supplier as suitable for use in an internal combustion, compression-ignition engine.
- (13) "Diesel-Fueled" means a CI engine fueled by diesel fuel, CARB diesel fuel, or jet fuel, in whole or part.
- (14) "Diesel Oxidation Catalyst (DOC)" means a catalyst promoting oxidation processes in diesel exhaust, and usually designed to reduce emissions of the organic fraction of diesel particulates, gas-phase HC, and CO.
- (15) "Diesel Particulate Filter (DPF)" means an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate and periodically removes the collected particles by either physical action or by oxidizing (burning off) the particles in a process called regeneration.
- (16) "Diesel Particulate Matter (Diesel PM)" means the particles found in the exhaust of diesel-fueled CI engines. Diesel PM may agglomerate and adsorb other species to form structures of complex physical and chemical properties.
- (17) "Dozer" means an off-road tractor, either tracked or wheeled, equipped with a blade.
- (18) "Emission Control Strategy" means any device, system, or strategy employed with a diesel engine that is intended to reduce emissions, including, but not limited to, diesel oxidation catalysts, selective catalytic reduction systems, fuel

additives, diesel particulate filters, alternative diesel fuels, water emulsified fuels, and any combination of the above.

- (19) "Excavator" means an off-road vehicle consisting of a backhoe and cab mounted on a pivot atop an undercarriage with tracks or wheels.
- (20) "Executive Officer" means the Executive Officer of the California Air Resources Board or his/her designee.
- (21) "Fleet" means the total number of mobile cargo handling equipment vehicles owned, rented, or leased by an owner or operator at a specific terminal or intermodal yard location.
- (22) "Forklift" means an off-road industrial truck used to hoist and transport materials by means of steel fork(s) under the load.
- (23) "Fuel Additive" means any substance designed to be added to fuel or fuel systems or other engine-related engine systems such that it is present in-cylinder during combustion and has any of the following effects: decreased emissions, improved fuel economy, increased performance of the engine; or assists diesel emission control strategies in decreasing emissions, or improving fuel economy or increasing performance of the engine.
- (24) "Heavy-duty Pilot Ignition Engine" means an engine designed to operate using an alternative fuel, except that diesel fuel is used for pilot ignition at an average ratio of no more than one part diesel fuel to ten parts total fuel on any energy equivalent basis. An engine that can operate or idle solely on diesel fuel at any time does not meet this definition.
- (25) "Hydrocarbon (HC)" means the sum of all hydrocarbon air pollutants.
- (26) "In-Use" means a CI engine that is not a "new" CI engine.
- (27) "Intermodal Rail Yard" means any transportation facility primarily dedicated to the business of rail and/or intermodal rail operations where cargo is transferred to or from a train and any other form of conveyance, such as train to ship, ship to train, train to truck, or truck to train.
- (28) "Lease" means a contract by which one conveys cargo handling equipment for a specified term and for a specified rent.
- (29) "Level" means one of three categories of Air Resources Board-verified diesel emission control strategies as set forth in title 13, CCR, section 2701 et seq: Level 1 means the strategy reduces engine diesel particulate matter emissions by between 25 and 49 percent, Level 2 means the strategy reduces engine diesel particulate matter emissions by between 50 and 84 percent, and Level 3 means the strategy reduces engine diesel particulate matter emissions by

85 percent or greater, or reduces engine emissions to less than or equal to 0.01 grams diesel PM per brake horsepower-hour.

- (30) "Loader" means any type of off-road tractor with either tracks or rubber tires that uses a bucket on the end of movable arms to lift and move material; can be also referred to as a front-end loader, front loader, skid steer loader, backhoe, rubber-tired loader, or wheeled loader.
- (31) "Military Tactical Support Cargo Handling Equipment" means cargo handling equipment that meets military specifications, owned by the U.S. Department of Defense and/or the U.S. military services, and used in combat, combat support, combat service support, tactical or relief operations, or training for such operations.
- (32) "Minimum Use Requirement" means an agreement, as part of state or local incentive funding programs or written agreement between mobile cargo handling equipment owners or operators and the Ports of Long Beach, Los Angeles, or Oakland, to use an emission control device on mobile cargo handling equipment for a specified minimum number of years and/or hours.
- (33) "Mobile Crane" means the propulsion engine of a crane other than a rubber-tired gantry crane.
- (34) "Model Year" means the CI engine manufacturer's annual production period, which includes January 1st of a calendar year, or if the manufacturer has no annual production period, the calendar year.
- (35) "Newly Purchased, Leased, or Rented Cargo Handling Equipment" means mobile cargo handling equipment, or a diesel-fueled CI engine installed in mobile cargo handling equipment, that is newly purchased, rented, or leased by an owner or operator on or after January 1, 2007, and is operated at a port or intermodal rail yard in the state of California after January 1, 2007.
- (36) "Nitrogen Oxides (NO<sub>x</sub>)" means compounds of nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), and other oxides of nitrogen, which are typically created during combustion processes and are major contributors to smog formation and acid deposition.
- (37) "Non-Methane Hydrocarbons (NMHC)" means the sum of all HC air pollutants except methane.
- (38) "Non-Yard Truck Mobile Cargo Handling Equipment" means all mobile cargo handling equipment other than yard trucks.
- (39) "Ocean-going Vessel" means a commercial, government, or military vessel meeting any one of the following criteria:

- (A) a vessel with a "registry" (foreign trade) endorsement on its United States Coast Guard certificate of documentation, or a vessel that is registered under the flag of a country other than the United States;
  - (B) a vessel greater than or equal to 400 feet in length overall (LOA) as defined in 50 CFR § 679.2, as adopted June 19, 1996;
  - (C) a vessel greater than or equal to 10,000 gross tons (GT ITC) per the convention measurement (international system) as defined in 46 CFR 69.51-.61, as adopted September 12, 1989; or
  - (D) a vessel propelled by a marine compression ignition engine with a per-cylinder displacement of greater than or equal to 30 liters.
- (40) "Off-Road Engine" means an engine used in an off-road vehicle, or piece of equipment, including a certified on-road diesel engine.
- (41) "Off-Road Vehicle or Equipment" means any non-stationary device, including registered motor vehicles, powered by an internal combustion engine or motor, used primarily off the highways to propel, move, or transport persons or property.
- (42) "Owner or Operator" means any person subject to the requirements of this section, including but not limited to:
- (A) an individual, trust, firm, joint stock company, business concern, partnership, limited liability company, association, or corporation including but not limited to, a government corporation; and
  - (B) any city, county, district, commission, the state or any department, agency, or political subdivision thereof, any interstate body, and the federal government or any department or agency thereof to the extent permitted by law.
- (43) "Particulate Matter (PM)" means the particles found in the exhaust of CI engines, which may agglomerate and adsorb other species to form structures of complex physical and chemical properties.
- (44) "Port" means a place, which typically consists of different terminals, where cargo is loaded onto and unloaded from ocean-going vessels primarily. A port includes military terminals that operate cargo handling equipment when located as part of, or on contiguous properties with, non-military terminals.
- (45) "Portable CI Engine" means a compression ignition (CI) engine designed and capable of being carried or moved from one location to another. Indicators of portability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. Portable engines are not self-propelled.
- (46) "Purchased" means the date shown on the front of the cashed check, the date of the financial transaction, or the date on the engine purchasing agreement, whichever is earliest.

- (47) "Railcar Mover" means an off-road vehicle fitted with rail couplers and capable of traveling on both roads and rail tracks.
- (48) "Reach Stacker" means an off-road truck-like cargo container handler that uses an overhead telescopic boom that can reach across two or more stacks of cargo containers and lift the containers from the top.
- (49) "Registered Motor Vehicle" means a yard truck or other cargo handling vehicle that is registered as a motor vehicle under Vehicle Code section 4000, et seq.
- (50) "Rent" means payment for the use of mobile cargo handling equipment for a specified term.
- (51) "Retirement" or "Retire" means an engine or vehicle that will be taken out of service by an owner or operator and will not be operated at a port or intermodal rail yard in the State of California. The engine may be sold outside of California or scrapped.
- (52) "Rubber-tired Gantry Crane or RTG Crane" means an off-road overhead cargo container crane with the lifting mechanism mounted on a cross-beam supported on vertical legs which run on rubber tires.
- (53) "Side Handler or Side Pick" means an off-road truck-like cargo container handler that uses an overhead telescopic boom to lift empty or loaded cargo containers by grabbing either two top corners on the longest side of a container, both arms of one side of a container, or both top and bottom sides of a container.
- (54) "Sweeper" means an off-road vehicle with attached brushes underneath that sweep the ground and pick up dirt and debris.
- (55) "Terminal" means a facility, including one owned or operated by the Department of Defense or the U.S. military services, that operates cargo handling equipment at a port or intermodal rail yard.
- (56) "Tier 4 Off-road Emission Standards" means the emission standards promulgated by the United States Environmental Protection Agency in "Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel; Final Rule" (Vol. 69, No. 124 Fed. Reg. pp. 38957-39273, June 29, 2004) which harmonize with the final amended emission standards for newly manufactured off-road engines approved by the Air Resources Board on December 12, 2004.
- (57) "Top Handler or Top Pick" means an off-road truck-like cargo container handler that uses an overhead telescopic boom to lift empty or loaded cargo containers by grabbing the top of the containers.
- (58) "Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines (Verification Procedure)" means the Air Resources Board (ARB) regulatory procedure codified



in title 13, CCR, sections 2700-2710, which is incorporated herein by reference, that engine manufacturers, sellers, owners, or operators may use to verify the reductions of diesel PM and/or NOx from in-use diesel engines using a particular emission control strategy.

(59) "Verified Diesel Emission Control Strategy (VDECS)" means an emission control strategy, designed primarily for the reduction of diesel PM emissions, which has been verified pursuant to the "Verification Procedure for In-Use Strategies to Control Emissions from Diesel Engines" in title 13, California Code of Regulations, commencing with section 2700.

(60) "Yard truck" means an off-road mobile utility vehicle used to carry cargo containers with or without chassis; also known as utility tractor rig (UTR), yard tractor, yard goat, yard hostler, yard hustler, or prime mover.

**(e) Requirements**

**(1) Newly Purchased, Leased, or Rented Equipment Performance Standards:**

**(A) Yard Trucks:**

1. Except as provided in subsection (c), on or after January 1, 2007, no owner or operator shall operate any newly purchased, leased, or rented yard trucks unless they are equipped with the following types of engines:
  - a. Yard trucks that are registered as motor vehicles shall be equipped with engines that meet the on-road emission standards as specified in title 13, California Code of Regulations, section 1956.8, for the model year in which the yard trucks and engines were newly purchased, leased, or rented.
  - b. Yard trucks that are *not* registered as motor vehicles shall be equipped with engines:
    - i. that are certified to the on-road emission standards set forth in title 13, CCR, section 1956.8; for the model year in which the yard trucks and engines were newly purchased, leased, or rented; or
    - ii. that have been certified to meet the final Tier 4 off-road emission standards for the rated horsepower.

**(B) Non-Yard Truck Cargo Handling Equipment:**

1. Except as provided in subsection (c), on or after January 1, 2007, no owner or operator shall operate any newly purchased, leased, or rented non-yard truck vehicles or equipment unless they meet the following:
  - a. Non-yard truck mobile cargo handling equipment that are registered as motor vehicles shall be equipped with engines that meet the

on-road emission standards as specified in title 13, California Code of Regulations, section 1956.8, for the model year in which the non-yard truck mobile cargo handling equipment and engines were newly purchased, leased, or rented.

- b. Non-yard truck mobile cargo handling equipment that are *not* registered as motor vehicles shall be equipped with engines:
  - i. that have been certified to meet the on-road emission standards as specified in title 13, California Code of Regulations, section 1956.8 for the model year in which the non-yard truck mobile cargo handling equipment and engines were newly purchased, leased, or rented; or
  - ii. that have been certified to meet the Tier 4 off-road emission standards for the model year and rated horsepower of the newly purchased, leased, or rented non-yard truck mobile cargo handling equipment engines; or
- c. if (b) above is not available for the specific application and equipment type, the non-yard truck mobile cargo handling equipment shall be equipped with engines that have been certified to meet the highest available level off-road diesel engine emission standards as specified in title 13, California Code of Regulations, section 2423 for the rated horsepower and model year in which the equipment were newly purchased, leased, or rented, provided the owner or operator must install the highest level VDECS available within one year after the purchase, lease, or rental of the equipment, or within 6 months of when a VDECS becomes available, if that occurs after one year after the purchase, lease, or rental.

~~(2) In-Use Performance Standards for Yard Trucks~~

~~(A) In accordance with the schedule set forth below in paragraph (e)(2)(B), no owner or operator shall operate an in-use yard truck at a port or intermodal rail yard unless the engine meets the performance standards set forth below:~~

- ~~1. is certified to 2007 or later on-road emission standards for the model year of the year purchased as specified in title 13, California Code of Regulations, section 1956.8; or~~
- ~~2. is certified to final Tier 4 off-road emission standards for the rated horsepower; or~~
- ~~3. is equipped with a VDECS that results in emissions less than or equal to the diesel PM and NOx emission standards for a certified final Tier 4 off-road diesel engine of the same horsepower rating.~~

~~(B) Compliance Schedules for In-Use Yard Trucks~~

- ~~1. All owners or operators of three or fewer yard trucks shall comply with subsection (e)(2) according to the schedule in Table 1:~~

~~**Table 1: Compliance Schedule for In-Use Yard Truck Fleets of Three or Less**~~

~~Off-road without VDECS Installed by  
December 31, 2006~~

<del>Model Year</del>	<del>Compliance Deadline</del>
<del>Pre-2003</del>	<del>Dec. 31, 2007</del>
<del>2003</del>	<del>Dec. 31, 2010</del>
<del>2004</del>	<del>Dec. 31, 2011</del>
<del>2005</del>	<del>Dec. 31, 2012</del>
<del>2006</del>	<del>Dec. 31, 2013</del>

~~Off-road with VDECS Installed by  
December 31, 2006~~

<del>Model Year</del>	<del>Compliance Deadline</del>
<del>Pre-2003</del>	<del>Dec. 31, 2008</del>
<del>2003</del>	<del>Dec. 31, 2011</del>
<del>2004</del>	<del>Dec. 31, 2012</del>
<del>2005</del>	<del>Dec. 31, 2013</del>
<del>2006</del>	<del>Dec. 31, 2014</del>

~~On-road without VDECS Installed by  
December 31, 2006~~

<del>Model Year</del>	<del>Compliance Deadline</del>
<del>Pre-2000</del>	<del>Dec. 31, 2007</del>
<del>2000</del>	<del>Dec. 31, 2008</del>
<del>2001</del>	<del>Dec. 31, 2009</del>
<del>2002</del>	<del>Dec. 31, 2010</del>
<del>2003</del>	<del>Dec. 31, 2011</del>
<del>2004</del>	<del>Dec. 31, 2012</del>
<del>2005</del>	<del>Dec. 31, 2013</del>
<del>2006</del>	<del>Dec. 31, 2014</del>

~~On-road with VDECS Installed by  
December 31, 2006~~

<del>Model Year</del>	<del>Compliance Deadline</del>
<del>Pre-2000</del>	<del>Dec. 31, 2008</del>
<del>2000</del>	<del>Dec. 31, 2009</del>
<del>2001</del>	<del>Dec. 31, 2010</del>
<del>2002</del>	<del>Dec. 31, 2011</del>
<del>2003</del>	<del>Dec. 31, 2012</del>
<del>2004</del>	<del>Dec. 31, 2013</del>
<del>2005</del>	<del>Dec. 31, 2014</del>
<del>2006</del>	<del>Dec. 31, 2015</del>

- ~~2. All owners or operators of four or more yard trucks shall comply with subsection (e)(2) according to the schedule in Table 2:~~

**Table 2: Compliance Schedule for In-Use Yard Truck Fleets of Four or More**

**Off-road without VDECS Installed by December 31, 2006**

Model Year	% of Model Year	Compliance Deadline
Pre-2003	Greater of 3 or 50%	Dec. 31, 2007
	100%	Dec. 31, 2008
2003	Greater of 3 or 25%	Dec. 31, 2010
	50%	Dec. 31, 2011
	100%	Dec. 31, 2012
2004	Greater of 3 or 25%	Dec. 31, 2011
	50%	Dec. 31, 2012
	100%	Dec. 31, 2013
2005	Greater of 3 or 25%	Dec. 31, 2012
	50%	Dec. 31, 2013
	100%	Dec. 31, 2014
2006	Greater of 3 or 25%	Dec. 31, 2013
	50%	Dec. 31, 2014
	100%	Dec. 31, 2015

**Off-road with VDECS Installed by December 31, 2006**

Model Year	% of Model Year	Compliance Deadline
Pre-2003	Greater of 3 or 50%	Dec. 31, 2008
	100%	Dec. 31, 2009
2003	Greater of 3 or 25%	Dec. 31, 2011
	50%	Dec. 31, 2012
	100%	Dec. 31, 2013
2004	Greater of 3 or 25%	Dec. 31, 2012
	50%	Dec. 31, 2013
	100%	Dec. 31, 2014
2005	Greater of 3 or 25%	Dec. 31, 2013
	50%	Dec. 31, 2014
	100%	Dec. 31, 2015
2006	Greater of 3 or 25%	Dec. 31, 2014
	50%	Dec. 31, 2015
	100%	Dec. 31, 2016

**On-road without VDECS Installed by December 31, 2006**

Model Year	% of Model Year	Compliance Deadline
Pre-2000	Greater of 3 or 25%	Dec. 31, 2007
	50%	Dec. 31, 2008
	100%	Dec. 31, 2009
2000	Greater of 3 or 25%	Dec. 31, 2008
	50%	Dec. 31, 2009
	100%	Dec. 31, 2010
2001	Greater of 3 or 25%	Dec. 31, 2009
	50%	Dec. 31, 2010
	100%	Dec. 31, 2011
2002	Greater of 3 or 25%	Dec. 31, 2010
	50%	Dec. 31, 2011
	100%	Dec. 31, 2012
2003	Greater of 3 or 25%	Dec. 31, 2011
	50%	Dec. 31, 2012
	100%	Dec. 31, 2013
2004	Greater of 3 or 25%	Dec. 31, 2012
	50%	Dec. 31, 2013
	100%	Dec. 31, 2014
2005	Greater of 3 or 25%	Dec. 31, 2013
	50%	Dec. 31, 2014
	100%	Dec. 31, 2015
2006	Greater of 3 or 25%	Dec. 31, 2014
	50%	Dec. 31, 2015
	100%	Dec. 31, 2016

**On-road with VDECS Installed by December 31, 2006**

Model Year	% of Model Year	Compliance Deadline
Pre-2000	Greater of 3 or 25%	Dec. 31, 2008
	50%	Dec. 31, 2009
	100%	Dec. 31, 2010
2000	Greater of 3 or 25%	Dec. 31, 2009
	50%	Dec. 31, 2010
	100%	Dec. 31, 2011
2001	Greater of 3 or 25%	Dec. 31, 2010
	50%	Dec. 31, 2011
	100%	Dec. 31, 2012
2002	Greater of 3 or 25%	Dec. 31, 2011
	50%	Dec. 31, 2012
	100%	Dec. 31, 2013
2003	Greater of 3 or 25%	Dec. 31, 2012
	50%	Dec. 31, 2013
	100%	Dec. 31, 2014
2004	Greater of 3 or 25%	Dec. 31, 2013
	50%	Dec. 31, 2014
	100%	Dec. 31, 2015
2005	Greater of 3 or 25%	Dec. 31, 2014
	50%	Dec. 31, 2015
	100%	Dec. 31, 2016
2006	Greater of 3 or 25%	Dec. 31, 2015
	50%	Dec. 31, 2016
	100%	Dec. 31, 2017

- ~~a. for each compliance deadline, the percentage of yard trucks (25 percent, 50 percent, or 100 percent) that must meet the requirements of subsection (e)(2) is determined based on the total population of yard trucks for a specific model year or model year group (i.e., pre-2000 or pre-2003, depending upon whether the equipment is characterized as on- or off-road) that exist in the owner's or operator's yard truck fleet as of January 1 of the first compliance deadline year for that model year or model year group; and~~
- ~~b. if the number of yard trucks is not a whole number, conventional rounding practices apply (i.e., if less 0.5, round down; if 0.5 or greater, round up).~~

**(3) In-Use Performance Standards for Non-Yard Truck Mobile Cargo Handling Equipment**

- (A) In accordance with the schedule set forth in subsection (e)(3)(C), no owner or operator shall operate non-yard truck mobile cargo handling equipment unless they meet all of the following:
1. Use one of the Compliance Options for each vehicle or equipment in the active fleet as specified in paragraph (e)(3)(B) per the compliance schedule listed in Table 3 in subsection (e)(3)(C); and
  2. Adherence to any special circumstances that may apply when a diesel emission control strategy is used as a Compliance Option as specified in subsection (g); and
  3. Maintenance of all records as specified in subsection (i); and
  4. Continuous Compliance. An owner or operator is required to keep all mobile cargo handling equipment operating in California in compliance with the requirements of this regulation at all times.
- (B) Compliance Option. Each owner or operator shall use one of the following Compliance Options on each engine or vehicle in his fleet as required by the implementation schedule listed in Table 3 in subsection (e)(3)(C):
1. Basic Container Handling Equipment:
    - a. An engine or power system, including a diesel, alternative fuel, or heavy-duty pilot ignition engine, certified to either the 2007 or later model year on-road emission standards for the year manufactured as specified in title 13, CCR, section 1956.8, or the Tier 4 off-road emission standards for the rated horsepower and model year of the year manufactured; or

- b. An engine or power system certified to the on-road emission standards for the year manufactured as specified in title 13, CCR, section 1956.8, or certified to the Tier 2 or Tier 3 off-road diesel engine standard for the rated horsepower and model year of the year manufactured, and used in conjunction with the highest level VDECS that is verified for a specific engine family and model year. If the highest level VDECS used is Level 1, the engine or power system must meet the certified Tier 4 off-road emission standards, or be equipped with a Level 3 VDECS by December 31, 2015; or
- c. An engine or power system either certified to the Tier 1 off-road diesel engine standard, as specified in title 13, CCR, section 2423, or manufactured prior to implementation of the Tier 1 off-road diesel engine standard, both of which must be used in conjunction with the highest level VDECS that is verified for the specific engine family and model year. If the highest level VDECS used is Level 1 or Level 2, the engine or power system must meet the certified Tier 4 off-road emission standards or be equipped with a Level 3 VDECS by December 31, 2015.

2. Bulk Cargo Handling Equipment:

- a. An engine or power system, including a diesel, alternative fuel, or heavy-duty pilot ignition engine, certified to either the 2007 or later model year on-road emission standards for the year manufactured as specified in title 13, CCR, section 1956.8, or the Tier 4 off-road emission standards for the rated horsepower and model year of the year manufactured; or
- b. An engine or power system certified to the on-road emission standards for the year manufactured as specified in title 13, CCR, section 1956.8, or certified to the Tier 2 or Tier 3 off-road diesel engine standard for the rated horsepower and model year of the year manufactured, and used in conjunction with the highest level VDECS that is verified for a specific engine family and model year. If the highest level VDECS used is Level 1, the engine or power system must meet the certified Tier 4 off-road emission standards, or be equipped with a Level 3 VDECS by December 31, 2015; or
- c. An engine or power system either certified to the Tier 1 off-road diesel engine standard, as specified in title 13, CCR, section 2423, or manufactured prior to implementation of the Tier 1 off-road diesel engine standard, both of which must be used in conjunction with the highest level VDECS that is verified for the specific engine family and model year. If the highest level VDECS used is Level 1, the engine or power system must meet the certified Tier 4 off-road emission

standards or be equipped with a Level 3 VDECS by December 31, 2015.

3. Rubber-Tired Gantry Cranes:

- a. An engine or power system, including a diesel, alternative fuel, or heavy-duty pilot ignition engine, certified to either the 2007 or later model year on-road emission standards for the year manufactured as specified in title 13, CCR, section 1956.8, or the Tier 4 off-road emission standards for the rated horsepower and model year of the year manufactured; or
- b. An engine or power system certified to the on-road emission standards for the year manufactured as specified in title 13, CCR, section 1956.8, or certified to the Tier 2 or Tier 3 off-road diesel engine standard for the rated horsepower and model year of the year manufactured, and used in conjunction with the highest level VDECS that is verified for a specific engine family and model year; or
- c. An engine or power system either certified to the Tier 1 off-road diesel engine standard, as specified in title 13, CCR, section 2423, or manufactured prior to implementation of the Tier 1 off-road diesel engine standard, both of which must be used in conjunction with the highest level VDECS that is verified for the specific engine family and model year. If the highest level VDECS used is Level 1 or Level 2, the engine or power system must meet the certified Tier 4 off-road emission standards or be equipped with a Level 3 VDECS by the latter of model year plus 12 years or December 31, 2015.

(C) Compliance Schedule for Non-Yard Truck Mobile Cargo Handling Equipment

1. All owners or operators of non-yard truck mobile cargo handling equipment shall comply with subsection (e)(3) according to the schedule in Table 3:

**Table 3: Compliance Option Compliance Schedule for Non-Yard Truck In-Use Mobile Cargo Handling Equipment**

Engine Model Years	Compliance Date <sup>1</sup>				
	Non-Yard Truck Fleets of 3 or Fewer	Non-Yard Truck Fleets of 4 or More			
		First 3 or 25% (whichever is greater)	50%	75%	100%
pre-1988	2007	2007	2008	2009	2010
1988-1995	2008	2008	2009	2010	2011
1996-2002	2009	2009	2010	2011	2012
2003-2006	2010	2010	2011	2012	2013

- a. for each compliance deadline, the percentage of non-yard truck equipment (25 percent, 50 percent, or 100 percent) that must meet the requirements of subsection (e)(3) is determined based on the total population of non-yard truck equipment for a specific model year group (i.e., pre-1988) that exist in the owner's or operator's non-yard truck fleet as of January 1 of the first compliance deadline year for that model year group; and
- b. if the number of non-yard truck equipment is not a whole number, conventional rounding practices apply (i.e., if less 0.5, round down; if 0.5 or greater, round up).

~~(4) Fuel Requirements~~

- ~~(A) Except as provided for in subsection (c), on or after January 1, 2007, no owner or operator of cargo handling equipment shall fuel the equipment with any fuel unless the fuel is one of the following:~~
- ~~1. CARB Diesel Fuel; or~~
  - ~~2. An alternative diesel fuel that meets the requirements of the Verification Procedure; or~~
  - ~~3. An alternative fuel; or~~
  - ~~4. CARB Diesel Fuel used with fuel additives that meets the requirements of the Verification Procedure; or~~
  - ~~5. Any combination of (e)(4)(A)1. through (e)(4)(A)4. above.~~
- ~~(B) Owners or operators choosing to use alternative diesel fuels in mobile cargo handling equipment to meet the requirements of subsections (e)(2) and (e)(3) shall:~~

<sup>1</sup> Compliance date refers to December 31<sup>st</sup> of the year indicated.



- ~~1. Maintain records in accordance with subsection (i); and~~
- ~~2. Use only fuel that is a VDECS alternative diesel fuel in mobile cargo handling equipment at ports or intermodal rail yards in California; and~~
- ~~3. Permanently affix a label in clear view near the fill spout that identifies the proper fuel that is required to be in compliance; and~~
- ~~4. In the event that the owner or operator decides to revert to using CARB diesel fuel, the operator shall comply with the requirements of subsections (e)(2) and (e)(3) within 10 days of discontinuation of alternative diesel fuel use. Within 10 days of discontinuation, the owner or operator shall notify the Executive Officer in writing of this change in fuel use and shall include an update to any annual report submitted to comply with subsections (j).~~

- ~~(C) Owners or operators that retrofit mobile cargo handling equipment with a VDECS that requires certain fuel properties to be met in order to achieve the required PM reduction or PM emissions shall only fuel the subject mobile cargo handling equipment with fuel that meets these specifications. In addition, owners or operators that choose a VDECS that requires certain fuel properties to be met in order to prevent damage to the VDECS or an increase in toxic air contaminants, other harmful compounds, or in the nature of the emitted PM, shall only fuel the subject mobile cargo handling equipment with fuel that meets these specifications.~~

**(f) Compliance Extensions**

An owner or operator may be granted an extension to a compliance deadline specified in subsection (e) for one of the following reasons. If a compliance extension is granted by the Executive Officer, the owner or operator shall be deemed to be in compliance as specified by the Executive Officer's authorization. Unless specifically stated, compliance extensions may not be combined or used consecutively, and only one compliance extension type may be granted per engine or vehicle.

- (1) *Compliance Extension for an Engine Near Retirement.* If an owner or operator has applied a Compliance Option to its fleet pursuant to the schedule set forth in Table 3 of subsection (e), and the next engine subject to the Compliance Options is scheduled to be retired from the active fleet within one year of the applicable compliance deadline, the owner or operator does not need to apply a Compliance Option to that engine for up to one year, provided the owner or operator maintains appropriate records and documentation, as specified in subparagraph (i)(1)(F), regarding the assigned retirement date and the engine is retired on or before the assigned date. If upon inspection, ARB finds the aforementioned conditions to have not been met, the engine would be in noncompliance from the date that compliance would otherwise have been required under the schedule set forth in Table 3 of subsection (e).

- (2) *Compliance Extension Based on No Verified Diesel Emission Control Strategy for Non-Yard Truck Mobile Cargo Handling Equipment.* If the Executive Officer has not verified a diesel emission control strategy or one is not commercially available for a particular engine and equipment combination, an annual extension in compliance, up to a maximum of two years, may be granted by the Executive Officer. The Executive Officer shall grant the extension upon determining that the following circumstances have been met:
- (A) The owner or operator has applied to the Executive Officer for a compliance extension for an engine six months prior to each compliance deadline specified in subsection (e)(3)(C) and provided sufficient documentation to meet the conditions set forth below. The owner or operator may, six-months prior to the expiration of the extension, apply for an additional one-year extension. In such a case, the owner or operator shall once again be required to show to the Executive Officer's satisfaction that the conditions set forth below have been met:
1. Establish that it has applied a Compliance Option specified in subsection (e)(3) to all applicable engines in its fleet for which a Compliance Option is feasible pursuant to the schedule set forth in Table 3 of subsection (e),
  2. Identify each engine for which an extension is requested by engine serial number; engine manufacturer, model year, family, and series; and type of mobile cargo handling equipment, for which a specific diesel emission control strategy would jeopardize the original engine warranty and a statement from the engine manufacturer or authorized dealer stating the original engine warranty would be jeopardized; or
  3. Identify each engine and equipment or vehicle combination for which an extension is requested by engine serial number; engine manufacturer, model year, family, and series; and type of mobile cargo handling equipment, for which no diesel emission control strategy is commercially available and a list of manufacturers that have been contacted with their responses to a request to purchase, and
  4. Describe the reason(s) for the request for a compliance extension for each engine or engine and equipment or vehicle combination.
- (3) *Use of Experimental Diesel Particulate Matter Emission Control Strategies for Non-Yard Truck Mobile Cargo Handling Equipment.* An annual compliance extension may be granted by the Executive Officer for the use of an experimental, or non-verified, diesel PM emission control strategy if a VDECS is not available or if the owner or operator can demonstrate that an existing VDECS is not feasible for their equipment or application. The owner or operator shall keep documentation of this use in records as specified in paragraph (i)(1)(G). Each mobile cargo handling equipment engine will be considered to be in compliance for the duration of the experiment, until the extension expires. The owner or operator must bring the mobile cargo handling equipment into compliance prior to the end of the annual compliance extension. The Executive

Officer may grant the extension upon determining that the owner or operator has met the conditions specified below:

- (A) The engine owner or operator has applied to the Executive Officer for a compliance extension six months prior to each compliance deadline, including annually if the owner or operator wishes to continue with the experimental controls. The application must include emissions data demonstrating the experimental control achieves at least a Level 1 diesel PM emission reduction through:
1. off-road engine certification test data for the cargo handling equipment engine;
  2. engine manufacturer test data;
  3. emissions test data from a similar engine;
  4. emissions test data used in meeting the requirements of the Verification Procedure for the emission control strategy implemented; or
  5. emissions testing conducted under the following conditions:
    - a. baseline testing may be conducted with the emission control strategy in place, provided the test sample is taken upstream of the emission control strategy;
    - b. control strategy testing shall be performed on the cargo handling equipment engine with full implementation of the emission control strategy;
    - c. the percent change from baseline shall be calculated as the baseline emissions minus control strategy emissions, with the difference being divided by the baseline emissions and the result expressed as a percentage;
    - d. the same test method shall be used for determining both baseline emissions and control strategy emissions; and
    - e. diesel PM, NO<sub>x</sub>, CO, HC, NMHC, and CO<sub>2</sub> testing shall be done in accordance with one of the following methods:
      - i. International Organization for Standardization (ISO) 8178 Test procedures: ISO 8178-1: 1996(E) ("ISO 8178 Part 1"); ISO 8178-2: 1996(E) ("ISO 8178 Part 2"); and ISO 8178-4: 1996(E) ("ISO 8178 Part 4"), which are incorporated herein by reference; or
      - ii. Title 13, California Code of Regulations, section 2423, "Exhaust Emission Standards and Test Procedures – Off-Road Compression Ignition Engines," which is incorporated herein by reference.
- (B) The application for extension must include the following: explanation demonstrating that the highest level VDECS are not feasible for the specific equipment or application (if applicable), identification of each engine (serial number, engine manufacturer, model year, family, and series), description of the emission control system to be demonstrated, emissions data required in (A) above, the contact information for the emission control system supplier,

and a letter of intent from the supplier that they intend to apply for verification of the experimental system;

- (C) The owner or operator must bring the mobile cargo handling equipment into compliance prior to the end of the compliance extension period;
  - (D) If VDECS are available, or become available during the extension period, and are determined to be feasible for the specific engine and equipment type, the owner or operator must demonstrate that the experimental control achieves equivalent to or better than a Level 1 VDECS; and
  - (E) No experimental diesel particulate matter emission control strategy may be used on mobile cargo handling equipment after December 31, 2015.
- (4) *Compliance Extension for Equipment Manufacturer Delays.* An owner or operator who has purchased new equipment in order to comply with subsection (e), including an owner or operator who has been granted a compliance extension per subsections (f)(2), (f)(3), or (f)(5), will be considered to be in compliance if the new equipment has not been received due to manufacturing delays, as long as the following conditions are met:
- (A) The equipment was purchased, or the owner or operator and seller had entered into contractual agreement for the purchase, at least six months prior to the required compliance date as specified in subsection (e); and
  - (B) Proof of purchase, such as a purchase order or signed contract for the sale, including engine specifications for each applicable equipment, must be maintained by the owner or operator and provided to an agent or employee of ARB upon request.
- (5) *Compliance Extension for Yard Trucks Having VDECS with Minimum Use Requirements.* If VDECS were installed on a yard truck prior to December 31, 2005, and the minimum use requirements of the VDECS, as established under a public funding program, is later than the compliance date as specified in subsection (e)(2)(B), an exemption from compliance may be extended to three years beyond the installation date of the VDECS if the following conditions are demonstrated by the owner or operator:
- (A) The VDECS was installed using funding from a public agency; and
  - (B) The funding program stipulated minimum use requirements that would expire after the required compliance date as specified in subsection (e)(2)(B).

**(g) Diesel Emission Control Strategy Special Circumstances**

An owner or operator shall maintain the original level of the elected Compliance Option for each engine once that engine is required to be in compliance, and is not required to upgrade to a higher level of Compliance Option, except under specified special circumstances, as follows:

- (1) In the event of a failure or damage of a diesel emission control strategy, the following conditions apply:
  - (A) Failure or Damage during the Warranty Period. If a diesel emission control strategy fails or is damaged within its warranty period and the diesel emission control strategy manufacturer or authorized dealer determines it cannot be repaired, the owner or operator shall replace the diesel emission control strategy with either the same level diesel emission control strategy or another approved Compliance Option as defined in subsection (e)(3) within 90 days of diesel emission control strategy failure.
  - (B) Failure or Damage Outside of Warranty Period. If a diesel emission control strategy fails or is damaged outside of its warranty period, and it cannot be repaired, the owner or operator shall apply a Compliance Option within 90 days, as defined in subsection (e)(3).

**(h) Alternative Compliance Plan for Non-Yard Truck Cargo Handling Equipment**

- (1) Requirements
  - (A) The purpose of this subsection is to allow any person ("person" or "applicant") subject to this regulation the option of complying with the requirements of this subsection (h) in lieu of the requirements of subsection (e)(3). Under this subsection (h), alternative emission control strategies (AECS) can be implemented as an alternative compliance plan (ACP), provided they result in no greater emissions, expressed in pounds, of diesel PM and NOx from the non-yard truck cargo handling equipment, over the applicable calendar year, relative to the emissions that would have occurred under subsection (e)(3).
  - (B) An applicant wishing to participate in an ACP may include one or more non-yard truck cargo handling equipment in the ACP, but the applicant shall only include equipment that the person owns or operates under their direct control at the same port or intermodal rail yard.
  - (C) No cargo handling equipment shall be included in more than one ACP.

- (D) AECS may include, but are not limited to:
1. equipment engine modifications,
  2. exhaust treatment control,
  3. engine repower,
  4. equipment replacement, and
  5. use of alternative fuels or fuel additives.
- (E) The ACP application demonstrating compliance with this subsection shall contain, at a minimum, the following information:
1. the company name, address, and contact information;
  2. the equipment subject to the ACP, including equipment and engine make, model, and serial numbers, and other information that uniquely identify the equipment;
  3. documentation, calculations, emissions test data, or other information that establishes the diesel PM and NOx reductions, expressed in pounds, from non-yard truck cargo handling equipment will be equivalent to or greater than the emission reductions that would have been achieved upon compliance with subsection (e)(3);
  4. the proposed recordkeeping, reporting, monitoring, and testing procedures that the applicant plans to use to demonstrate continued compliance with the ACP.
- (F) Emission reduction calculations demonstrating equivalence with the requirements of subsection (e)(3) shall only include diesel PM and NOx emissions from non-yard truck cargo handling equipment that operate at the California port or intermodal rail yard to which the ACP applies.
- (G) Any owner or operator subject to an approved ACP shall maintain operating records in a manner and form as specified by the Executive Officer in the approved ACP. Required records may include, but are not limited to, information on hours of operation, fuel usage, maintenance procedures, and emissions test results. Such records and reports shall be retained for a period of not less than three (3) years and shall be submitted to the Executive Officer in the manner specified in the approved ACP and upon request by the Executive Officer.
- (H) Emission reductions included in an ACP shall not include reductions that are otherwise required by any local, State, or federal rule, regulation, or statute, or that are achieved or estimated from equipment not located at the specific port or intermodal rail yard to which the ACP applies.
- (I) No person may operate any non-yard truck cargo handling equipment under an ACP unless the applicant has first been notified in writing by the Executive Officer that the ACP application has been approved. Prior to such

approval, applicants shall comply with the provisions of this section, including the requirements in subsection (e)(3).

(2) Application Process

(A) Applications for an ACP shall be submitted in writing to the Executive Officer for evaluation.

(B) The Executive Officer shall establish an Internet site ("ACP Internet site") in which all documents pertaining to an ACP application will be made available for public review. The Executive Officer shall also provide a copy of all such documents to any person upon request ("interested party(ies)"). The Executive Officer shall provide two separate public comment periods during the ACP application process, as specified in this subsection (h)(2).

(C) Completeness Determination

Within 15 days after receiving an ACP application(s), the Executive Officer shall notify the applicant whether the application is deemed sufficiently complete to proceed with further evaluation. If the application is deemed incomplete, the notification shall identify the application's deficiencies. The Executive Officer shall have an additional 15-day period for reviewing each set of documents or information submitted in response to an incompleteness determination. Nothing in this subsection prohibits the Executive Officer from requesting additional information from the applicant, during any part of the ACP application process, which the Executive Officer determines is necessary to evaluate the application.

(D) Notice of Completeness and 30-Day First Public Comment Period

After an ACP application has been deemed complete, the Executive Officer shall provide a 30-day public comment period to receive comments on any element of the ACP application and whether the Executive Officer should approve or disapprove the ACP application based on the contents and merits of the application. The Executive Officer shall notify all interested parties of the following:

1. the applicant(s);
2. the start and end dates for the 30-day first comment period; and
3. the address of the ACP Internet site where the application is posted.

The Executive Officer shall also make this notification available for public review on the ACP Internet site.

(E) Proposed Action and 15-Day Second Public Comment Period

Within 30 days after the first public comment period ends, the Executive Officer shall notify the applicant and all interested parties of ARB's proposed approval or disapproval. This notification shall propose to approve the application as submitted, disapprove the application, or approve the ACP application with modifications as deemed necessary by the Executive Officer. The notification shall identify the start and end dates for the 15-day second public comment period. During the second public comment period, any person may comment on the Executive Officer's proposed approval or disapproval of the ACP application and any element of the application. The Executive Officer shall also make this notification available for public review on the ACP Internet site.

(F) Final Action

Within 15 days after the second public comment period ends, the Executive Officer shall take final action to either approve or deny an ACP application and shall notify the applicant accordingly. If the application is denied or modified, the Executive Officer shall state the reasons for the denial or modification in the notification. The notification to the applicant and approved ACP, if applicable, shall be made available to the public on the ACP Internet site. In addition, the Executive Officer shall consider and address all comments received during the first and second public comment periods, and provide responses to each comment on the ACP Internet site.

(G) Notification to the Executive Officer of Changes to an Approved ACP

The applicant shall notify the Executive Officer in writing within 30 days upon learning of any information that would alter the emissions estimates submitted during any part of the ACP application process. If the Executive Officer has reason to believe that an approved ACP has been granted to a person that no longer meets the criteria for an ACP, the Executive Officer may, pursuant to subsection (h)(3) below, modify or revoke the ACP as necessary to assure that the applicant and subject non-yard truck cargo handling equipment will meet the emission reduction requirements in this section.

(3) Revocation or Modification of Approved ACPs

With 30-days notice to the ACP holder, the Executive Officer may revoke or modify, as needed, an approved ACP if there have been multiple violations of the ACP provisions or the requirements of the approved ACP; or if the Executive Officer has reason to believe that an approved ACP has been granted that no longer meets the criteria or requirements for an ACP or the applicant can no longer comply with the requirements of the approved ACP in its current form.



Public notification of a revocation or modification of an approved ACP shall be made available on the ACP Internet site.

**(i) Recordkeeping Requirements**

Beginning December 31, 2006, an owner or operator of mobile cargo handling equipment shall maintain the following records or copies of records at port and intermodal rail yard facilities where applicable. The owner or operator shall provide the following records for inspection to an agent or employee of ARB upon request, including copies of these records at the department's expense, for all mobile cargo handling equipment subject to compliance with the regulation:

- (1) Records Kept at Terminal. The owner or operator shall keep the following records accessible either in hard copy format or computer records at the terminal where the mobile cargo handling equipment normally resides:
  - (A) Owner or Operator Contact Information
    1. Company name
    2. Contact name, phone number, address, e-mail address
    3. Address of equipment
  - (B) Equipment and Engine Information
    1. Make of equipment and engine
    2. Model of equipment and engine
    3. Engine family (if applicable)
    4. Engine serial number
    5. Year of manufacture of equipment and engine (if unable to determine, approximate age)
    6. Rated brake horsepower
    7. Control equipment (if applicable)
      - a. Type of diesel emission control strategy
      - b. Serial number of installed diesel emission control strategy
      - c. Manufacturer of installed diesel emission control strategy
      - d. Model of installed diesel emission control strategy
      - e. Installation date of installed diesel emission control strategy
      - f. Level of control (1, 2, or 3); if using a Level 1 or 2, include the reason for the choice
      - g. Documentation for Minimum Use Requirement Compliance Extension pursuant to paragraph (f)(5)
  - (C) Records of maintenance for each installed diesel emission control strategy
  - (D) Fuel(s) Used
    1. CARB Diesel
    2. Alternative diesel fuel (specify)
    3. Alternative fuel (specify)

4. Combination (dual fuel) (specify)
  5. Other (specify)
- (E) Operation Information
1. Describe general use of engine
  2. Typical load (percent of maximum bhp rating)
  3. Typical annual hours of operation
  4. If seasonal, months of year operated and typical hours per month operated
- (F) For each engine for which an owner or operator is claiming an exemption pursuant to paragraph (f)(1), the retirement date correlated to the information in paragraph (i)(1) above
- (G) For each engine for which an owner or operator is claiming an extension pursuant to paragraph (f)(3), the records of the test plan, including start and end dates of the experiment; diesel particulate matter emission control strategy manufacturer name and contact information (representative, address, and phone number); name and type of experimental diesel particulate matter emission control strategy; and targeted data to be generated by experiment, correlated to the information in paragraph (i)(1) above
- (H) For each engine for which an owner or operator is claiming an extension pursuant to paragraph (f)(4), the purchase order or signed contract between the owner or operator and seller of the new equipment that has been purchased in order to comply with subsection (e)
- (I) A statement of compliance, prepared beginning January 1, 2007, and renewed each January 1 thereafter until January 1, 2016, certifying that the owner's or operator's engines are in compliance as required, including the following:
1. "The mobile cargo handling equipment at terminal (insert terminal name and name of port or intermodal rail yard) are in compliance with title 13, California Code of Regulations, section 2479;" and
  2. The owner's or operator's name, business address, business telephone; and
  3. The signature of the owner or operator or its agent and date signed.
- (2) Records Kept in Mobile Cargo Handling Equipment. For each mobile cargo handling equipment, the owner or operator shall keep the following information affixed to the driver's side door jamb, or another readily accessible location known by the owner or operator of each mobile cargo handling equipment, in the form of a legible and durable label or in an alternative form approved by the

Executive Officer or designee that is immediately accessible at the time of inspection by the enforcement agency:

- (A) For each installed diesel emission control strategy, label information as specified in title 13, CCR, section 2706(g), and the installation date; or
  - (B) For each mobile cargo handling equipment that has installed a certified on-road or off-road engine in order to comply with subsection (e), the engine make, model, and installation date; or
  - (C) Engine model year and planned compliance date; or
  - (D) Engine model year and retirement date for an engine for which an owner or operator is claiming an extension pursuant to paragraph (f)(1); or
  - (E) Engine model year and beginning and end date for which an owner or operator is claiming an extension pursuant to paragraph (f)(2); or
  - (F) Engine model year and beginning and ending date of the test plan for an engine for which an owner or operator is claiming an extension pursuant to paragraph (f)(3); or
  - (G) Engine model year and date of purchase of replacement engine or equipment for which an owner or operator is claiming an extension pursuant to paragraph (f)(4); or
  - (H) Engine model year, date of installation of VDECS, and supporting documentation for public funding program, for the engine and equipment for which an owner or operator is claiming an extension pursuant to paragraph (f)(5).
- (3) Each owner or operator shall maintain these records for each mobile cargo handling equipment until it is sold outside of the State of California or is no longer used at a port or intermodal rail yard in the State of California. If ownership is transferred, the seller shall convey the records to the buyer.

**(j) Reporting Requirements**

- (1) Compliance Plan. By January 31, 2007, each owner or operator of in-use mobile cargo handling equipment subject to the requirements of subsection (e) shall provide the following information to the Executive Officer:
- (A) Information listed in paragraph (i)(1), and
  - (B) An identification of the planned control strategy (Compliance Plan) for each mobile cargo handling equipment listed in paragraph (i)(1) that, when

implemented, will result in compliance with subsection (e). If applicable, the information should include the Executive Order number issued by the Executive Officer for a VDECS that has been approved by the Executive Officer through the Verification Procedure. The Compliance Plan is not binding and can be changed by the owner or operator prior to the required compliance date(s).

- (2) Demonstration of Compliance. By no later than the earliest applicable compliance date specified in subsections (e)(2)(B) or (e)(3)(C), for each in-use cargo handling equipment subject to the requirements of subsection (e), the owner or operator shall provide the following information to the Executive Officer:
  - (A) Information listed in (i)(1), and
  - (B) An identification of the control strategy implemented for each mobile cargo handling equipment in accordance with the requirements of subsection (e) for purposes of demonstrating compliance.
- (3) Annual Reporting. Each terminal owner or operator shall submit an annual report to the Executive Officer by January 31, 2007, and by each January 31 annually, through 2016 as described below:
  - (A) Company name;
  - (B) Contact name, phone number, address, e-mail address;
  - (C) Address of equipment, including name of port or intermodal rail yard where equipment is operated;
  - (D) The population, as of January 1 of that year, of equipment in each yard truck model year group and each non-yard truck model year group; and
  - (E) A signed affidavit stating the completeness and accuracy of the annual report.
- (4) Reporting for Off-Road Equipment that Does Not Handle Cargo at any Time. Each terminal owner or operator to whom subsection (c)(3) applies, shall submit a report to the Executive Officer by January 31, 2007, as described below:
  - (A) Owner or Operator Contact Information
    - 1. Company name
    - 2. Contact name, phone number, address, e-mail address
    - 3. Address of equipment

- (B) Equipment and Engine Information
1. Make of equipment and engine
  2. Model of equipment and engine
  3. Engine family (if applicable)
  4. Engine serial number
  5. Year of manufacture of equipment and engine (if unable to determine, approximate age)
  6. Rated brake horsepower
  7. Control equipment (if applicable)
    - a. Type of diesel emission control strategy
    - b. Serial number of installed diesel emission control strategy
    - c. Manufacturer of installed diesel emission control strategy
    - d. Model of installed diesel emission control strategy
    - e. Installation date of installed diesel emission control strategy
    - f. Level of control (1, 2, or 3)

- (C) Fuel(s) Used
1. CARB Diesel
  2. Alternative diesel fuel (specify)
  3. Alternative fuel (specify)
  4. Combination (dual fuel) (specify)
  5. Other (specify)

- (D) Operation Information
1. Describe general use of engine
  2. Typical load (percent of maximum bhp rating)
  3. Typical annual hours of operation
  4. If seasonal, months of year operated and typical hours per month operated

**(k) Right of Entry**

An agent or employee of the Air Resources Board has the right of entry to port and intermodal rail yard cargo handling facilities for the purpose of inspecting on-road and off-road cargo handling equipment and their records to determine compliance to these regulations.

**(l) Prohibitions**

No person who is engaged in this State in the business of selling to an ultimate purchaser, or renting or leasing new or used mobile cargo handling equipment, including, but not limited to, manufacturers, distributors, and dealers, shall sell, offer for sell, import, deliver, purchase, receive, or otherwise acquire a new or used mobile cargo handling equipment for the purpose of selling, renting, or leasing in California, that does not meet the performance requirements of this regulation.

**(m) Severability**

If any subsection, paragraph, subparagraph, sentence, clause, phrase, or portion of this regulation is, for any reason, held invalid, unconstitutional, or unenforceable by any court of competent jurisdiction, such portion shall be deemed as a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of the regulation.

**(n) Submittal of Documents**

- (A) All documents required under this regulation to be submitted to the Executive Officer shall be submitted as follows:

California Air Resources Board  
Stationary Source Division, Cargo Handling Equipment  
P.O. Box 2815  
Sacramento, California 95812-2815

- (B) An alternative method, including electronic submittals, may be approved by the Executive Officer.

NOTE: Authority cited: sections 39600, 39601, 39618, 39658, 39659, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3, 42400.3.5, 42400.6, 42402, 42402.1, 42402.2, 42402.3, 42402.4, 42410, 43013, 43018, California Health and Safety Code. Reference: sections 39618, 39650, 39658, 39659, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3, 42400.3.5, 42400.6, 42402, 42402.1, 42402.2, 42402.3, 42402.4, 42410, 43013, and 43018.

## Final Regulation Order

### MOBILE CARGO HANDLING EQUIPMENT AT PORTS AND INTERMODAL RAIL YARDS.

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**Note:** This document is printed in a style to indicate changes from the existing provisions in title 13, California Code of Regulations, section 2479. All existing language is indicated by plain type. All additions to the language are indicated by underlined text. All deletions are indicated by ~~strikeout~~. Portions of the regulations not being changed are indicated by asterisks (\*\*\*\*\*).

Amend title 13, California Code of Regulations (CCR) section 2479 to read as follows.

#### **Section 2479. Regulation for Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards.**

##### **(a) Purpose**

The purpose of this regulation is to reduce diesel particulate matter (PM) and criteria pollutant emissions from compression ignition (CI) mobile cargo handling equipment that operate at ports and intermodal rail yards in the state of California.

##### **(b) Applicability**

Except as provided in subsection (c), the regulation would apply to any person who conducts business in California who sells, offers for sale, leases, rents, purchases, owns or operates any CI mobile cargo handling equipment that operates at any California port or intermodal rail yard. Mobile cargo handling equipment propelled by engines certified to a cycle other than the diesel cycle, i.e. otto cycle engine, are not subject to this section.

##### **(c) Exemptions**

- (1) The requirements of this section do not apply to:
  - (A) mobile cargo handling equipment that do not operate at a port or intermodal rail yard;
  - (2B) ~~The requirements of this section do not apply to portable CI engines;~~
- ~~(3) The requirements of subsections (e), (f), (g), (h), and (i) do not apply to mobile cargo handling equipment that are not used to handle cargo at any time but are used for transporting personnel or fuel delivery. Examples include, but are not limited to, fuel delivery trucks operating solely at the terminal to deliver fuel to terminal equipment and vans and buses used to transport personnel;~~

- ~~(4C) The requirements of this section do not apply to military tactical support cargo handling equipment;~~
  - ~~(D) equipment used solely to support construction activities at a port or intermodal rail yard;~~
  - ~~(5E) The requirements of this section do not apply to mobile cranes as defined in subsection (d)(3340); and~~
  - ~~(5F) The requirements of this section do not apply to sweepers as defined in subsection (d)(5464); and~~
  - ~~(G) rented, leased, or contracted equipment brought onto a port or intermodal rail yard to perform unexpected repairs that are not routine in nature or due to predictable maintenance activities.~~
- (32) The requirements of subsections (e) through (j) do not apply to mobile cargo handling equipment that are used exclusively for transporting personnel or delivering fuel to equipment or vehicles on terminal or rail yard property. Examples include, but are not limited to, fuel delivery trucks operating solely at the terminal to deliver fuel to terminal equipment and vans and buses used to transport personnel.
- (3) The requirements of subsection (e)(1)(B) do not apply to non-yard truck cargo handling equipment that is owned, leased, or rented by an owner or operator of a port terminal or intermodal rail yard and has been moved from one port terminal or intermodal rail yard to another port terminal or intermodal rail yard under the control of the same owner or operator and has received approval for such transfer under subsection (k) below.

**(d) Definitions**

For purposes of this section, the definitions of Health and Safety Code section 39010 through 39060 shall apply except to extent that such definitions may be modified by the following definitions that apply specifically to this regulation:

- (1) "Alternative Diesel Fuel" means any fuel used in a CI engine that is not commonly or commercially known, sold, or represented by the supplier as diesel fuel No. 1-D or No. 2-D, pursuant to the specifications in ASTM D975-81, "Standard Specification for Diesel Fuel Oils," as modified in May 1982, which is incorporated herein by reference, or an alternative fuel, and does not require engine or fuel system modifications for the engine to operate, although minor modifications (e.g., recalibration of the engine fuel control) may enhance performance. Examples of alternative diesel fuels include, but are not limited to, biodiesel that does not meet the definition of CARB diesel fuel; Fischer-Tropsch fuels; emulsions of water in diesel fuel; and fuels with a fuel additive, unless:
- (A) the additive is supplied to the engine fuel by an on-board dosing mechanism, or
  - (B) the additive is directly mixed into the base fuel inside the fuel tank of the engine, or



- (C) the additive and base fuel are not mixed until engine fueling commences, and no more additive plus base fuel combination is mixed than required for a single fueling of a single engine.
- (2) "Alternative Fuel" means natural gas, propane, ethanol, methanol, gasoline (when used in hybrid electric mobile cargo handling equipment only), hydrogen, electricity, fuel cells, or advanced technologies that do not rely on diesel fuel. "Alternative fuel" also means any of these fuels used in combination with each other or in combination with other non-diesel fuel.
- (3) "Alternate PM Standard" means one of the Family Emissions Limits (FEL) standards that are currently available to engine manufacturers under title 13, California Code of Regulations (CCR), section 2423. Alternate standards are of limited duration and may be selectively applied to total or partial engine family production volumes.
- (34) "Basic Container Handling Equipment" means mobile cargo handling equipment, other than yard trucks, bulk cargo handling equipment, and RTG cranes, used to handle cargo containers. Basic Container Handling Equipment includes but is not limited to top handlers, side handlers, reach stackers, straddle carriers, and forklifts.
- (45) "Bulk Cargo Handling Equipment" means mobile cargo handling equipment, other than yard trucks, basic container handling equipment, and RTG cranes, generally used to move non-containerized cargo, including but not limited to dozers, excavators, loaders, tractors, and aerial lifts.
- (56) "California Air Resources Board (CARB) Diesel Fuel" means any diesel fuel that meets the specifications of vehicular diesel fuel, as defined in title 13 CCR, sections 2281, 2282, and 2284.
- (67) "Carbon Monoxide (CO)" is a colorless, odorless gas resulting from the incomplete combustion of hydrocarbon fuels.
- (8) "Cargo" means material, goods, or commodities that have been or will be transported to or from a port or intermodal rail yard by ship, train, truck, or other mode of transportation.
- (79) "Cargo Handling Equipment" means any off-road, self-propelled vehicle or equipment used at a port or intermodal rail yard to lift or move container, bulk, or liquid cargo carried by ship, train, or another vehicle, or used to perform maintenance and repair activities that are routinely scheduled or that are due to predictable process upsets. Equipment includes, but is not limited to, rubber-tired gantry cranes, yard trucks, top handlers, side handlers, reach stackers, forklifts, loaders, aerial lifts, excavators, and dozers.
- (810) "Certified Off-road Diesel Engine" means an engine certified to California off-road engine emission standards under title 13 CCR, section 2423.

- (11) "Class I Railroad" is a freight railway based on large revenues (\$250 million or more) in comparison to the revenues of Class II (which ranges from greater than \$20 million but less than \$250 million) and Class III (less than \$20 million) railways, as defined by the Surface Transportation Board.
- (912) "Certified On-road Diesel Engine" means an engine certified to California on-road diesel engine emission standards under title 13 CCR, section 1956.8.
- (4013) "Compression Ignition (CI) Engine" means an internal combustion engine with operating characteristics significantly similar to the theoretical diesel combustion cycle. The regulation of power by controlling fuel supply in lieu of a throttle is indicative of a compression ignition engine. Any engine certified under the diesel cycle is included under the definition of a compression ignition engine.
- (14) "Construction Activities" means any activities at a port or intermodal rail yard that is preparatory to or involved with the building, alteration, rehabilitation, demolition, or improvement of property, including, but not limited to, the following activities; grading excavation, loading, crushing, cutting, planning, shaping, or ground breaking.
- (4415) "Contiguous Properties" means two or more parcels of land with a common boundary or separated solely by a public roadway or other public right-of-way.
- (4216) "Diesel Fuel" means any fuel that is commonly or commercially known, sold, or represented by the supplier as diesel fuel, including any mixture of primarily liquid hydrocarbons (HC) - organic compounds consisting exclusively of the elements carbon and hydrogen - that is sold or represented by the supplier as suitable for use in an internal combustion, compression-ignition engine.
- (4317) "Diesel-Fueled" means a CI engine fueled by diesel fuel, CARB diesel fuel, or jet fuel, in whole or part.
- (4418) "Diesel Oxidation Catalyst (DOC)" means a catalyst promoting oxidation processes in diesel exhaust, and usually designed to reduce emissions of the organic fraction of diesel particulates, gas-phase HC, and CO.
- (4519) "Diesel Particulate Filter (DPF)" means an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate and periodically removes the collected particles by either physical action or by oxidizing (burning off) the particles in a process called regeneration.
- (4620) "Diesel Particulate Matter (Diesel PM)" means the particles found in the exhaust of diesel-fueled CI engines. Diesel PM may agglomerate and adsorb other species to form structures of complex physical and chemical properties.
- (4721) "Dozer" means an off-road tractor, either tracked or wheeled, equipped with a blade.

- (~~18~~22) "Emission Control Strategy" means any device, system, or strategy employed with a diesel engine that is intended to reduce emissions, including, but not limited to, diesel oxidation catalysts, selective catalytic reduction systems, fuel additives, diesel particulate filters, alternative diesel fuels, water emulsified fuels, and any combination of the above.
- (~~19~~23) "Excavator" means an off-road vehicle consisting of a backhoe and cab mounted on a pivot atop an undercarriage with tracks or wheels.
- (~~20~~24) "Executive Officer" means the Executive Officer of the California Air Resources Board or his/her designee.
- (25) "Family Emissions Limits (FEL)" means an emission level that is declared by the manufacturer to serve in lieu of an emissions standard for certification purposes and for the averaging, banking, and trading program as defined in title 13, CCR, section 2423.
- (~~24~~26) "Fleet" means the total number of mobile cargo handling equipment vehicles owned, rented, or leased by an owner or operator at a specific terminal or intermodal yard location.
- (~~22~~27) "Forklift" means an off-road industrial truck used to hoist and transport materials by means of steel fork(s) under the load.
- (~~23~~28) "Fuel Additive" means any substance designed to be added to fuel or fuel systems or other engine-related engine systems such that it is present in-cylinder during combustion and has any of the following effects: decreased emissions, improved fuel economy, increased performance of the engine; or assists diesel emission control strategies in decreasing emissions, or improving fuel economy or increasing performance of the engine.
- (29) "Hybrid" means powered by two or more sources of energy.
- (~~24~~30) "Heavy-duty Pilot Ignition Engine" means an engine designed to operate using an alternative fuel, except that diesel fuel is used for pilot ignition at an average ratio of no more than one part diesel fuel to ten parts total fuel on any energy equivalent basis. An engine that can operate or idle solely on diesel fuel at any time does not meet this definition.
- (~~25~~31) "Hydrocarbon (HC)" means the sum of all hydrocarbon air pollutants.
- (~~26~~32) "In-Use" means a CI engine that is not a "new" CI engine.
- (~~27~~33) "Intermodal Rail Yard" means any transportation facility, owned or operated by a Class I Railroad, which is primarily dedicated to the business of rail and/or intermodal rail operations where cargo is transferred to or from a train and any

other form of conveyance, such as train to ship, ship to train, train to truck, or truck to train.

(2834) "Lease" means a contract by which one conveys cargo handling equipment for a specified term and for a specified rent.

(2935) "Level" means one of three categories of Air Resources Board-verified diesel emission control strategies as set forth in title 13, CCR, section 2701 et seq: Level 1 means the strategy reduces engine diesel particulate matter emissions by between 25 and 49 percent, Level 2 means the strategy reduces engine diesel particulate matter emissions by between 50 and 84 percent, and Level 3 means the strategy reduces engine diesel particulate matter emissions by 85 percent or greater, or reduces engine emissions to less than or equal to 0.01 grams diesel PM per brake horsepower-hour.

(3036) "Loader" means any type of off-road tractor with either tracks or rubber tires that uses a bucket on the end of movable arms to lift and move material; can be also referred to as a front-end loader, front loader, skid steer loader, backhoe, rubber-tired loader, or wheeled loader.

(37) "Low-throughput Port" means a port that has a two-year average annual cargo throughput of less than one million tons per year, not including petroleum products, as reported by the U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center.

(3138) "Military Tactical Support Cargo Handling Equipment" means cargo handling equipment that meets military specifications, owned by the U.S. Department of Defense and/or the U.S. military services, and used in combat, combat support, combat service support, tactical or relief operations, or training for such operations.

(3239) "Minimum Use Requirement" means an agreement, as part of state or local incentive funding programs or written agreement between mobile cargo handling equipment owners or operators and the Ports of Long Beach, Los Angeles, or Oakland, to use an emission control device on mobile cargo handling equipment for a specified minimum number of years and/or hours.

(3340) "Mobile Crane" means a mobile machine, other than a rubber-tired gantry crane, with a hoisting mechanism mounted on a specially constructed truck chassis or carrier; a mobile crane can either be a single-engine crane or a two-engine crane.

(3441) "Model Year" means the CI engine manufacturer's annual production period, which includes January 1st of a calendar year, or if the manufacturer has no annual production period, the calendar year.

(3542) "Newly Purchased, Leased, or Rented Cargo Handling Equipment" means mobile cargo handling equipment, or a diesel-fueled CI engine installed in mobile cargo

handling equipment, that is newly purchased, rented, or leased, or otherwise brought onto a port or intermodal rail yard by an owner or operator on or after January 1, 2007, and is operated at a port or intermodal rail yard in the state of California after January 1, 2007.

~~(3643)~~ "Nitrogen Oxides (NOx)" means compounds of nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), and other oxides of nitrogen, which are typically created during combustion processes and are major contributors to smog formation and acid deposition.

~~(3744)~~ "Non-Methane Hydrocarbons (NMHC)" means the sum of all HC air pollutants except methane.

~~(3845)~~ "Non-Yard Truck Mobile Cargo Handling Equipment" means all mobile cargo handling equipment other than yard trucks.

~~(3946)~~ "Ocean-going Vessel" means a commercial, government, or military vessel meeting any one of the following criteria:

- (A) a vessel with a "registry" (foreign trade) endorsement on its United States Coast Guard certificate of documentation, or a vessel that is registered under the flag of a country other than the United States;
- (B) a vessel greater than or equal to 400 feet in length overall (LOA) as defined in 50 CFR § 679.2, as adopted June 19, 1996;
- (C) a vessel greater than or equal to 10,000 gross tons (GT ITC) per the convention measurement (international system) as defined in 46 CFR 69.51-.61, as adopted September 12, 1989; or
- (D) a vessel propelled by a marine compression ignition engine with a per-cylinder displacement of greater than or equal to 30 liters.

~~(4047)~~ "Off-Road Engine" means an engine used in an off-road vehicle, or piece of equipment, including a certified on-road diesel engine.

~~(4448)~~ "Off-Road Vehicle or Equipment" means any non-stationary device, including registered motor vehicles, powered by an internal combustion engine or motor, used primarily off the highways to propel, move, or transport persons or property.

(49) "Opacity" means the fraction of a beam of light, expressed in percent, which fails to penetrate a plume of smoke.

(50) "Otto cycle Engine" means a type of engine with operating characteristics significantly similar to the theoretical Otto combustion cycle. The primary means for controlling power output in an Otto cycle engine is by limiting the amount of air and fuel that can enter the combustion chambers of the engine. Gasoline-fueled engines are Otto cycle engines.

(4251) "Owner or Operator" means any person that owns or operates a port terminal or intermodal rail yard subject to the requirements of this section, including but not limited to:

- (A) an individual, trust, firm, joint stock company, business concern, partnership, limited liability company, association, or corporation including but not limited to, a government corporation; and
- (B) any city, county, district, commission, the state or any department, agency, or political subdivision thereof, any interstate body, and the federal government or any department or agency thereof to the extent permitted by law.

(4352) "Particulate Matter (PM)" means the particles found in the exhaust of CI engines, which may agglomerate and adsorb other species to form structures of complex physical and chemical properties.

(4453) "Port" is a publically or privately owned property located at a harbor or along a waterway where marine and port terminals typically load or unload water-borne commerce onto and from ocean-going vessels; a port includes all property within the physical boundaries of the port or demarcated as the port on city or county land maps as well as other contiguous or adjacent properties owned or operated by the port. ~~means a place, which typically consists of different terminals, where cargo is loaded onto and unloaded from ocean-going vessels primarily.~~ A port includes military terminals that operate cargo handling equipment when located as part of, or on contiguous properties with, non-military terminals.

(4554) "Portable CI Engine" means a compression ignition (CI) engine designed and capable of being carried or moved from one location to another. Indicators of portability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. Portable engines are not self-propelled.

(4655) "Purchased" means the date shown on the front of the cashed check, the date of the financial transaction, or the date on the engine purchasing agreement, whichever is earliest.

(4756) "Railcar Mover" means an off-road vehicle fitted with rail couplers and capable of traveling on both roads and rail tracks.

(4857) "Reach Stacker" means an off-road truck-like cargo container handler that uses an overhead telescopic boom that can reach across two or more stacks of cargo containers and lift the containers from the top.

(4958) "Registered Motor Vehicle" means a yard truck or other cargo handling vehicle that is registered as a motor vehicle under Vehicle Code section 4000, et seq.

(5059) "Rent" means payment for the use of mobile cargo handling equipment for a specified term.

- (5160) "Retirement" or "Retire" means an engine or vehicle that will be taken out of service by an owner or operator, ~~and will not be operated at any port or intermodal rail yard in the State of California~~ by the same or different owner or operator, and will not be replaced with a new engine or vehicle. The engine may be sold outside of California or scrapped.
- (5261) "Rubber-tired Gantry Crane or RTG Crane" means an off-road overhead cargo container crane with the lifting mechanism mounted on a cross-beam supported on vertical legs which run on rubber tires. RTG cranes do not include gantry cranes that operate on steel wheels and rails.
- (62) "Safe" means cargo handling equipment that can be operated with little or no additional risk of operational accidents due to, but not limited to, installation of verified diesel emission control strategies that impair the operator's operational vision to the front and sides or change vehicle balance. An Executive Officer determination regarding safe use shall be consistent with California and federal safety regulations and rulings.
- (5363) "Side Handler or Side Pick" means an off-road truck-like cargo container handler that uses an overhead telescopic boom to lift empty or loaded cargo containers by grabbing either two top corners on the longest side of a container, both arms of one side of a container, or both top and bottom sides of a container.
- (5464) "Sweeper" means an off-road vehicle with attached brushes underneath that sweep the ground and pick up dirt and debris.
- (5565) "Terminal" means a facility, including one owned or operated by the Department of Defense or the U.S. military services, that operates cargo handling equipment at a port or intermodal rail yard.
- (5666) "Tier 4 Off-road Emission Standards" means the emission standards promulgated by the United States Environmental Protection Agency in "Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel; Final Rule" (Vol. 69, No. 124 Fed. Reg. pp. 38957-39273, June 29, 2004) which harmonize with the final amended emission standards for newly manufactured off-road engines approved by the Air Resources Board on December 12, 2004.
- (5767) "Top Handler or Top Pick" means an off-road truck-like cargo container handler that uses an overhead telescopic boom to lift empty or loaded cargo containers by grabbing the top of the containers.
- (68) "Two-year Average Annual Cargo Throughput" means the arithmetic average of the annual cargo throughput, not including petroleum products, as reported by the U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center, for the most recently reported calendar year and the calendar year immediately preceding that year.

(69) "Urban Area" means a densely developed territory that contains 50,000 or more people as defined by the latest U.S. Census Bureau census.

~~(5870)~~ "Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines (Verification Procedure)" means the Air Resources Board (ARB) regulatory procedure codified in title 13, CCR, sections 2700-2710, which is incorporated herein by reference, that engine manufacturers, sellers, owners, or operators may use to verify the reductions of diesel PM and/or NOx from in-use diesel engines using a particular emission control strategy.

~~(5971)~~ "Verified Diesel Emission Control Strategy (VDECS)" means an emission control strategy, designed primarily for the reduction of diesel PM emissions, which has been verified pursuant to the "Verification Procedure for In-Use Strategies to Control Emissions from Diesel Engines" in title 13, California Code of Regulations, commencing with section 2700.

(72) "Warranty Period" means the period of time and/or mileage that the vehicle, engine, or part is covered by the engine manufacturer's new engine warranty provisions.

(73) "Water-borne Commerce" means the movement of materials, goods or commodities using vessels or other craft plying upon navigable waters of the United States.

~~(6074)~~ "Yard truck" means an off-road mobile utility vehicle used to carry cargo containers with or without chassis; also known as utility tractor rig (UTR), yard tractor, yard goat, yard hostler, yard hustler, or prime mover.

**(e) Requirements**

*(1) Newly Purchased, Leased, or Rented Equipment Performance Standards:*

*(A) Yard Trucks:*

1. Except as provided in subsection (c), on or after January 1, 2007, no owner or operator shall operate any newly purchased, leased, or rented yard trucks unless they are equipped with the following types of engines:
  - a. Yard trucks that are registered as motor vehicles shall be equipped with engines that meet the on-road emission standards as specified in title 13, California Code of Regulations, section 1956.8, for the model year in which the yard trucks and engines were newly purchased, leased, or rented.
  - b. Yard trucks that are *not* registered as motor vehicles shall be equipped with engines:



- i.(i) that are certified to the on-road emission standards set forth in title 13, CCR, section 1956.8; for the model year in which the yard trucks and engines were newly purchased, leased, or rented; or
- ii.(ii) that have been certified to meet the final Tier 4 off-road emission standards for the rated horsepower; or
- (iii) that have been equipped with alternative power systems that can be demonstrated to the Executive Officer, through use of reliable and repeatable emissions data from one of the following tests to meet either the on-road NO<sub>x</sub> and PM emission standards as specified in title 13, CCR section 1956.8 or the Tier 4 final off-road NO<sub>x</sub> and PM emissions standards as specified in title 13, CCR section 2423(b)(1)(B), that are in effect for the rated horsepower and the model year in which the yard truck and/or engine or power system is newly purchased, leased, or rented:
  - A. Testing conducted using the test methods set forth in subsection (n) or an alternative test method approved by the Executive Officer,
  - B. Testing conducted by the engine manufacturer for that engine;
  - C. Testing conducted by the engine manufacturer from another in-use engine that is configured and used in a substantially similar way to the engine;
  - D. Testing conducted to meet the regulatory requirements of ARB's Verification Procedure; or
  - E. Testing conducted to meet the requirements for U.S. EPA certification of systems providing remanufacture to a cleaner standard.

(B) Non-Yard Truck Cargo Handling Equipment:

1. ~~Except as provided in subsection (c), on~~ On or after January 1, 2007, no owner or operator shall operate any newly purchased, leased, or rented non-yard truck vehicles or equipment ~~unless they meet the following:~~
  - a. ~~Non-yard truck mobile cargo handling equipment that are registered as motor vehicles for on-road use unless they are~~ shall be equipped with engines that meet the on-road emission standards as specified in title 13, California Code of Regulations CCR, section 1956.8, for the model year in which the non-yard truck mobile cargo handling equipment and engines were newly purchased, leased, or rented.

- b-2. On or after January 1, 2007, no owner or operator shall operate any newly purchased, leased, or rented Non-yard truck mobile cargo handling equipment that are not registered as motor vehicles for on-road use unless shall be equipped with engines:

~~i-a. They are equipped with engines that have been certified to meet the on-road emission standards as specified in title 13, California Code of Regulations CCR, section 1956.8 for the model year in which the non-yard truck mobile cargo handling equipment and engines were newly purchased, leased, or rented; or ii. that have been certified to meet the Tier 4 off-road emission standards as specified in title 13, CCR section 2423(b)(1)(B) for the model year and rated horsepower of the newly purchased, leased, or rented non-yard truck mobile cargo handling equipment engines; or~~

~~e.3. i If an owner or operator cannot comply with one of the compliance options of a. (b) above because it is not available for the specific application and equipment type, the non-yard truck mobile cargo handling equipment shall be are equipped with engines that have been certified to meet the highest available level off-road diesel engine emission standards as specified in title 13, California Code of Regulations CCR, section 2423 for the rated horsepower and model year in which the equipment were newly purchased, leased, or rented, provided the owner or operator must install the highest level VDECS available within one year after the purchase, lease, or rental of the equipment, or within 6 months of when a VDECS becomes available, if that occurs after one year after the purchase, lease, or rental.~~

4. Alternatively, the owner or operator may elect to equip the non-yard truck mobile cargo handling equipment with engines or power systems that can be demonstrated to the Executive Officer, by using emissions reliable and repeatable test data from one of the following tests, to meet the Tier 4 off-road NOx and PM emissions standards as specified in title 13, CCR section 2423(b)(1)(B) that are in effect for the rated horsepower and model year in which the engine or power system is newly purchased, leased, or rented:

a. Testing conducted using the test methods set forth in subsection (n) or an alternative test method approved by the Executive Officer,

b. Testing conducted by the engine manufacturer for that engine;

c. Testing conducted by the engine manufacturer from another in-use engine that is configured and used in a substantially similar way to the engine;

d. Testing conducted to meet the regulatory requirements of ARB's Verification Procedure; or

e. Testing conducted to meet the requirements for U.S. EPA certification of systems providing remanufacture to a cleaner standard.

5. If non-yard truck cargo handling equipment not registered for on-road use have been purchased with engines complying with one of the options of subsection (e)(1)(B)2. above but there is a manufacturer's delay in delivery, and if no comparable compliant cargo handling equipment are

available for lease, then the owner or operator may lease comparable non-yard truck mobile cargo handling equipment that are equipped with engines that have been certified to meet the highest available level off-road diesel engine emission standards as specified in title 13, California Code of Regulations, section 2423 for the rated horsepower and model year in which the equipment are leased, provided the owner or operator provides the following to the Executive Officer:

- a. Identification of the equipment type and application, including required engine horsepower,
- b. Purchase order, letter, or other form of documentation that demonstrates that the owner/operator has entered into a contract to purchase equipment with engines certified to subsection (e)(1)(B)2. and includes the anticipated delivery date, and
- c. Documentation from representatives of equipment and/or engine manufacturers supporting claim of non-availability, including anticipated date of availability.
- d. Equipment may be leased or rented for up to a six month period or until purchased equipment are available, whichever is longer.

~~(2) In-Use Performance Standards for In-Use Yard Trucks~~

~~(A) In accordance with the schedule set forth below in paragraph (e)(2)(B), no owner or operator shall operate an in-use yard truck covered by this regulation at a port or intermodal rail yard unless the engine meets the performance standards requirements set forth below:~~

- ~~1. Is certified to 2007 or later on-road emission standards for the model year of the year purchased as specified in title 13, California Code of Regulations, section 1956.8; or~~
- ~~2. Is certified to final Tier 4 off-road emission standards for the rated horsepower; or~~
- ~~3. Is equipped with a VDECS or OEM aftertreatment controls that results in emissions less than or equal to the diesel PM and NOx emission standards for a certified final Tier 4 off-road diesel engine of the same horsepower rating; or~~
- ~~4. Is an engine or power system that can be demonstrated to the Executive Officer, through use of reliable and repeatable emissions data from one of the following tests to meet either the on-road NO<sub>x</sub> and PM emission standards as specified in title 13, CCR section 1956.8, or Tier 4 final off-road NO<sub>x</sub> and PM emissions standards as specified in title 13, CCR section 2423(b)(1)(B), that are in effect for the rated horsepower and the model year in which the yard truck and/or engine or power system is newly purchased, leased, or rented:~~

- ~~a. Testing conducted using the test methods in subsection (n) or an alternative test method approved by the Executive Officer,~~

- ~~b. Testing conducted by the engine manufacturer for that engine;~~
  - ~~c. Testing conducted by the engine manufacturer from another in-use engine that is configured and used in a substantially similar way to the engine;~~
  - ~~d. Testing conducted to meet the regulatory requirements of ARB's Verification Procedure; or~~
  - ~~e. Testing conducted to meet the requirements for U.S. EPA certification of systems providing remanufacture to a cleaner standard.~~
5. Annually per the following procedure, does not exceed the maximum opacity levels as provided in subsections (e)(2)(A)5.a. through g. below. For equipment retrofitted with a VDECS the opacity of engine-out exhaust must be measured with VDECS removed, such as when VDECS is removed for cleaning. Equipment with OEM aftertreatment controls should not remove the aftertreatment control when testing engine opacity levels.
- ~~a. The opacity shall be measured during the preconditioning and test phases with a smoke meter consistent with Society of Automotive Engineers "Surface Vehicle Recommended Practice, Snap Acceleration Smoke Test Procedure for Heavy-Duty Powered Vehicles" (SAE J1667) (February 1996), which is incorporated by reference herein, and as specified in subsection (e)(2)(A)5.g. The results shall be recorded continuously on the chart recorder during each snap-idle cycle.~~
  - ~~b. Opacity is to be measured according to the following procedure:~~
    - ~~(i.) Preparation Phase. The yard truck shall be placed at rest, with the transmission in neutral, and the yard truck properly restrained to prevent any rolling motion.~~
    - ~~(ii) Preconditioning Phase. The yard truck shall be put through a snap-idle cycle two or more times until two successive measured smoke levels are within five (5) opacity percent of each other. The smoke meter shall be rechecked prior to the preconditioning sequence to determine that its zero and full scale reading are adjusted according to specifications in section 5.4.2 of SAE J1667.~~
    - ~~(iii) Test Procedure Phase. The yard truck shall be put through the snap-idle cycle three times.~~
    - ~~(iv) The maximum instantaneous value recorded by the chart recorder shall be recorded as the maximum opacity reading.~~
    - ~~(v) The test opacity to determine the compliance with subsection (e)(2)(A)5.e. shall be the average of the two meter readings with the least difference in opacity values. If all three readings have successive equivalent differences between them, the test opacity shall be the average of the three readings.~~

- ~~c. If the opacity exceeds the following limits, the equipment is to be taken out of service and repaired. The information is to be recorded as specified subsection (i)(1)(D)9. A post-repair opacity test is to be performed to determine if the measured opacity is within the requirements in subsection (e)(2)(A)5.e. Equipment must be repaired such that it meets these opacity requirements before putting it back into service.~~
- ~~d. If the post-repair opacity measure is 5 opacity percent higher than the opacity requirement in subsection (e)(2)(A)5.e., it shall be taken out of service. It may be returned to service if it can be repaired so that the post-repair opacity is no more than 5 opacity percent greater than the requirement in subsection (e)(2)(A)5.e.~~
- ~~e. Opacity requirements:  
No yard truck shall exceed the smoke opacity levels provided below when tested in accordance with this section.~~
- ~~(i) Yard trucks powered by a non-certified diesel-fueled engine or an engine certified to a U.S. EPA PM emissions limit of greater than 0.40 grams/brake horsepower-hour (g/bhp-hr) PM shall not exceed 55 percent smoke opacity when tested in accordance with this section.~~
- ~~(ii) Yard trucks powered by a diesel-fueled engine certified to a U.S. EPA PM emissions limit greater than or equal to 0.31 but less than or equal to 0.40 g/bhp-hr PM shall not exceed 45 percent smoke opacity when tested in accordance with this section.~~
- ~~(iii) Yard trucks powered by a diesel-fueled engine certified to a U.S. EPA PM emissions limit of greater than or equal to 0.21 but less than or equal to 0.30 g/bhp-hr PM shall not exceed 35 percent smoke opacity when tested in accordance with this section.~~
- ~~(iv) Yard trucks powered by a diesel-fueled engine certified to a U.S. EPA PM emissions limit of greater than or equal to 0.11 but less than or equal to 0.20 g/bhp-hr PM shall not exceed 25 percent smoke opacity when tested in accordance with this section.~~
- ~~(v) Yard trucks powered by a diesel-fueled engine certified to a U.S. EPA PM emissions limit of greater than or equal to 0.05 but less than or equal to 0.10 g/bhp-hr PM shall not exceed 15 percent smoke opacity when tested in accordance with this section.~~
- ~~(vi) Yard trucks powered by a diesel-fueled engine certified to a U.S. EPA PM emissions limit of less than 0.05 g/bhp-hr PM shall not exceed 5 percent smoke opacity when tested in accordance with this section.~~

~~f. Individuals conducting opacity tests must have completed training conducted by the California Council on Diesel Education and Technology and obtained certification on the proper administration of the SAE J1667 test procedure.~~

~~g. The smoke opacity measurement equipment shall consist of a light extinction type smoke meter that has an optical detection unit, a control/indicator unit, and a strip chart recorder. The smoke meter shall comply with the specifications provided in section 6 of the SAE J1667 procedure and shall be calibrated according to specifications in section 7 of the SAE J1667 procedure.~~

~~h. Initial phase-in for fleets of five or more yard trucks. Fleets of five or more yard trucks shall test the yard trucks in the fleet for smoke opacity in accordance with the requirements of (e)(2)(A)5.a. through g. above pursuant to the following schedule:~~

- ~~(i) at least 25 percent of the fleet's yard trucks within 180 calendar days of the effective date for these regulations;~~
- ~~(ii) at least 50 percent of the fleet's yard trucks within 270 calendar days of the effective date for these regulations;~~
- ~~(iii) at least 75 percent of the fleet's yard trucks within 365 calendar days of the effective date for these regulations;~~
- ~~(iv) the fleet's remaining yard trucks within 455 calendar days after the effective date for these regulations.~~
- ~~(v) for fleets of one to four yard trucks shall test at least one yard truck within 180 days of the regulation becoming effective, and one yard truck in each subsequent 90 day calendar day period until all yard trucks in the fleet have been tested.~~

~~i. If it can be demonstrated that complying with the requirements of subsection (e)(2)(A)5. is not feasible due to the engine/equipment configuration then an alternative method of compliance may be used if approved by the EO. In approving a request for use of an alternative method, the Executive Officer will consider whether the owner/operator is able to demonstrate that alternative method will be able to detect increases in soot accumulation rates in the aftertreatment control device and be able to provide needed maintenance and repair.~~

~~j. Yard trucks powered by a 2009 or subsequent model year engine are exempt from subsection (e)(2)(A)5. until January of the calendar year that is four years after the model year of the engine. For example, a 2009 model year engine is exempt until January 1, 2013.~~

(B) Compliance Schedules for In-Use Yard Trucks

1. All owners or operators of three or fewer yard trucks shall comply with subsection (e)(2) according to the schedule in Table 1:

**Table 1: Compliance Schedule for In-Use Yard Truck Fleets of Three or Less<sup>1</sup>**

**Off-road without VDECS Installed by December 31, 2006**

Model Year	Compliance Deadline
Pre-2003	Dec. 31, 2007
2003	Dec. 31, 2010
2004	Dec. 31, 2011
2005	Dec. 31, 2012
2006	Dec. 31, 2013

**Off-road with VDECS Installed by December 31, 2006**

Model Year	Compliance Deadline
Pre-2003	Dec. 31, 2008
2003	Dec. 31, 2011
2004	Dec. 31, 2012
2005	Dec. 31, 2013
2006	Dec. 31, 2014

**On-road without VDECS Installed by December 31, 2006**

Model Year	Compliance Deadline
Pre-2000	Dec. 31, 2007
2000	Dec. 31, 2008
2001	Dec. 31, 2009
2002	Dec. 31, 2010
2003	Dec. 31, 2011
2004	Dec. 31, 2012
2005	Dec. 31, 2013
2006	Dec. 31, 2014

**On-road with VDECS Installed by December 31, 2006**

Model Year	Compliance Deadline
Pre-2000	Dec. 31, 2008
2000	Dec. 31, 2009
2001	Dec. 31, 2010
2002	Dec. 31, 2011
2003	Dec. 31, 2012
2004	Dec. 31, 2013
2005	Dec. 31, 2014
2006	Dec. 31, 2015

2. All owners or operators of four or more yard trucks shall comply with subsection (e)(2) according to the schedule in Table 2:

<sup>1</sup> The model year in Tables 1 and 2 refers to the newer of the engine model year or the equipment model year.

**Table 2: Compliance Schedule for In-Use Yard Truck Fleets of Four or More<sup>2</sup>**

**Off-road without VDECS Installed by December 31, 2006**

Model Year	% of Model Year	Compliance Deadline
Pre-2003	Greater of 3 or 50%	Dec. 31, 2007
	100%	Dec. 31, 2008
2003	Greater of 3 or 25%	Dec. 31, 2010
	50%	Dec. 31, 2011
	100%	Dec. 31, 2012
2004	Greater of 3 or 25%	Dec. 31, 2011
	50%	Dec. 31, 2012
	100%	Dec. 31, 2013
2005	Greater of 3 or 25%	Dec. 31, 2012
	50%	Dec. 31, 2013
	100%	Dec. 31, 2014
2006	Greater of 3 or 25%	Dec. 31, 2013
	50%	Dec. 31, 2014
	100%	Dec. 31, 2015

**Off-road with VDECS Installed by December 31, 2006**

Model Year	% of Model Year	Compliance Deadline
Pre-2003	Greater of 3 or 50%	Dec. 31, 2008
	100%	Dec. 31, 2009
2003	Greater of 3 or 25%	Dec. 31, 2011
	50%	Dec. 31, 2012
	100%	Dec. 31, 2013
2004	Greater of 3 or 25%	Dec. 31, 2012
	50%	Dec. 31, 2013
	100%	Dec. 31, 2014
2005	Greater of 3 or 25%	Dec. 31, 2013
	50%	Dec. 31, 2014
	100%	Dec. 31, 2015
2006	Greater of 3 or 25%	Dec. 31, 2014
	50%	Dec. 31, 2015
	100%	Dec. 31, 2016

**On-road without VDECS Installed by December 31, 2006**

Model Year	% of Model Year	Compliance Deadline
Pre-2000	Greater of 3 or 25%	Dec. 31, 2007
	50%	Dec. 31, 2008
	100%	Dec. 31, 2009
2000	Greater of 3 or 25%	Dec. 31, 2008
	50%	Dec. 31, 2009
	100%	Dec. 31, 2010
2001	Greater of 3 or 25%	Dec. 31, 2009
	50%	Dec. 31, 2010
	100%	Dec. 31, 2011
2002	Greater of 3 or 25%	Dec. 31, 2010
	50%	Dec. 31, 2011
	100%	Dec. 31, 2012
2003	Greater of 3 or 25%	Dec. 31, 2011
	50%	Dec. 31, 2012
	100%	Dec. 31, 2013
2004	Greater of 3 or 25%	Dec. 31, 2012
	50%	Dec. 31, 2013
	100%	Dec. 31, 2014
2005	Greater of 3 or 25%	Dec. 31, 2013
	50%	Dec. 31, 2014
	100%	Dec. 31, 2015
2006	Greater of 3 or 25%	Dec. 31, 2014
	50%	Dec. 31, 2015
	100%	Dec. 31, 2016

**On-road with VDECS Installed by December 31, 2006**

Model Year	% of Model Year	Compliance Deadline
Pre-2000	Greater of 3 or 25%	Dec. 31, 2008
	50%	Dec. 31, 2009
	100%	Dec. 31, 2010
2000	Greater of 3 or 25%	Dec. 31, 2009
	50%	Dec. 31, 2010
	100%	Dec. 31, 2011
2001	Greater of 3 or 25%	Dec. 31, 2010
	50%	Dec. 31, 2011
	100%	Dec. 31, 2012
2002	Greater of 3 or 25%	Dec. 31, 2011
	50%	Dec. 31, 2012
	100%	Dec. 31, 2013
2003	Greater of 3 or 25%	Dec. 31, 2012
	50%	Dec. 31, 2013
	100%	Dec. 31, 2014
2004	Greater of 3 or 25%	Dec. 31, 2013
	50%	Dec. 31, 2014
	100%	Dec. 31, 2015
2005	Greater of 3 or 25%	Dec. 31, 2014
	50%	Dec. 31, 2015
	100%	Dec. 31, 2016
2006	Greater of 3 or 25%	Dec. 31, 2015
	50%	Dec. 31, 2016
	100%	Dec. 31, 2017

<sup>2</sup> The model year in Tables 1 and 2 refers to the newer of the engine model year or the equipment model year.



- ~~a. for each compliance deadline, the percentage of yard trucks (25 percent, 50 percent, or 100 percent) that must meet the requirements of subsection (e)(2) is determined based on the total population of yard trucks for a specific model year or model year group (i.e., pre-2000 or pre-2003, depending upon whether the equipment is characterized as on- or off-road) that exist in the owner's or operator's yard truck fleet as of January 1 of the first compliance deadline year for that model year or model year group; and~~
- ~~b. if the number of yard trucks is not a whole number, conventional rounding practices apply (i.e., if less 0.5, round down; if 0.5 or greater, round up).~~

(3) ~~*In-Use Performance Standards for In-Use Non-Yard Truck Mobile Cargo Handling Equipment*~~

(A) In accordance with the schedule set forth in subsection (e)(3)(C), no owner or operator shall operate non-yard truck mobile cargo handling equipment covered by this regulation unless ~~they~~the equipment meet all of the following:

1. Use one of the Compliance Options for each vehicle or equipment in the active fleet as specified in ~~paragraph~~subsection (e)(3)(B) per the compliance schedule listed in Table 3 in subsection (e)(3)(C); and
2. Adherence to any special ~~circumstances~~requirements that may apply when a diesel emission control strategy is used as a Compliance Option as specified in subsection (g); and
3. Annually per the following procedure, do not exceed the maximum opacity levels as provided in subsections (e)(3)(A)3.a. through g. below. For equipment retrofitted with a VDECS the opacity of engine-out exhaust must be measured with VDECS removed, such as when VDECS is removed for cleaning. Equipment with OEM aftertreatment controls should not remove the aftertreatment control when testing engine opacity levels,
  - a. The opacity shall be measured during the preconditioning and test phases with a smoke meter consistent with Society of Automotive Engineers "Surface Vehicle Recommended Practice, Snap Acceleration Smoke Test Procedure for Heavy-Duty Powered Vehicles" (SAE J1667). (February 1996), which is incorporated by reference herein, and as specified in subsection (e)(3)(A)3.g. The results shall be recorded continuously on the chart recorder during each snap-idle cycle.
  - b. Opacity is to be measured according to the following procedure:

- (i) Preparation Phase. The vehicle shall be placed at rest, with the transmission in neutral, and the vehicle properly restrained to prevent any rolling motion.
  - (ii) Preconditioning Phase. The vehicle shall be put through a snap-idle cycle two or more times until two successive measured smoke levels are within five (5) opacity percent of each other. The smoke meter shall be rechecked prior to the preconditioning sequence to determine that its zero and full scale reading are adjusted according to specifications in section 5.4.2 of SAE J1667.
  - (iii) Test Procedure Phase. The vehicle shall be put through the snap-idle cycle three times.
  - (iv) The maximum instantaneous value recorded by the chart recorder shall be recorded as the maximum opacity reading.
  - (v) The test opacity to determine the compliance with subsection (e)(3)(A)3.e. shall be the average of the two meter readings with the least difference in opacity values. If all three readings have successive equivalent differences between them, the test opacity shall be the average of the three readings.
- c. If the opacity exceeds the requirements established in section (e)(3)(A)3.e, the equipment is to be taken out of service and repaired. The information is to be recorded as specified subsection (i)(1)(D)9. A post-repair opacity test is to be performed to determine if the measured opacity is within the requirements in subsection (e)(3)(A)3.e. Equipment must be repaired such that it meets these opacity requirements before putting it back into service.
- d. If the post-repair opacity measure is greater than 5 percent higher than the opacity requirement in subsection (e)(3)(A)3.e., it shall be taken out of service. It may be returned to service if it can be repaired so that the post-repair opacity is no more than 5 percent greater than the requirement in subsection (e)(3)(A)3.e.
- e. Opacity requirements:
- (i) No cargo handling equipment shall exceed the smoke opacity levels provided below when tested in accordance with this section. Non-yard truck cargo handling equipment powered by a non-certified diesel-fueled engine or an engine certified to a U.S. EPA PM emissions limit of greater than 0.40 g/bhp-hr PM shall not exceed 55 percent smoke opacity when tested in accordance with this section.
  - (ii) Non-yard truck cargo handling equipment powered by a diesel-fueled engine certified to a U.S. EPA PM emissions limit of greater than or equal to 0.31 but less than or equal to 0.40

- g/bhp-hr PM shall not exceed 45 percent smoke opacity when tested in accordance with this section.
- (iii) Non-yard truck cargo handling equipment powered by a diesel-fueled engine certified to a U.S. EPA PM emissions limit of greater than or equal to 0.21 but less than or equal to 0.30 g/bhp-hr PM shall not exceed 35 percent smoke opacity when tested in accordance with this section.
  - (iv) Non-yard truck cargo handling equipment powered by a diesel-fueled engine certified to a U.S. EPA PM emissions limit of greater than or equal to 0.11 but less than or equal to 0.20 g/bhp-hr PM shall not exceed 25 percent smoke opacity when tested in accordance with this section.
  - (v) Non-yard truck cargo handling equipment powered by a diesel-fueled engine certified to a U.S. EPA PM emissions limit of greater than or equal to 0.05 but less than or equal to 0.10 g/bhp-hr PM shall not exceed 15 percent smoke opacity when tested in accordance with this section.
  - (vi) Non-yard truck cargo handling equipment powered by a diesel-fueled engine certified to a U.S. EPA PM emissions limit of less than 0.05 g/bhp-hr PM shall not exceed 5 percent smoke opacity when tested in accordance with this section.
- f. Individuals conducting opacity tests must have completed training conducted by the California Council on Diesel Education and Technology and obtained certification on the proper administration of the SAE J1667 test procedure.
- g. The smoke opacity measurement equipment shall consist of a light extinction type smokemeter that has an optical detection unit, a control/indicator unit, and a strip chart recorder. The smokemeter shall comply with the specifications provided in section 6 of the SAE J1667 procedure and shall be calibrated according to specifications in section 7 of the SAE J1667 procedure.
- h. Initial phase-in for fleets of five or more. Fleets of five or more non-yard truck equipment shall test the non-yard truck equipment for smoke opacity in accordance with the requirements of (e)(3)(A)3.a. through g. above pursuant to the following schedule:
- (i) at least 25 percent of the fleet's non-yard truck equipment within 180 calendar days of the effective date for these regulations;
  - (ii) at least 50 percent of the fleet's non-yard truck equipment within 270 calendar days of the effective date for these regulations;
  - (iii) at least 75 percent of the fleet's non-yard truck equipment within 365 calendar days of the effective date for these regulations;

- (iv) the fleet's remaining non-yard truck equipment within 455 calendar days after the effective date for these regulations.
- (v) for fleets of one to four non-yard truck equipment, shall test at least one piece of non-yard truck equipment within initial 180 days of the regulation becoming effective, and one piece of non-yard truck equipment in each subsequent 90 day calendar day period, until all non-yard truck equipment in the fleet have been tested.

- i. engines that operate at constant speed and variable load may comply with the requirements of subsection (e)(3)(A)3. using an alternative method as approved by the EO.
- j. If it can be demonstrated that complying with the requirements of subsection (e)(3)(A)3. is not feasible due to the engine/equipment configuration then an alternative method of compliance may be used if approved by the EO. In approving a request for use of an alternative method, the Executive Officer will consider whether the owner/operator is able to demonstrate that the alternative method will be able to detect increases in soot accumulation rates in the aftertreatment control device and be able to provide needed maintenance and repair.
- k. Cargo handling equipment powered by a 2009 or subsequent model year engine is exempt from subsection (e)(3)(A)3. until January of the calendar year that is four years after the model year of the engine. For example, a 2009 model year engine is exempt until January 1, 2013.

~~34~~ Maintenance of Maintain all records as specified in subsection (i); and

~~45~~ Continuous Compliance. An owner or operator is required to keep all mobile cargo handling equipment operating in California in compliance with the requirements of this regulation at all times.

(B) Compliance Option. Each owner or operator shall use one of the following Compliance Options on each engine or vehicle in his fleet as required by the implementation schedule listed in Table 3 in subsection (e)(3)(C):

1. Basic Container Handling Equipment:

- a. An engine or power system, including a diesel, alternative fuel, or heavy-duty pilot ignition engine, certified to either the 2007 or later model year on-road emission standards for the year manufactured as specified in title 13, CCR, section 1956.8, or the Tier 4 off-road emission standards as specified in title 13, CCR section

2423(b)(1)(B) for the rated horsepower and model year of the year manufactured; ~~or~~

- b. An engine or power system certified to the on-road emission standards for the year manufactured as specified in title 13, CCR, section 1956.8, or certified to the Tier 2, ~~or Tier 3,~~ or Tier 4 Alternate PM off-road diesel engine standards, as specified in title 13, CCR section 2423(b)(2)(B), for the rated horsepower and model year of the year manufactured, and used in conjunction with the highest level VDECS that is verified for a specific engine family and model year. If the highest level VDECS used is Level 1, the engine or power system must meet the certified Tier 4 off-road emission standards as specified in title 13, CCR section 2423(b)(1)(B), or be equipped with a Level 3 VDECS by December 31, 2015; ~~or~~
- c. An engine or power system either certified to the Tier 1 off-road diesel engine standard, as specified in title 13, CCR, section 2423, or manufactured prior to implementation of the Tier 1 off-road diesel engine standard, both of which must be used in conjunction with the highest level VDECS that is verified for the specific engine family and model year. If the highest level VDECS used is Level 1 or Level 2, the engine or power system must meet the certified Tier 4 off-road emission standards as specified in title 13, CCR section 2423(b)(1)(B) or be equipped with a Level 3 VDECS by December 31, 2015; ~~or~~
- d. An engine or power system that can be demonstrated to the Executive Officer, through use of reliable and repeatable emissions data from one of the following tests to meet the Tier 4 off-road NOx and PM emissions standards as specified in title 13, CCR section 2423(b)(1)(B) that were in effect for the rated horsepower and the model year in which the engine or power system is newly purchased, leased, or rented:
  - (i) Testing conducted using the test methods in subsection (n) or an alternative test method approved by the Executive Officer,
  - (ii) Testing conducted by the engine manufacturer for that engine;
  - (iii) Testing conducted by the engine manufacturer from another in-use engine that is configured and used in a substantially similar way to the engine;
  - (iv) Testing conducted to meet the regulatory requirements of ARB's Verification Procedure; or
  - (v) Testing conducted to meet the requirements for U.S. EPA certification of systems providing remanufacture to a cleaner standard.

2. Bulk Cargo Handling Equipment:

- a. An engine or power system, including a diesel, alternative fuel, or heavy-duty pilot ignition engine, certified to either the 2007 or later model year on-road emission standards for the year manufactured as specified in title 13, CCR, section 1956.8, or the Tier 4 off-road emission standards as specified in title 13, CCR section 2423(b)(1)(B) for the rated horsepower and model year of the year manufactured; ~~or~~
- b. An engine or power system certified to the on-road emission standards for the year manufactured as specified in title 13, CCR, section 1956.8, or certified to the Tier 2, ~~or Tier 3,~~ or Tier 4 Alternate PM off-road diesel engine standards, as specified in title 13, CCR section 2423(b)(2)(B), for the rated horsepower and model year of the year manufactured, and used in conjunction with the highest level VDECS that is verified for a specific engine family and model year. If the highest level VDECS used is Level 1, the engine or power system must meet the certified Tier 4 off-road emission standards as specified in title 13, CCR section 2423(b)(1)(B), or be equipped with a Level 3 VDECS by December 31, 2015; ~~or~~
- c. An engine or power system either certified to the Tier 1 off-road diesel engine standard, as specified in title 13, CCR, section 2423, or manufactured prior to implementation of the Tier 1 off-road diesel engine standard, both of which must be used in conjunction with the highest level VDECS that is verified for the specific engine family and model year. If the highest level VDECS used is Level 1, the engine or power system must meet the certified Tier 4 off-road emission standards as specified in title 13, CCR section 2423(b)(1)(B) or be equipped with a Level 3 VDECS by December 31, 2015; or.
- d. An engine or power system that can be demonstrated to the Executive Officer, through use of reliable and repeatable emissions data from one of the following tests - to meet the Tier 4 off-road NO<sub>x</sub> and PM emissions standards as specified in title 13, CCR section 2423(b)(1)(B) that are in effect for the rated horsepower and model year in which the engine or power system is newly purchased, leased or rented:
  - (i) Testing conducted using the test methods in subsection (m) or an alternative test method approved by the Executive Officer,
  - (ii) Testing conducted by the engine manufacturer for that engine;
  - (iii) Testing conducted by the engine manufacturer from another in-use engine that is configured and used in a substantially similar way to the engine;

- (iv) Testing conducted to meet the regulatory requirements of ARB's Verification Procedure; or
- (v) Testing conducted to meet the requirements for U.S. EPA certification of systems providing remanufacture to a cleaner standard.

3. Rubber-Tired Gantry Cranes:

- a. An engine or power system, including a diesel, alternative fuel, or heavy-duty pilot ignition engine, certified to either the 2007 or later model year on-road emission standards for the year manufactured as specified in title 13, CCR, section 1956.8, or the Tier 4 off-road emission standards as specified in title 13, CCR section 2423(b)(1)(B) for the rated horsepower and model year of the year manufactured; or
- b. An engine or power system certified to the on-road emission standards for the year manufactured as specified in title 13, CCR, section 1956.8, or certified to the Tier 2, ~~or~~ Tier 3, or Tier 4 Alternate PM off-road diesel engine standards, as specified in title 13, CCR section 2423(b)(2)(B), for the rated horsepower and model year of the year manufactured, and used in conjunction with the highest level VDECS that is verified for a specific engine family and model year; or
- c. An engine or power system either certified to the Tier 1 off-road diesel engine standard, as specified in title 13, CCR, section 2423, or manufactured prior to implementation of the Tier 1 off-road diesel engine standard, both of which must be used in conjunction with the highest level VDECS that is verified for the specific engine family and model year. If the highest level VDECS used is Level 1 or Level 2, the engine or power system must meet the certified Tier 4 off-road emission standards as specified in title 13, CCR section 2423(b)(1)(B) or be equipped with a Level 3 VDECS by the latter of model year plus 12 years or December 31, 2015; or
- d. An engine or power system that can be demonstrated to the Executive Officer, through use of reliable and repeatable emissions data from one of the following tests to meet the Tier 4 off-road NOx and PM emissions standards as specified in title 13, CCR section 2423(b)(1)(B) that are in effect for the rated horsepower and model year of the year in which the engine or power system is newly purchased, leased, or rented:
  - (i) Testing conducted using the test methods in subsection (m) or an alternative test method approved by the Executive Officer,
  - (ii) Testing conducted by the engine manufacturer for that engine;

- (iii) Testing conducted by the engine manufacturer from another in-use engine that is configured and used in a substantially similar way to the engine;
- (iv) Testing conducted to meet the regulatory requirements of ARB's Verification Procedure; or
- (v) Testing conducted to meet the requirements for U.S. EPA certification of systems providing remanufacture to a cleaner standard.

(C) Compliance Schedule for Non-Yard Truck Mobile Cargo Handling Equipment

1. All owners or operators of non-yard truck mobile cargo handling equipment shall comply with subsection (e)(3) according to the schedule in Table 3:

**Table 3: Compliance Option Compliance Schedule for Non-Yard Truck In-Use Mobile Cargo Handling Equipment**

Engine Model Years	Compliance Date <sup>43</sup>				
	Non-Yard Truck Fleets of 3 or Fewer	Non-Yard Truck Fleets of 4 or More			
		First 3 or 25% (whichever is greater)	50%	75%	100%
pre-1988	2007	2007	2008	2009	2010
1988-1995	2008	2008	2009	2010	2011
1996-2002	2009	2009	2010	2011	2012
2003-2006	2010	2010	2011	2012	2013

- a. for each compliance deadline, the percentage of non-yard truck equipment (25 percent, 50 percent, or 100 percent) that must meet the requirements of subsection (e)(3) is determined based on the total population of non-yard truck equipment for a specific model year group (i.e., pre-1988) that exist in the owner's or operator's non-yard truck fleet as of January 1 of the first compliance deadline year for that model year group; and
- b. if the number of non-yard truck equipment is not a whole number, conventional rounding practices apply (i.e., if less 0.5, round down; if 0.5 or greater, round up).
- c. the owner or operator may modify the engine compliance schedule set forth in Table 3 to allow older model-year engines to be brought into compliance prior to newer model year engines so long as the

<sup>43</sup> Compliance date refers to December 31<sup>st</sup> of the year indicated.



total number of engines brought into compliance each year is the same as that set forth in Table 3.

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(5) Replacement Engines for In-Use Yard Truck and Non-Yard Truck Equipment

- (A) Except as provided in section (e)(5)(B) below, an in-use yard truck or non-yard truck equipment that is repowered with a replacement engine is considered to be newly purchased, leased, or rented equipment and must meet the requirements of section (e)(1), taking into consideration the physical and performance characteristics of the vehicle or equipment.
- (B) A replacement engine for an engine that has failed during its warranty period and replaced per the warranty provisions may meet the emission standards of the warrantied engine that is being replaced.

(f) **Compliance Extensions**

An owner or operator may be granted an extension to a compliance deadline specified in subsection (e) for one of the following reasons. If a compliance extension is granted by the Executive Officer, the owner or operator shall be deemed to be in compliance provided all of the conditions of as specified by the Executive Officer's authorization are met. Unless specifically stated, compliance extensions may not be combined or used consecutively, and only one compliance extension type may be granted per engine or vehicle.

- (1) *Compliance Extension for an Engine Near Retirement.* If an owner or operator has applied a Compliance Option to its fleet pursuant to the schedule set forth in Table 3 of subsection (e), and the next engine subject to the Compliance Options is scheduled to be retired from the active fleet within one year of the applicable compliance deadline, the owner or operator does not need to apply a Compliance Option to that engine for up to one year, provided the owner or operator maintains appropriate records and documentation, as specified in subparagraph (i)(1)(F), regarding the assigned retirement date and the engine is retired on or before the assigned date. If upon inspection, ARB finds the aforementioned conditions to have not been met, the engine would be in noncompliance from the date that compliance would otherwise have been required under the schedule set forth in Table 3 of subsection (e).
- (2) *Compliance Extension Based on No Verified Diesel Emission Control Strategy for Non-Yard Truck Mobile Cargo Handling Equipment.* Subject to the conditions set below, if the Executive Officer has not verified a diesel emission control strategy or one is not commercially available for a particular engine and equipment combination, an annual extension in compliance, up to a maximum of ~~two~~ four years, may be granted by the Executive Officer. Owners or operators who apply for an additional compliance extension beyond the first two annual

extensions are required to use electric or hybrid cargo handling equipment as specified in subsection (f)(2)(D), if such equipment is available and operationally feasible for the intended use. The additional compliance extension beyond the first two annual extensions will be a two-year extension. The Executive Officer shall grant the extension upon determining that the following circumstances have been met:

(A) The owner or operator has applied to the Executive Officer for a compliance extension for an engine ~~six months~~ 60 days prior to each compliance deadline specified in subsection (e)(3)(C) and provided sufficient documentation to meet the conditions set forth below. The owner or operator may, ~~six months~~ 60 days prior to the expiration of the extension, apply for an additional one-year extension. In such a case, the owner or operator shall once again be required to show to the Executive Officer's satisfaction that the conditions set forth below have been met:

1. Establish that it has applied a Compliance Option specified in subsection (e)(3) to all applicable engines in its fleet for which a Compliance Option is feasible pursuant to the schedule set forth in Table 3 of subsection (e),
2. Identify each engine for which an extension is requested by engine serial number; engine manufacturer, model year, family, and series; and type of mobile cargo handling equipment, for which a specific diesel emission control strategy would jeopardize the original engine warranty and a statement from the engine manufacturer or authorized dealer stating the original engine warranty would be jeopardized; or
3. Identify each engine and equipment or vehicle combination for which an extension is requested by engine serial number; engine manufacturer, model year, family, and series; and type of mobile cargo handling equipment, for which no diesel emission control strategy is commercially available and a list of manufacturers that have been contacted with their responses to a request to purchase, and
4. Describe the reason(s) for the request for a compliance extension for each engine or engine and equipment or vehicle combination. Reasons may include that the application of VDECS precludes safe operation.

(B) If, at any time during the first or second annual compliance extension, a safe and feasible VDECS becomes commercially available for the engine, the owner or operator must install the VDECS, or otherwise comply with subsection (e)(3), within six months of the ARB notification of the verification of the VDEC.

(C) An engine used in CHE equipment shall not be eligible for more than two annual extensions if excessive engine exhaust opacity is the only reason a VDECS cannot be installed on an engine or engine and equipment combination (e.g., a VDECS is available for an engine with lower engine

exhaust opacity that is of the same model year, size, and equipment or vehicle combination).

- (D) The Executive Officer shall approve a two-year compliance extension beyond the two initial annual compliance extensions provided that, in addition to fulfilling the requirements provided in subsection (f)(2)(A), the owner or operator agrees to either:
1. replace a yard truck or non-yard truck piece of equipment, other than the equipment for which the extension is granted, with a piece of either electric or hybrid equipment within six months of the date the extension begins, or
  2. replace the engine and equipment for which an extension has been granted with either electric or hybrid equipment at the end of the final extension period. If the owner or operator chooses this option and it can be demonstrated to and approved by the Executive Officer at the end of the additional extension period that electric or hybrid equipment is not commercially available, technically feasible giving consideration to cost, or operationally feasible for the intended use for the application for which the extension is granted, the owner or operator must:
    - a. retire or replace the equipment for which the extension is granted with compliant diesel equipment, or otherwise bring the equipment into compliance with subsection (e)(3) and, in addition,
    - b. must replace an in-use yard truck or non-yard truck equipment, other than the equipment for which the extension was granted, that has not yet been brought into compliance with subsection (e), with either electric or hybrid equipment, unless it can be demonstrated to and approved by the Executive Officer that such equipment is not commercially available, technically feasible giving consideration to cost or operationally feasible.
  3. If during the extension period, a safe and feasible VDECS becomes available and the owner or operator has chosen the option provided in subsection (f)(2)(D)2. then,
    - a. the owner or operator can be excused from its agreed to performance under section (f)(2)(D)2. if the owner or operator can demonstrate to and obtain approval by the Executive Officer that electric or hybrid equipment is not commercially available at that time, technically feasible giving consideration to cost, or operationally feasible for replacement of either the equipment for which the extension has been granted or another in-use yard truck or piece of non-yard truck equipment, and the owner or operator installs the VDECS on the equipment for which the extension has been granted, or otherwise comply with subsection (e)(3).

within six months of the ARB notification of the verification of the VDECS.

b. A VDECS is not required to be installed if:

- (i) electric or hybrid equipment is available for the equipment for which the extension is granted and the equipment will be replaced with electric or hybrid equipment at the end of the final extension period; or
- (ii) electric or hybrid equipment is available for another piece of equipment and the equipment will be replaced with electric or hybrid equipment at the end of the final extension period and the owner or operator complies with subsection (f)(2)(D)2.a.

4. If the owner or operator chooses to replace a piece of equipment other than the equipment for which the extension is granted with electric or hybrid equipment, the owner or operator must obtain Executive Officer approval. The Executive Officer may disapprove the action based on an evaluation that the emissions from the equipment to be replaced with electric or hybrid are not substantially the same or greater than the emissions from the equipment for which the extension is provided considering the following information:

- a. annual hours of operation of the two pieces of equipment,
- b. maximum rated horsepower of the two pieces of equipment, and
- c. a comparison of engine emissions levels of the replacement electric or hybrid equipment and compliant diesel equipment.

5. An owner or operator who fails to meet the terms of the compliance extension shall be subject to penalties for not being in compliance with the regulation. The period of non-compliance shall be calculated starting from the date the equipment would have been required to be in compliance if the extension had not been granted.

(3) *Use of Experimental Diesel Particulate Matter Emission Control Strategies for Non-Yard Truck Mobile Cargo Handling Equipment.* An annual compliance extension may be granted by the Executive Officer for the use of an experimental, or non-verified, diesel PM emission control strategy if a VDECS is not available, ~~or~~ if the owner or operator can demonstrate that an existing VDECS is not safe or feasible for their equipment or application, or use of the non-verified control strategy is needed to generate data to support verification of the control strategy. The owner or operator shall keep documentation of this use in records as specified in paragraph (i)(1)(G). Each mobile cargo handling equipment engine will be considered to be in compliance for the duration of the experiment, until the extension expires. The owner or operator must bring the mobile cargo handling equipment into compliance prior to the end of the annual

compliance extension. The Executive Officer may grant the extension upon determining that the owner or operator has met the conditions specified below:

- (A) The engine owner or operator has applied to the Executive Officer for a compliance extension ~~six months~~ 60 days prior to each compliance deadline, including annually if the owner or operator wishes to continue with the experimental controls. The application must include emissions data demonstrating the experimental control achieves at least a Level 1 diesel PM emission reduction through:
1. off-road engine certification test data for the cargo handling equipment engine;
  2. engine manufacturer test data;
  3. emissions test data from a similar engine;
  4. emissions test data used in meeting the requirements of the Verification Procedure for the emission control strategy implemented; or
  5. emissions testing conducted under the following conditions:
    - a. baseline testing may be conducted with the emission control strategy in place, provided the test sample is taken upstream of the emission control strategy;
    - b. control strategy testing shall be performed on the cargo handling equipment engine with full implementation of the emission control strategy;
    - c. the percent change from baseline shall be calculated as the baseline emissions minus control strategy emissions, with the difference being divided by the baseline emissions and the result expressed as a percentage;
    - d. the same test method shall be used for determining both baseline emissions and control strategy emissions; and
    - e. diesel PM, NO<sub>x</sub>, CO, HC, NMHC, and CO<sub>2</sub> testing shall be done in accordance with one of the following methods:
      - i. ~~(i)~~ International Organization for Standardization (ISO) 8178 Test procedures: ISO 8178-1: 1996(E) ("ISO 8178 Part 1"); ISO 8178-2: 1996(E) ("ISO 8178 Part 2"); and ISO 8178-4: 1996(E) ("ISO 8178 Part 4"), which are incorporated herein by reference; or
      - ii. ~~(ii)~~ Title 13, California Code of Regulations, section 2423, "Exhaust Emission Standards and Test Procedures – Off-Road Compression Ignition Engines," which is incorporated herein by reference.
- (B) The application for extension must include the following: explanation demonstrating that the highest level VDECS are not feasible or safe for the specific equipment or application (if applicable), identification of each engine (serial number, engine manufacturer, model year, family, and series), description of the emission control system to be demonstrated, emissions data required in (A) above, ~~the~~ contact information for the emission control

system supplier, and a letter of intent from the supplier stating that they intend to apply for verification of the experimental system;

- (C) The owner or operator must bring the mobile cargo handling equipment into compliance prior to the end of the compliance extension period;
- (D) If VDECS are available, or become available during the extension period, and are determined to be feasible or safe for the specific engine and equipment type, the owner or operator must demonstrate that the experimental control achieves equivalent to or better than a Level 1 VDECS; and
- (E) No experimental diesel particulate matter emission control strategy may be used on mobile cargo handling equipment after December 31, 2015.

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(6) Compliance Extension for Non-yard Truck Equipment Operated Less Than 200 Hours Annually.

- (A) The Executive Officer shall grant an annual compliance extension up to a maximum of two years for engines operated less than 200 hours annually upon determining that the owner or operator has met the following conditions:
  - 1. Complied with subsection(e)(3) for all applicable engines in its fleet for which compliance options are feasible pursuant to the schedule set forth in Table 3 of subsection (e).
  - 2. Installed a non-resettable hour meter on each engine for which the compliance extension is requested
  - 3. Submitted an application that may cover one or more engines to the Executive Officer for a compliance extension at least 60 days prior to each compliance deadline specified in subsection (e)(3)(C) ;
  - 4. Identified in the application the engine manufacturer, serial number model year, and engine family and series of each engine for which an extension is requested;
  - 5. Provided documentation, either from non-resettable hour meters, fuel records, or some other credible method for tracking engine operation; that the engines covered by the application have not been operated more than 200 hours in the preceding year.
- (B) The owner or operator shall maintain records of annual use for each engine granted a compliance extension under this subsection for the duration of the extension in the vehicle associated with that engine.

- (C) The owner or operator shall report annually the annual hours of operation for each engine granted a compliance extension under this subsection for the duration of the extension.
- (D) The Executive Officer may elect not to grant a low-use extension for more than two engines in a single fleet or for more than two percent of a fleet, whichever is greater. The Executive Officer's election to limit the number of engines granted a low-use extension will consider the impact on public health based on an evaluation of the following information:
  - 1. number of equipment granted a low-use extension
  - 2. hours of operation of the equipment
  - 3. estimated engine emissions levels
  - 4. proximity of the equipment to off-site residences
- (E) If the engine is operated annually for more than 200 hours, the extension is automatically revoked and the engine must cease operation until the owner or operator brings the engine into compliance with subsection (e)(3).

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**(h) Alternative Compliance Plan for ~~Non-Yard Truck~~ Cargo Handling Equipment**

**(1) Requirements**

- (A) The purpose of this subsection is to allow any person ("person" or "applicant") subject to this regulation the option of complying with the requirements of this subsection (~~h k~~) in lieu of the requirements of subsections (e)(2) and (e)(3). Under this subsection (~~h k~~), alternative emission control strategies (AECS) can be implemented as an alternative compliance plan (ACP), provided they result in no greater emissions, expressed in pounds, of diesel PM and NOx from the yard truck and non-yard truck cargo handling equipment combined, over the applicable calendar year, relative to the combined emissions that would have occurred under subsections and (e)(2) and (e)(3).
- (B) An applicant wishing to participate in an ACP may include one or more ~~non-yard truck~~ cargo handling equipment in the ACP, but the applicant shall only include equipment that the person owns or operates under their direct control at the same port or intermodal rail yard.
- (C) No cargo handling equipment shall be included in more than one ACP.
- (D) AECS may include, but are not limited to:

1. equipment engine modifications,
  2. exhaust treatment control,
  3. engine repower,
  4. equipment replacement, and
  5. use of alternative fuels or fuel additives,
  6. hybrid technology, and
  7. electric equipment.
- (E) The ACP application demonstrating compliance with this subsection shall contain, at a minimum, the following information:
1. the company name, address, and contact information;
  2. the equipment subject to the ACP, including equipment and engine make, model, and serial numbers, and other information that uniquely identify the equipment;
  3. documentation, calculations, emissions test data, or other information that establishes the diesel PM and NOx reductions, expressed in pounds, from yard truck and non-yard truck cargo handling equipment combined will be equivalent to or greater than the combined emission reductions that would have been achieved upon compliance with subsections (e)(2) and (e)(3);
  4. the proposed recordkeeping, reporting, monitoring, and testing procedures that the applicant plans to use to demonstrate continued compliance with the ACP.
- (F) Emission reduction calculations demonstrating equivalence with the requirements of subsections (e)(2) and (e)(3) shall only include diesel PM and NOx emissions from ~~non-yard truck cargo handling equipment~~ that operate at the California port or intermodal rail yard to which the ACP applies.
- (G) Any owner or operator subject to an approved ACP shall maintain operating records in a manner and form as specified by the Executive Officer in the approved ACP. Required records may include, but are not limited to, information on hours of operation, fuel usage, maintenance procedures, and emissions test results. Such records and reports shall be retained for a period of not less than three (3) years and shall be submitted to the Executive Officer in the manner specified in the approved ACP and upon request by the Executive Officer.
- (H) Emission reductions included in an ACP shall not include reductions that are otherwise required by any local, State, or federal rule, regulation, or statute, or that are achieved or estimated from equipment not located at the specific port or intermodal rail yard to which the ACP applies.



- (l) No person may operate any ~~non-yard truck~~ cargo handling equipment under an ACP unless the applicant has first been notified in writing by the Executive Officer that the ACP application has been approved. Prior to such approval, applicants shall comply with the provisions of this section, including the requirements in subsection (e)(3).

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### **(i) Recordkeeping Requirements**

Beginning December 31, 2006, an owner or operator of mobile cargo handling equipment shall maintain the following records or copies of records at port and intermodal rail yard facilities where applicable. The owner or operator shall provide the following records for inspection to an agent or employee of ARB upon request, including copies of these records at the department's expense, for all mobile cargo handling equipment subject to compliance with the regulation:

- (1) *Records Kept at Terminal.* The owner or operator shall keep the following records accessible either in hard copy format or computer records at the terminal where the mobile cargo handling equipment normally resides:
  - (A) Owner or Operator Contact Information
    - 1. Company name
    - 2. Contact name, phone number, address, e-mail address
    - 3. Address of equipment
  - (B) Equipment and Engine Information
    - 1. Make of equipment and engine
    - 2. Model of equipment and engine
    - 3. Engine family (if applicable)
    - 4. Engine serial number
    - 5. Year of manufacture of equipment and engine (if unable to determine, approximate age)
    - 6. Rated brake horsepower
    - 7. Control equipment (if applicable)
      - a. Type of diesel emission control strategy
      - b. Serial number of installed diesel emission control strategy
      - c. Manufacturer of installed diesel emission control strategy
      - d. Model of installed diesel emission control strategy
      - e. Installation date of installed diesel emission control strategy
      - f. Level of control (1, 2, or 3); if using a Level 1 or 2, include the reason for the choice
      - g. Documentation for Minimum Use Requirement Compliance Extension pursuant to paragraph (f)(5).

(C) Records of maintenance for each installed diesel emission control strategy

(D) Records of opacity testing results

1. Brand name and model of the opacity meter.
2. Dates of last calibration of the opacity meter and chart recorder.
3. Name of the smoke meter operator who conducted the test.
4. Name and address of the contracted smoke test facility or vehicle repair facility that conducted the test (if applicable).
5. Applicability of smoke opacity standard for the tested vehicle.
6. Vehicle identification number, vehicle's engine model, engine make, engine model year, and test date.
7. Initial smoke test opacity levels (for three successive test readings).
8. Indication of whether the vehicle passed or failed the initial smoke test.
9. For vehicles that have failed the smoke test and been repaired, the following information:
  - a. name of the mechanic
  - b. date of the repair
  - c. a statement identifying the nature of the repairs made
  - d. an itemized list of parts used in the repair
10. Post-repair test date.
11. Post-repair smoke test opacity levels (for three successive test readings).
12. Indication of whether the vehicle passed or failed the post-repair smoke test.

(DE) Fuel(s) Used

1. CARB Diesel
2. Alternative diesel fuel (specify)
3. Alternative fuel (specify)
4. Combination (dual fuel) (specify)
5. Other (specify)

(EF) Operation Information

1. Describe general use of engine
2. Typical load (percent of maximum bhp rating)
3. Typical annual hours of operation
4. If seasonal, months of year operated and typical hours per month operated

(FG) For each engine for which an owner or operator is claiming an exemption pursuant to paragraph (f)(1), the retirement date correlated to the information in paragraph (i)(1) above

(GH) For each engine for which an owner or operator is claiming an extension pursuant to paragraph (f)(3), the records of the test plan, including start and end dates of the experiment; diesel particulate matter emission

control strategy manufacturer name and contact information (representative, address, and phone number); name and type of experimental diesel particulate matter emission control strategy; and targeted data to be generated by experiment, correlated to the information in paragraph (i)(1) above

(H) For each engine for which an owner or operator is claiming an extension pursuant to paragraph (f)(4), the purchase order or signed contract between the owner or operator and seller of the new equipment that has been purchased in order to comply with subsection (e)

(I) A statement of compliance, prepared beginning January 1, 2007, and renewed each January 1 thereafter until January 1, 2016, certifying that the owner's or operator's engines are in compliance as required, including the following:

1. "The mobile cargo handling equipment at terminal (insert terminal name and name of port or intermodal rail yard) are in compliance with title 13, California Code of Regulations, section 2479;" and
2. The owner's or operator's name, business address, business telephone; and
3. The signature of the owner or operator or its agent and date signed.

(2) *Records Kept in Mobile Cargo Handling Equipment.* For each mobile cargo handling equipment, the owner or operator shall keep the following information affixed to the driver's side door jamb, or another readily accessible location known by the owner or operator of each mobile cargo handling equipment, in the form of a legible and durable label or in an alternative form approved by the Executive Officer or designee that is immediately accessible at the time of inspection by the enforcement agency:

- (A) For each installed diesel emission control strategy, label information as specified in title 13, CCR, section 2706(g), and the installation date; or
- (B) For each mobile cargo handling equipment that has installed a certified on-road or off-road engine in order to comply with subsection (e), the engine make, model, and installation date; or
- (C) Engine model year and planned compliance date; or
- (D) Engine model year and retirement date for an engine for which an owner or operator is claiming an extension pursuant to paragraph (f)(1); or
- (E) Engine model year and beginning and end date for which an owner or operator is claiming an extension pursuant to paragraph (f)(2); or
- (F) Engine model year and beginning and ending date of the test plan for an engine for which an owner or operator is claiming an extension pursuant to paragraph (f)(3); or

- (G) Engine model year and date of purchase of replacement engine or equipment for which an owner or operator is claiming an extension pursuant to paragraph (f)(4); or
- (H) Engine model year, date of installation of VDECS, and supporting documentation for public funding program, for the engine and equipment for which an owner or operator is claiming an extension pursuant to paragraph (f)(5).
- (I) Documentation, either from non-resettable hour meters, fuel records, or some other credible method for tracking engine operating hours approved by the Executive Officer, that the engine has not been operated more than 200 hours in the preceding year.

- (3) Each owner or operator shall maintain these records for each mobile cargo handling equipment until it is sold outside of the State of California or is no longer used at a port or intermodal rail yard in the State of California. If ownership is transferred, the seller shall convey the records to the buyer.

**(j) Reporting Requirements**

- (1) *Compliance Plan.* By January 31, 2007, each owner or operator of in-use mobile cargo handling equipment subject to the requirements of subsection (e) shall provide the following information to the Executive Officer:

- (A) Information listed in paragraph (i)(1), and
- (B) An identification of the planned control strategy (Compliance Plan) for each mobile cargo handling equipment listed in paragraph (i)(1) that, when implemented, will result in compliance with subsection (e). If applicable, the information should include the Executive Order number issued by the Executive Officer for a VDECS that has been approved by the Executive Officer through the Verification Procedure. The Compliance Plan is not binding and can be changed by the owner or operator prior to the required compliance date(s).

- (2) *Demonstration of Compliance.* By no later than the earliest applicable compliance date specified in subsections (e)(2)(B) or (e)(3)(C), for each in-use cargo handling equipment subject to the requirements of subsection (e), the owner or operator shall provide the following information to the Executive Officer:

- (A) Information listed in (i)(1), and
- (B) An identification of the control strategy implemented for each mobile cargo handling equipment in accordance with the requirements of subsection (e) for purposes of demonstrating compliance.

- (3) *Annual Reporting.* Each terminal owner or operator shall submit an annual report to the Executive Officer by January 31, 2007, and by each January 31 annually, through 2016 as described below:

- (A) Company name;
- (B) Contact name, phone number, address, e-mail address;
- (C) Address of equipment, including name of port or intermodal rail yard where equipment is operated;
- (D) The population, as of January 1 of that year, of equipment in each yard truck model year group and each non-yard truck model year group; and
- (E) A signed affidavit stating the completeness and accuracy of the annual report.
- (F) An owner or operator that claims an extension pursuant to paragraph (f)(6) shall submit the following information to ARB for each engine which an extension is granted annually and for any electric or hybrid equipment purchased in response to extension requirements:
  - 1. Engine serial number,
  - 2. Engine manufacturer,
  - 3. Engine model year,
  - 4. Engine family and series, and,
  - 5. Annual hours of operation as measured by the engine's hour meter.

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**(k) Executive Officer Approval to Transfer Non-Yard Truck Mobile Cargo Handling Equipment Between Two Facilities.**

The Executive Officer shall allow an owner or operator of a port terminal or intermodal rail yard to transfer non-yard truck cargo handling equipment owned, leased, or rented by the owner or operator between two port terminals or intermodal rail yards under the control of the same owner or operator upon request from the owner or operator and if,

- (1) The two facilities that the equipment is being transferred from and to are under the same control;
- (2) The equipment transfer will not be used to meet the requirements of this section at the facility the equipment is being transferred from;
- (3) The transferred equipment must be brought into compliance with the requirements of subsection (e)(3) before the equipment is put into operation at the new location; and
- (4) The transfer plan is submitted to the Executive Officer for review 30 days prior to the planned transfer and the Executive Officer determines that the plan does not result in a significant increase in public health impacts based on an evaluation of the following information:
  - (A) number of equipment to be transferred
  - (B) hours of operation of equipment
  - (C) estimated engine emissions levels
  - (D) proximity of new location to off-site residences

(5) The transfer plan must include the following information:

(A) Owner/operator Contact Information

1. Company name
2. Contact name, phone number, address, e-mail address
3. Address of equipment

(B) Equipment and Engine Information

1. Make of equipment and engine
2. Model of equipment and engine
3. Engine family (if applicable)
4. Engine serial number
5. Year of manufacturer of equipment and engine (if unable to determine, approximate age)
6. Rated brake horsepower
7. Estimated annual hours of operation (at both the equipment's original and new locations)
8. Control equipment (if applicable)
  - a. Type of diesel emission control strategy (DECS)
  - b. Serial number of installed DECS
  - c. Manufacturer of installed DECS
  - d. Model of installed DECS
  - e. Installation date of installed DECS
  - f. Level of control (1, 2, or 3)

(C) Facility address and phone number where equipment originally operated

(D) Facility address and phone where equipment is to be transferred

(E) Anticipated transfer date

**(I) Equipment at Rural Low-Throughput Ports**

The requirements of this entire section do not apply to equipment at low-throughput ports that are no closer than 75 miles from an urban area. If a low-throughput port subsequently exceeds the two-year average annual cargo throughput limit set in (d)(36), or the population in the surrounding community increases to exceed 50,000 persons, each owner or operator of cargo handling equipment at that port needs to submit a plan for compliance to the Executive Officer within six months of the port being notified of the exceedance. The compliance plan must include the information listed in subsections (i)(1)(A) and (B) and include compliance dates no later than 3 years from notification of the exceedance.

**(km) Right of Entry**

An agent or employee of the Air Resources Board has the right of entry to port and intermodal rail yard cargo handling facilities for the purpose of inspecting on-road and off-road cargo handling equipment and their records to determine compliance to these regulations.

**(n) Test Methods**

The following test methods are approved by the Executive Officer when testing for diesel PM, NO<sub>x</sub>, CO, HC, NMHC, and CO<sub>2</sub>. The testing must be done with the applicable method specified in the following procedures: International Organization for Standardization (ISO) 8178-2: 1996(E) ("ISO 8178 Part 2"); (2) ISO 8178-4: 1996(E) ("ISO 8178 Part 4"); and applicable methods and procedures specified in 40 CFR Part 94 (as amended in 2007), all of which are incorporated herein by reference, or 40 CFR Part 89, 40 CFR Part 1039, or 40 CFR Part 1065 for nonroad (off-road) engines, as those parts existed on September 22, 2011. Each of the procedures specified in this subsection is incorporated by reference herein.

**(lo) Prohibitions**

No person who is engaged in this State in the business of selling to an ultimate purchaser, or renting or leasing new or used mobile cargo handling equipment, including, but not limited to, manufacturers, distributors, and dealers, shall sell, offer for sell, import, deliver, purchase, receive, or otherwise acquire a new or used mobile cargo handling equipment for the purpose of selling, renting, or leasing in California, that does not meet the performance requirements of this regulation.

**(p) Disclosure of Retrofit Requirements**

- (1) Any person who sells, offers for sale, leases or rents cargo handling equipment with an engine certified to Tier 4 Alternate PM off-road diesel engine standards, as specified in title 13, CCR, section 2423(b)(2)(B) or an independent engine certified to those standards that will be used in cargo handling equipment must provide the following disclosure in writing on the bill of sale, "When operated at a California port or intermodal rail yard, this engine is subject to the retrofit requirements of either subsection (e)(1)(B)3., (e)(3)(B)1.b., (e)(3)(B)2.b., or (e)(3)(B)3.b. of the California Air Resources Board's Regulation for Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards."
- (2) For purposes of this section, it shall be presumed that an independent engine sold or leased by person who sells cargo handling equipment will be used to repower such equipment. For more information, please visit the California Air Resources Board's website at <http://www.arb.ca.gov/ports/cargo/cargo.htm>.

**(mq) Severability**

If any subsection, paragraph, subparagraph, sentence, clause, phrase, or portion of this regulation is, for any reason, held invalid, unconstitutional, or unenforceable by any

court of competent jurisdiction, such portion shall be deemed as a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of the regulation.

**(nr) Submittal of Documents**

- (A) (1) All documents required under this regulation to be submitted to the Executive Officer shall be submitted as follows:

California Air Resources Board  
Stationary Source Division, Cargo Handling Equipment  
P.O. Box 2815  
Sacramento, California 95812-2815

- (B) (2) An alternative method, including electronic submittals, may be approved by the Executive Officer.

NOTE: Authority cited: Sections 39600, 39601, 39618, 39658, 39659, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3, 42400.3.5, 42400.6, 42402, 42402.1, 42402.2, 42402.3, 42402.4, 42410, 43013 and 43018, Health and Safety Code. Reference: Sections 39618, 39650, 39658, 39659, 39667, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3, 42400.3.5, 42400.6, 42402, 42402.1, 42402.2, 42402.3, 42402.4, 42410, 43013 and 43018. ~~Health and Safety Code.~~