

Appendix A-1

Title 13

Proposed Second 15-Day Modifications to the Proposed Regulation Order

Date of Release: June 2021; Proposed 2nd 15-Day Notice
Date of Release: May 2021; Proposed 30-Day Notice
Date of Hearing: August 27, 2020

This Page Intentionally Left Blank

Proposed Second 15-Day Modifications to Title 13, California Code of Regulations

Amend Sections 1900, 1956.8, 1961.2, 1965, 1968.2, 1971.1, 1971.5, 2035, 2036, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2121, 2123, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2133, 2137, 2139, 2139.5, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2166, 2166.1, 2167, 2168, 2169, 2170, 2423, and 2485 of title 13, California Code of Regulations. Adopt Sections 2139.5, 2169.1, 2169.2, 2169.3, 2169.4, 2169.5, 2169.6, 2169.7, and 2169.8 of title 13, California Code of Regulations.

Note: The originally proposed regulatory language is shown in ~~strike through~~ to indicate deletions and underline to indicate additions. New deletions and additions to the proposed language that were made public with the 30-Day Notice are shown in ~~double strike through~~ and double underline format, respectively. New additions and deletions to the proposed language that are made public with this notice are shown in ***bold italic double underline*** and ~~***bold italic double strikeout***~~, respectively. Subsections for which no changes are proposed in this rulemaking are indicated with [No change] or “* * *”. “[INSERT DATE OF AMENDMENT]” is not actual proposed language but is a placeholder for a date that is to be determined upon the amendment’s approval by the California Air Resources Board.

§ 1900. Definitions.

* * * *

§ 1956.8. Exhaust Emission Standards and Test Procedures - 1985 and Subsequent Model Heavy-Duty Engines and Vehicles, and 2021 and Subsequent Zero-Emission Powertrains, and 2022 and Subsequent Model Heavy-Duty Hybrid Powertrains.

(a)(1) *[No change]*

* * * *

(2)(A) The exhaust emissions from new ~~2004 and subsequent~~ through 2023 model heavy-duty diesel engines, heavy-duty natural gas-fueled and liquefied-petroleum-gas-fueled engines derived from diesel-cycle engines, and heavy-duty methanol-fueled diesel engines, and the optional, reduced-emission standards for 2002 ~~and subsequent~~ through 2023 model engines produced beginning October 1, 2002, except in all cases engines used in medium-duty vehicles, shall not exceed:

Exhaust Emission Standards for 2004 and Subsequent Through 2023 Model Heavy-Duty Engines, and Optional, Reduced Emission Standards for 2002 and Subsequent Through 2023 Model Heavy-Duty Engines Produced Beginning October 1, 2002, Other than Urban Bus Model-Year Engines Produced From October 1, 2002 Through 2006^L
(grams per brake horsepower-hour [g/bhp-hr])

<i>Model Year</i>	<i>Oxides of Nitrogen Plus Non-methane Hydrocarbons</i>	<i>Optional Oxides of Nitrogen Plus Non-methane Hydrocarbons</i>	<i>Oxides of Nitrogen</i>	<i>Optional Oxides of Nitrogen</i>	<i>Non-methane hydrocarbons</i>	<i>Carbon Monoxide</i>	<i>Particulates</i>
2004-2006 ^H	2.4 ^{A,C,E,J}	2.5 ^{B,C,E,J}	n/a		n/a	15.5	0.10 ^C
October 1, 2002-2006	n/a	1.8 to 0.3 ^{A,D,F}	n/a		n/a	15.5	0.03 to 0.01 ^G
2007 and subsequent through 2023 ^M	n/a	n/a	0.20 ^I		0.14	15.5	0.01 ^K
2015 and Subsequent through 2021 (Optional) ^{N,O}	n/a	n/a	n/a	0.10, 0.05, or 0.02	0.14	15.5	0.01
<u>2022-2023 (Optional)^{N,O}</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>0.10, 0.05, 0.02, or 0.01</u>	<u>0.14</u>	<u>15.5</u>	<u>0.01</u>

* * * *

^L For 2007 through 2023 and subsequent model-year urban bus engines, this section applies. For urban bus model-year engines produced from October 1, 2002 through 2006, refer to section 1956.1.

^M For model years between 2007 and 2009, transit agencies purchasing urban buses and/or urban bus engines shall meet the requirements set forth in section 2023.1.

^N Optional Low NOx emission standards. A manufacturer may choose to offer an engine that is 50%, 75%, or 90% (or 95% for 2022 and 2023 model year engines) below the current 0.20 g/bhp-hr NOx emission standards for heavy duty engines. A manufacturer may not include an engine family certified to the optional NOx emission standards in the ABT programs for NOx but may include it for particulates.

^O On-Board Diagnostic (OBD) requirements are to be followed per Title 13, CCR, section 1971.1 with the exception of the NOx emission threshold malfunction criteria for all applicable monitors, in which case a malfunction criterion of 0.4 g/bhp-hr NOx shall be used (i.e., the OBD system is required to detect a malfunction before NOx emissions exceed 0.4 g/bhp-hr).

¹ Seven of the largest heavy-duty diesel engine manufacturers will be implementing measures to reduce emissions beginning October 1, 2002, to meet the requirements of the Heavy-Duty Diesel Engine Settlement Agreements reached with the ARB. The Heavy-Duty Diesel Engine Settlements were agreements reached in response to lawsuits brought by the United States Environmental Protection Agency and violations alleged by the ARB pertaining to excess in-use emissions caused by the use of defeat devices and unacceptable algorithms. Navistar signed its Settlement Agreement on October 22,

1998. Cummins, Detroit Diesel Corporation, Caterpillar, Volvo, Mack and Renault signed their Settlement Agreements on December 15, 1998.

(B) Phase-in Options

1. Early NOx compliant engines. For model years 2007, 2008, and 2009, a manufacturer may, at their option, certify one or more of their engine families to the combined NOx plus NMHC standard or FEL applicable to model year 2006 engines under section 1956.8 (a)(2)(A), in lieu of the separate NOx and NMHC standards or FELs applicable to the 2007 ~~and subsequent~~ through 2023 model years, specified in section 1956.8 (a)(2)(A). Each engine certified under this phase-in option must comply with all other emission requirements applicable to model year 2007 engines. To qualify for this option, a manufacturer must satisfy the U.S.-directed production requirement of certifying no more than 50 percent of engines to the NOx plus NMHC standards or FELs applicable to 2006 engines, as specified in 40 Code of Federal Regulations, part 86, section 86.007-11(g)(1), as adopted January 18, 2001. In addition, a manufacturer may reduce the quantity of engines that are required to be phased-in using the early certification credit program specified in 40 Code of Federal Regulations, part 86, section 86.007-11(g)(2), as adopted January 18, 2001, and the “Blue Sky” engine program specified in 40 Code of Federal Regulations, part 86, section 86.007-11(g)(4), as adopted January 18, 2001.

2. Early PM compliant engines. A manufacturer certifying engines to the 2007 ~~and subsequent~~ through 2023 model year PM standard listed in section 1956.8(a)(2)(A) (without using credits, as determined in any averaging, banking, or trading program described in “California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles,” to comply with the standards) before model year 2007 may reduce the number of engines that are required to meet the 2007 ~~and subsequent~~ through 2023 model year PM standard listed in section 1956.8(a)(2)(A) in model year 2007, 2008 and/or 2009. To qualify for this option, a manufacturer must satisfy the PM emission requirements pursuant to the methods detailed in 40 Code of Federal Regulations, part 86, section 86.007-11 (g)(2)(ii), as adopted January 18, 2001.

(C) 1. Except as provided in subsection (a)(2)(C)2 and (a)(2)(F) below, the ~~The~~ exhaust emissions from new 2024 through 2026 model heavy-duty diesel engines, urban bus engines, heavy-duty natural gas-fueled and liquefied-petroleum-gas-fueled engines derived from diesel-cycle engines, and heavy-duty methanol-fueled diesel engines, in all cases engines used in heavy-duty vehicles over 14,000 pounds GVWR, shall not exceed:

**Exhaust Emission Standards for 2024 through 2026 Model
Light Heavy-Duty Engines, Medium Heavy-Duty Engines and
Heavy Heavy-Duty Engines**
(g/bhp-hr)

<u>Test Procedure</u>	<u>Oxides of Nitrogen</u>	<u>Non-methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Particulates</u>
<u>FTP cycle</u>	<u>0.050</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>
<u>RMC cycle</u>	<u>0.050</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>
<u>Low-load cycle</u>	<u>0.200</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>

<u>Optional Low NOx Exhaust Emission Standards</u> (g/bhp-hr) ^A				
<u>FTP cycle</u>	<u>0.020</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>
<u>RMC cycle</u>	<u>0.020</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>
<u>Low-load cycle</u>	<u>0.080</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>

^AOptional Low NOx emission standards for 2024 through 2026 model heavy-duty engines used in heavy-duty vehicles over 14,000 pounds GVWR. A manufacturer may not include an engine family certified to the optional NOx emission standard in the federal or California ABT programs for NOx but may include it for particulates.

2. 2024 through 2026 model year heavy-duty diesel engines rated at or greater than 525 bhp maximum power as defined in 40 CFR section 1065.510.

a. In lieu of compliance with the requirements specified in subsection (a)(2)(C)1 above, a manufacturer may elect to certify a heavy-duty engine family or families rated at or above 525 bhp by:

i. submitting the federal engine family certification approval (e.g., federal certificate of conformity) for the applicable engine family or families and complying with all federal requirements for heavy-duty engines.

ii. demonstrating compliance with the Heavy-Duty Diesel Engine Idling Requirements for that model year as provided in subparagraph 13 CCR section 1956.8(a)(6), and

iii. providing emission warranty requirements for that model year as specified in 13 CCR section 2036.

b. A manufacturer is only eligible to utilize this option if it meets the criteria identified in subsections (a)(2)(C)2.b.i to ii below.

i. The manufacturer must have certified and sold heavy-duty diesel engines rated at or above 525 bhp maximum power in California for either the 2018 or 2019 model year.

ii. The maximum number of heavy-duty diesel engines covered by engine families certified under this provision that a manufacturer may sell

in California in each applicable model year under this provision must not exceed 1.10 times that manufacturer's 2018 or 2019 model year California sales volume of engines rated at or above 525 bhp, whichever is greater.

3. For 2024 and 2025 model year heavy-duty diesel engine families rated below 525 bhp maximum power as defined in 40 CFR §1065.510, a manufacturer may elect to certify a heavy-duty diesel engine family or families with $0.100 < \text{FTP NO}_x \text{ FEL} \leq 0.20 \text{ g/bhp-hr}$, and $0.005 < \text{FTP PM FEL} \leq 0.01 \text{ g/bhp-hr}$ if it meets the criteria set forth below in subparagraphs a. and b. below:

a. The engine family meets the applicable regulatory requirements specified in title 13, CCR, Section 1956.8 with the following allowances:

i. The low-load cycle emission standards in title 13, CCR, Section 1956.8(a)(2)(C)1 would not be applicable.

ii. In lieu of meeting the requirements specified in subparagraph §86.1370.B.6 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), the engine family must comply with the requirements for a 2023 model year engine family, as set forth in subparagraphs §86.1370.A through §86.1370.B.5 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).

iii. In lieu of meeting the requirements specified in subparagraph §86.004-26.B 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), the engine family must comply with the requirements for a 2023 model year engine family, as set forth in subparagraph §86.004-26.A 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).

iv. Comply with the heavy-duty OBD requirements specified in title 13, CCR, Sections 1971.1 and 1971.5 applicable to a 2023 model year engine family.

b. A manufacturer is only eligible to utilize this option if it meets all of the criteria identified in subparagraphs i through vi below.

i. The manufacturer must certify the engine family subject to the averaging, trading and banking provisions in section §86.xxx-15.B.3 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).

ii. The maximum family emission limit for the engine family must not exceed the specified values in section §86.xxx-15.B.3.(i) 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).

iii. The manufacturer must offset its model year NOx and PM deficit balance generated by legacy engines by using credits from the heavy-duty zero-emission averaging set described in section §86.xxx-15.B.3.(j) 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).

1. If a sufficient quantity of heavy-duty zero-emission NOx or PM credits are not available, or are only available for a cost exceeding \$4,000 (for enough NOx or PM credits to offset one medium heavy-duty legacy engine), the manufacturer may submit a plan for Executive Officer approval to use credits from the same averaging set described in section §86.xxx-15.B.3.(a) 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), to offset any remaining model year deficit balance generated by legacy engines. The plan must include information describing the manufacturer’s attempts to purchase heavy-duty zero-emission NOx or PM credits from all manufacturers who have certified heavy-duty zero-emission vehicles or powertrains with CARB and that the manufacturer was denied a fair market offer to purchase such credits (i.e., such credits were only available at a cost exceeding \$4,000 for enough NOx or PM credits to offset one medium heavy-duty legacy engine). The Executive Officer will base his or her determination upon the information included in the plan and the exercise of good engineering judgment that the information substantiates that sufficient heavy-duty zero-emission NOx or PM credits were not available or were only available at a cost exceeding \$4,000 (for

enough NOx or PM credits to offset one medium heavy-duty legacy engine).

2. If credits from the same averaging set are not available, the manufacturer may carryover the NOx or PM deficit balance generated by legacy engines until the end of the 2026 model year, provided the manufacturer offsets the remaining legacy engine generated deficit balance times 1.25 with credits from the heavy-duty zero-emission averaging set or the same averaging set described in section §86.xxx-15.B.3.(a) 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) by the end of the 2026 model year. In other words, if the deficit carried over is 1 Mg, the manufacturer would need to offset the deficit with 1.25 Mg

3. If at the end of the 2026 model year, a sufficient quantity of heavy-duty zero-emission NOx or PM credits are not available for the manufacturer to offset the remaining legacy engine generated deficit balance times 1.25, the manufacturer must do all the following for the remaining NOx or PM balance:

A. Provide documentation to the Executive Officer substantiating that the manufacturer has attempted to purchase heavy-duty NOx or PM credits from all manufacturers with such credits and was denied a fair market offer; i.e., exceeding \$4,000 for enough NOx or PM credits to offset one medium heavy-duty legacy engine.

B. Submit a plan for Executive Officer approval for projects targeted at California disadvantaged communities and that are sufficient to offset the excess emissions within 5 years. The plan must include project descriptions and budgets and a demonstration that the projects will achieve reductions required. The Executive Officer will base his or her determination upon the documentation provided by the manufacturer and the exercise of good engineering judgment that the plan would benefit disadvantaged communities, and would fully offset the excess emissions due to the credit deficit balance within 5 years. The manufacturer may submit contingency plans to be assessed on the same standard as set forth in this subsection.

C. At the end of the 5-year period, the manufacturer must submit information documenting that the excess

emissions have been offset. Failure to do so means that legacy engines would be subject to the provisions of §86.004-15.A.(b)(5) 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).

iv. For each certifying heavy-duty diesel engine manufacturer, the total California sales volume of legacy engines certified under this provision may not exceed 45 percent of the manufacturer’s total actual California sales of heavy-duty diesel engines for 2024 model year, and 25 percent of the manufacturer’s total actual California sales of heavy-duty diesel engines for 2025 model year.

v. NOx and PM deficits generated by legacy engines are subject to the provisions of §86.004-15.A.(b)(5) 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).

vi. In order to certify legacy engines in a particular model year, a manufacturer must also certify one or more heavy-duty diesel engine families subject to the standards in title 13, CCR, Section 1956.8(a)(2)(C)1 in the same model year.

(D) Except as provided in subsection (a)(2)(F) below, the exhaust emissions from new 2027 and subsequent model heavy-duty diesel engines, urban bus engines, heavy-duty natural gas-fueled and liquefied-petroleum-gas-fueled engines derived from diesel-cycle engines, and heavy-duty methanol-fueled diesel engines, in all cases engines used in heavy-duty vehicles over 14,000 pounds GVWR, shall not exceed:

Exhaust Emission Standards for 2027 and Subsequent Model Light Heavy-Duty Engines, and Medium Heavy-Duty Engines (g/bhp-hr)

<u>Test Procedure</u>	<u>Oxides of Nitrogen</u>	<u>Non-methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Particulates</u>
<u>FTP cycle</u>	<u>0.020</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>
<u>RMC cycle</u>	<u>0.020</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>
<u>Low-load cycle</u>	<u>0.050</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>

<u>Optional Low NOx Exhaust Emission Standards</u> <u>(g/bhp-hr)^A</u>				
<u>FTP and RMC cycles</u>	<u>0.010</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>
<u>Low-load cycle</u>	<u>0.025</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>

Exhaust Emission Standards for 2027 Through 2030 Model
Heavy Heavy-Duty Engines
(g/bhp-hr)

<u>Test Procedure</u>	<u>Intermediate Useful Life Oxides of Nitrogen^B</u>	<u>Oxides of Nitrogen</u>	<u>Non-methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Particulates</u>
<u>FTP cycle</u>	<u>0.020</u>	<u>0.035</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>
<u>RMC cycle</u>	<u>0.020</u>	<u>0.035</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>
<u>Low-load cycle</u>	<u>0.050</u>	<u>0.090</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>

<u>Optional Low NOx Exhaust Emission Standards</u> <u>(g/bhp-hr)^A</u>				
<u>FTP and RMC cycles</u>	<u>0.010</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>
<u>Low-load cycle</u>	<u>0.025</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>

Exhaust Emission Standards for 2031 and Subsequent Model
Heavy Heavy-Duty Engines
(g/bhp-hr)

<u>Test Procedure</u>	<u>Intermediate Useful Life Oxides of Nitrogen^B</u>	<u>Oxides of Nitrogen</u>	<u>Non-methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Particulates</u>
<u>FTP cycle</u>	<u>0.020</u>	<u>0.040</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>
<u>RMC cycle</u>	<u>0.020</u>	<u>0.040</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>
<u>Low-load cycle</u>	<u>0.050</u>	<u>0.100</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>

<u>Optional Low NOx Exhaust Emission Standards</u> <u>(g/bhp-hr)^A</u>				
<u>FTP and RMC cycles</u>	<u>0.010</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>
<u>Low-load cycle</u>	<u>0.025</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>

^A ~~Optional Low NOx emission standard for 2027 and subsequent model heavy duty engines used in heavy duty vehicles over 14,000 pounds GVWR. A manufacturer may not include an engine family certified to the optional NOx emission standard in the federal or California ABT programs for NOx but may include it for particulates.~~

^B ~~Intermediate Useful Life NOx Standard is applicable at or below 435,000 miles/10 years/22,000 hours interval as specified in section 86.xxx 2.A.1.2.2(4)(iii)(A) of California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy Duty Diesel Engines and Vehicles, incorporated by reference in subsection (b).~~

(E) The exhaust emissions from new 2024 and subsequent model heavy-duty diesel engines, urban bus engines, heavy-duty natural gas-fueled and liquefied-petroleum-gas-fueled engines derived from diesel-cycle engines, and heavy-duty methanol-fueled diesel engines, in all cases engines used in heavy-duty vehicles over 14,000 pounds GVWR, certified to optional low NOx exhaust emission standards shall not exceed:

Optional Low NOx Exhaust Emission Standards for 2024 and Subsequent Model Heavy -Duty Diesel Engines
(g/bhp-hr) ^A

<u>Model Year</u>	<u>Test Procedure</u>	<u>Oxides of Nitrogen</u>	<u>Non-methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Particulates</u>
<u>2024-2026</u>	<u>FTP and RMC cycles / Low-load cycle</u>	<u>0.020/0.080 or 0.010/0.040</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>
<u>2027 and subsequent</u>	<u>FTP and RMC cycles / Low-load cycle</u>	<u>0.010/0.025</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>

^A A manufacturer may not include an engine family certified to the optional NOx emission standard in the federal or California ABT programs for NOx but may include it for particulates.

(F) Transit Agency Diesel-Fueled Bus and Engine Exemption Request

For 2022 and subsequent model diesel-fueled medium heavy-duty or heavy heavy-duty engines used in urban buses, the Executive Officer will approve a Transit Agency Diesel-Fueled Bus and Engine Exemption Request made by a transit agency that meets each of the conditions and requirements in subparagraphs 1 and 2 below. If granted, an exemption request will allow a transit agency to purchase, rent, or lease exempt buses, contract for service with bus service providers to operate exempt buses, or re-power buses with engines that are certified to both the federal emission standards for 2010 and later model year diesel-fueled medium heavy-duty or heavy heavy-duty engines and vehicles, as set forth in title 40, Code of Federal Regulations section

86.007-11, as last amended October 25, 2016, and the Greenhouse Gas Emissions and Fuel Economy Standards for Medium- and Heavy-Duty Engines and Vehicles – Phase 2 requirements promulgated at 81 Fed. Reg. 73,478 (October 25, 2016).

1. Conditions

- a. The transit agency is subject to the Innovative Clean Transit Regulations, California Code of Regulations, title 13, CCR section 2023, et seq.
- b. The transit agency has fulfilled the reporting requirements of the Innovative Clean Transit Regulations specified in California Code of Regulations, title 13, section CCR 2023.8 in the year of submitting the Transit Agency Diesel-Fueled Bus and Engine Exemption Request.
- c. The transit agency has purchased the required number of zero-emission buses in the immediately preceding year, as required by title 13, CCR, section 2023.1, or has been granted an exemption from the purchase of zero-emission bus(es) as specified in section 2023.4.
- d. If the transit agency has bus(es) fueled with compressed natural gas (CNG) in their fleet, the Transit Agency Diesel-Fueled Bus and Engine Exemption Request must include a statement with a supporting explanation from the transit agency that it is cost prohibitive for the transit agency to procure CNG-fueled bus(es) or to fuel and support additional CNG-fueled bus(es) from any established fueling facility to which the transit agency has authority or agreement to access. If the transit agency has authority or agreement to access an established CNG fueling facility, the transit agency must also submit documentation that contains information about the fueling capacity of its established CNG fueling facility and how the transit agency has fully utilized this fueling capacity.
- e. If the transit agency has previously received an Executive Exemption Approval Letter from the Executive Officer as described in section title 13, CCR section 1956.8(a)(2)(F)3, the transit agency must complete the reporting requirements of section 1956.8(a)(2)(F)5.

2. Requirements and Procedures

- a. The transit agency must submit its Transit Agency Diesel-Fueled Bus and Engine Exemption Request to CARB's Executive Officer.
- b. The Transit Agency Diesel-Fueled Bus and Engine Exemption Request must be submitted by May 1st of the first calendar year in which the exemption is requested.
- c. The Transit Agency Diesel-Fueled Bus and Engine Exemption Request must identify the number of exempt buses needed for each bus type, and for each bus type how many exempt buses are planned to operate outside of NOx exempt areas.
- d. If the transit agency requests to apply the exemption request to an existing contract, the Transit Agency Diesel-Fueled Bus and Engine Exemption Request must include a copy of the contract.

- e. The Transit Agency Diesel-Fueled Bus and Engine Exemption Request must identify the number of exempt buses or re-powered buses that the transit agency requests for each calendar year within the triennial period of the Transit Agency Diesel-Fueled Bus and Engine Exemption Request, where the year the request is submitted is counted as the first calendar year. The requested number of exempted engines or buses for each calendar year must demonstrate compliance with the Innovative Clean Transit regulations' zero-emission bus purchase requirements under title 13, CCR section 2023.1, including any approved purchase exemption request under title 13, CCR section 2023.4.
- f. At the submission of the Transit Agency Diesel-Fueled Bus and Engine Exemption Request, if any of the requested exempt buses cannot be replaced with zero-emission buses within the triennial period of the Transit Agency Diesel-Fueled Bus and Engine Exemption Request, even if state incentive funding can offset the entire incremental cost of zero-emission bus purchase, the Transit Agency Diesel-Fueled Bus and Engine Exemption Request must include the number of the exempt buses that cannot be replaced with zero-emission buses and an explanation of which reason, under title 13, CCR section 2023.4(c), prevents the transit agency from purchasing zero-emission buses and must also provide the supporting documentation required in 2023.4(c).
3. The Executive Officer will issue an Executive Exemption Approval Letter if all foregoing conditions and requirements in subparagraphs 1 and 2 above are met. The Executive Exemption Approval Letter will allow a triennial quota for the purchase, rent, lease, contract for service, or re-power of exempt buses or engines. The triennial quota expires at the end of the third calendar year of the triennial period.
4. If the Transit Agency Diesel-Fueled Bus and Engine Exemption Request is approved by the Executive Officer, the transit agency may proceed with engine repower or exempt bus purchase, lease, rental, or contract for service. In the instance where new exempt engines and buses will be purchased or manufactured under the contract, the Executive Exemption Approval Letter will allow the bus and engine manufacturers to sell exempt engines to and manufacture exempt buses for the transit agency that has obtained the exemption. The transit agency must notify all parties involved of the approval and provide a copy of the issued Transit Agency Diesel-Fueled Bus and Engine Exemption Approval Letter to the engine and bus dealer(s), bus manufacturer(s), and engine manufacturer(s) involved with delivering the exempt buses or engines to the transit agency.
5. The transit agency must report the following information for the prior calendar year to the Executive Officer annually by March 31. The required information pertains to buses/engines delivered in the prior calendar year.:

- a. A copy of engine or bus purchase order, or purchase contract, as identified in title 13 CCR Section 2023 (b)(7) with the date of purchase or a lease, rental or contract for service agreement;
 - b. A copy of the certificate of conformity issued under 40 CFR section 86.007-30 for each engine family and the model year included in the purchase or a lease, rental or service contract agreement;
 - c. The number of exempt engines and buses delivered to the transit agency or transit service contractor and what bus type(s) were delivered;
 - d. For each exempt engine and bus, provide the engine make, model and engine serial number (ESN), and vehicle identification number (VIN); and
 - e. Documentation of dates of delivery and in service.
6. If any of the requirements, conditions, or criteria of title 13, CCR sections 1956.8(a)(2)(F) 1.c. and 2. are not met after approval was granted, the Executive Officer shall revoke the Executive Exemption Approval Letter. A transit agency may request a hearing to review the Executive Officer's revocation of its Executive Exemption Approval Letter pursuant to the procedures set forth in title 17, CCR section 60055.1 et. seq.

(3) Formaldehyde exhaust emissions from new 1993 and subsequent model methanol-fueled diesel engines, shall not exceed:

<i>Model Year</i>	<i>Formaldehyde (g/bhp-hr)</i>
1993-1995	0.10
1996 and subsequent	0.05

(4) An engine family whose design allows engine operation in either of two distinct alternative fueling modes, where each fueling mode is characterized by use of one fuel or a combination of two fuels and by significantly different emission levels under each mode, may certify to a different NOx or NOx plus NMHC (as applicable depending on model year) standard for each fueling mode, provided it meets the following requirements:

(A) The NOx or NOx plus NMHC certification standard used for operation under the higher emitting fueling mode must be one of the standards denoted by footnote H in paragraph (a)(1) and footnote E in paragraph (a)(2).

(B) The NOx or NOx plus NMHC certification standard used for operation under the lower emitting fueling mode must be one of the reduced-emission standards denoted by footnote I in paragraph (a)(1) and footnote F in paragraph (a)(2).

(C) The engine family is not used to participate in any manufacturer's averaging, banking or trading program.

(D) The engine family meets all other emission requirements contained in this section.

(E) The higher emitting fueling mode must be intended only for fail-safe vehicle operation when a malfunction or inadvertent fuel depletion precludes operation in the lower emitting fueling mode, as evidenced by a significantly reduced horsepower versus engine speed curve when operating in the higher emitting fueling mode when compared to the similar curve for the lower emitting fueling mode.

(5) No crankcase emissions shall be discharged directly into the ambient atmosphere from any new 2007 or later model year diesel heavy-duty diesel engine, with the following exception: heavy-duty diesel engines equipped with turbochargers, pumps, blowers, or superchargers for air induction may discharge crankcase emissions to the ambient atmosphere if the emissions are added to the exhaust emissions (either physically or mathematically) during all emission testing. Manufacturers using this exception must manufacture the engines so that all crankcase emissions can be routed into a dilution tunnel (or other sampling system approved in advance by the Executive Officer), and must account for deterioration in crankcase emissions when determining exhaust deterioration factors. For the purpose of section 1956.8(a)(2), 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."

(6) Heavy-Duty Diesel Engine Idling Requirements.

Except as provided in subsection (6)(B) below, the requirements in this subsection apply to 2008 through 2023 model diesel engines used in heavy-duty vehicles over 14,000 pounds GVWR, and 2024 and subsequent model diesel engines used in medium-duty vehicles from 10,001 to 14,000 pounds GVWR and heavy-duty vehicles over 14,000 pounds GVWR. Manufacturers may meet the requirements of this subsection by either demonstrating compliance with the Engine Shutdown System requirements of subsection (6)(A), below or the optional NOx Idling Emission Standard specified in subsection (6)(C), below.

(A) *[No change]*

* * * *

(B) Exempt Vehicles.

1. 2008 through 2023 model Hheavy-duty diesel engines to be used in buses as defined in California Vehicle Code §§ 233, 612 and 642, school buses as defined in California Vehicle Code § 545, recreational vehicles as defined in Health and Safety Code 18010, medium duty vehicles as defined in § 1900(b)(13) of title 13, California Code of Regulations (CCR), military tactical vehicles as defined in §1905 of title

13, CCR, authorized emergency vehicles as defined in California Vehicle Code § 165, armored cars, as defined in California Vehicle Code § 115, and workover rigs, as defined in § 2449 of title 13, CCR are exempted from these requirements.

2. 2024 and subsequent model heavy-duty engines to be used in military tactical vehicles as defined in title 13, CCR, Section 1905 and authorized emergency vehicles as defined in California Vehicle Code §165 are exempted from these requirements.

(C) Optional NOx idling emission standard.

1. Emission standard.

a. In lieu of the engine shutdown system requirements specified in subsection (a)(6)(A) above, an engine manufacturer may elect to certify its new 2008 and subsequent through 2023 model-year heavy-duty diesel engines and 2024 through 2026 model year heavy-duty diesel engines subject to the provisions specified in subsection (a)(2)(C)2 and 2024 through 2025 model year heavy-duty diesel engines subject to the provisions specified in subsection (a)(2)(C)(3) above, to an optional NOx idling emission standard of 30 grams per hour.

b. Except as provided in subsection (a)(6)(C)1.a above, in ~~the~~ lieu of the engine shutdown system requirements specified in subsection (a)(6)(A) above, an engine manufacturer may elect to certify its new 2024 and subsequent model year heavy-duty diesel engines to the following optional NOx idling emission standards. The optional NOx idling emissions shall not exceed:

Optional NOx Idling Emission Standards for 2024 and Subsequent Model Diesel Engines Used in Medium-Duty Vehicles from 10,001 to 14,000 GVWR and Diesel Engines Used in Heavy-Duty Vehicles Greater than 14,000 Pounds GVWR (grams per hour)

<u>Model Year</u>	<u>Oxides of Nitrogen</u>
<u>2024 – 2026</u>	<u>10</u>
<u>2027 and subsequent</u>	<u>5</u>

2. Compliance Determination:

a. Compliance with ~~this~~ these optional standards will be determined based on testing conducted pursuant to the supplemental NOx idling test cycle and procedures specified in section 86.1360-2007.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 subsection (b). The manufacturer may request an alternative test procedure if the technology used cannot be demonstrated using the procedures in

section 86.1360-2007.B.4, subject to advance approval of the Executive Officer.

b. A manufacturer certifying to the optional NOx idling standard must not increase emissions of CO, PM, or NMHC, determined by comparing results from the supplemental NOx idling test cycle and procedures specified in section 86.1360-2007.B.4 of the referenced “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles” to emission results from the idle mode of the supplemental steady state test cycle or emission results from idle portions of the transient test cycle for heavy duty diesel engines, respectively specified in sections 86.1360-2007 and 86.1327-98 of the referenced “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles.” With advance Executive Officer approval, a manufacturer may use other methods of ensuring that emissions of CO, PM, and NMHC are not adversely affected in meeting the optional NOx requirement. Also, manufacturers shall state in their application for certification that meeting the optional NOx idling requirement will not adversely affect the associated emissions of CO, PM and NMHC.

c. An engine manufacturer certifying its engine to the optional NOx idling emission standard must also produce a vehicle label, as defined in subsection 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 subsection (b).

* * * *

(9) The exhaust emissions from new 2022 and subsequent model optionally certified heavy-duty diesel hybrid powertrains used in heavy-duty vehicles over 14,000 pounds GVWR shall not exceed the emission standards in 13 CCR §1956.8(a).

The exhaust emission standards from new 2022 and subsequent model optionally certified diesel hybrid powertrains used in incomplete vehicles from 10,001 to 14,000 pounds GVWR shall not exceed the emission standards in 13 CCR §1956.8.

* * * *

(b) *Test Procedures.* The test procedures for determining compliance with standards applicable to 1985 and subsequent model heavy-duty diesel engines and vehicles and 2022 and subsequent model diesel hybrid powertrains, and the requirements for participating in the averaging, banking and trading programs, are set forth in the “California Exhaust Emission Standards and Test Procedures for 1985 through 2003 Model Heavy-Duty Diesel-Engines and Vehicles,” adopted April 8, 1985,

as last amended December 12, 2002, the “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel-Engines and Vehicles,” adopted December 12, 2002, as last amended April 18, 2019[INSERT DATE OF AMENDMENT], and the “California Interim Certification Procedures for 2004 and Subsequent Model Hybrid-Electric and Other Hybrid Vehicles in the Urban Bus and Heavy-Duty Vehicle Classes,” adopted October 24, 2002, as last amended October 21, 2014, which are incorporated by reference herein.

* * * *

(c)(1)(B) The exhaust emissions from new ~~2005 and subsequent through 2023~~ model heavy-duty Otto-cycle engines, except for Otto-cycle medium- and heavy-duty engines subject to the alternative standards in 40 CFR §86.005-10(f), shall not exceed:

California Emission Standards for 2005 and ~~Subsequent through 2023~~ Model Heavy-Duty Otto-Cycle Engines ^A
(in g/bhp-hr)

<i>Model Year</i>	<i>Emission Category</i>	<i>NMHC + NOx</i>	<i>NMHC</i>	<i>NOx</i>	<i>CO^G</i>	<i>HCHO</i>	<i>PM</i>
Standards for Heavy-Duty Otto-Cycle Engines Used in 2005 through 2019 Model Incomplete Medium-Duty Vehicles 8,501 to 10,000 pounds GVW^B and 2005 and Subsequent through 2023 Model Incomplete Medium-Duty Vehicles 10,001 to 14,000 pounds GVW^C							
2005 through 2007	ULEV	1.0 ^{D,F}	n/a	n/a	14.4	0.05	n/a
	SULEV	0.5	n/a	n/a	7.2	0.025	n/a
2008 and subsequent-2023	ULEV	n/a	0.14 ^F	0.20 ^F	14.4	0.01	0.01
	SULEV	n/a	0.07 ^F	0.10 ^F	7.2	0.005	0.005
Standards for Heavy-Duty Otto-Cycle Engines Used In Heavy-Duty Vehicles Over 14,000 pounds GVW							
2005 through 2007	n/a	1.0 ^{D,F}	n/a	n/a	37.1	0.05 ^E	n/a
2008 and subsequent-2023	n/a	n/a	0.14 ^F	0.20 ^F	14.4	0.01	0.01
2015 and subsequent-2023 2021 ^{H,I}	Optional	n/a	0.14	0.10, 0.05, or 0.02	14.4	0.01	0.01
<u>2022-2023</u> ^{H,I}	<u>Optional</u>	<u>n/a</u>	<u>0.14</u>	<u>0.10,</u> <u>0.05,</u> <u>0.02, or</u> <u>0.01</u>	<u>14.4</u>	<u>0.01</u>	<u>0.01</u>

^A These standards apply to petroleum-fueled, alcohol-fueled, liquefied petroleum gas-fueled and natural gas-fueled Otto-cycle engines.

^B For the 2020 and subsequent model years, medium-duty vehicles 8,501 to 10,000 pounds GVW must certify to the primary emission standards and test procedures for complete vehicles specified in section 1961.2, title 13, CCR.

^C A manufacturer of engines used in incomplete medium-duty vehicles may choose to comply with these standards as an alternative to the primary emission standards and test procedures for complete vehicles specified in section 1961 or 1961.2, title 13, CCR. A manufacturer that chooses to comply with these optional

heavy-duty engine standards and test procedures shall specify, in the Part I application for certification, an in-use compliance test procedure, as provided in section 2139(c), title 13 CCR.

^D A manufacturer may request to certify to the Option 1 or Option 2 federal NMHC + NOx standards as set forth in 40 CFR § 86.005-10(f). However, for engines used in medium-duty vehicles, the formaldehyde level must meet the standard specified above.

^E This standard only applies to methanol-fueled Otto-cycle engines.

^F A manufacturer may elect to include any or all of its medium- and heavy-duty Otto-cycle engine families in any or all of the emissions ABT programs for HDEs, within the restrictions described in section I.15 of the "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines," incorporated by reference in section 1956.8(d). For engine families certified to the Option 1 or 2 federal standards, the FEL must not exceed 1.5 g/bhp-hr. If a manufacturer elects to include engine families certified to the 2005 and subsequent through 2023 model year standards, the NOx plus NMHC FEL must not exceed 1.0 g/bhp-hr. For engine families certified to the 2008 and subsequent through 2023 model year standards, the FEL is the same as set forth in 40 CFR 86.008-10(a)(1).

^G Idle carbon monoxide: For all Otto-cycle heavy-duty engines utilizing aftertreatment technology, and not certified to the on-board diagnostics requirements of section 1968, et seq, as applicable, the CO emissions shall not exceed 0.50 percent of exhaust gas flow at curb idle.

^H Optional Low NOx emission standards. A manufacturer may choose to offer an engine that is 50%, 75%, or 90% (or 95% for 2022 and 2023 model year engines) below the current 0.20 g/bhp-hr NOx emission standards for heavy duty engines. A manufacturer may not include an engine family certified to the optional NOx emission standards in the ABT programs for NOx but may include it for NMHC.

^I On Board Diagnostic (OBD) requirements are to be followed using Title 13, CCR, section 1971.1 with the exception of the NOx emission threshold malfunction criteria for all applicable monitors, in which case the malfunction criteria shall be as follows:

(A) for monitors that require detection of a malfunction before emissions exceed 1.5 times the applicable NOx standard, a malfunction criterion of 0.3 g/bhp-hr NOx shall be used (i.e., the OBD system is required to detect a malfunction before NOx emissions exceed 0.3 g/bhp-hr).

(B) for monitors that require detection of a malfunction before emissions exceed 1.75 times the applicable NOx standard, a malfunction criterion of 0.35 g/bhp-hr NOx shall be used (i.e., the OBD system is required to detect a malfunction before NOx emissions exceed 0.35 g/bhp-hr).

(C) for monitors that require detection of a malfunction before emissions exceed 3.0 times the applicable NOx standard, a malfunction criterion of 0.6 g/bhp-hr NOx shall be used (i.e., the OBD system is required to detect a malfunction before NOx emissions exceed 0.6 g/bhp-hr).

(c)(1)(C) The exhaust emissions from 2024 and subsequent model Otto-cycle heavy-duty engines, including engines used in incomplete medium-duty vehicles from 10,001-14,000 pounds GVWR, shall not exceed:

Exhaust Emission Standards for 2024 and Subsequent Model Otto-Cycle Heavy-Duty Engines and Otto-Cycle Engines Used in Incomplete Medium-Duty Vehicles from 10,001-14,000 Pounds GVWR (g/bhp-hr)^A

<u>Test Procedure</u>	<u>Model Year</u>	<u>Oxides of Nitrogen</u>	<u>Non-methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Formaldehyde</u>	<u>Particulates</u>
FTP cycle	2024 - 2026	0.050	0.14	14.4	0.01	0.005
FTP Cycle	2027 and Subsequent	0.020	0.14	14.4	0.01	0.005

Optional Low NOx Exhaust Emission Standards for 2024 and Subsequent Model Otto-Cycle Heavy-Duty Engines (g/bhp-hr)^B

<u>Test Procedure</u>	<u>Model Year</u>	<u>Oxides of Nitrogen</u>	<u>Non-methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Formaldehyde</u>	<u>Particulates</u>
FTP cycle	2024 - 2026	0.020	0.14	14.4	0.01	0.005

<u>Test Procedure</u>	<u>Model Year</u>	<u>Oxides of Nitrogen</u>	<u>Non-methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Formaldehyde</u>	<u>Particulates</u>
	<u>2027 and Subsequent</u>	<u>0.010</u>	<u>0.14</u>	<u>14.4</u>	<u>0.01</u>	<u>0.005</u>

^A A manufacturer of engines used in incomplete medium-duty vehicles from 10,001-14,000 pounds GVWR may choose to comply with these standards as an alternative to the primary emission standards and test procedures for complete vehicles specified in section 1961.2, title 13, CCR. A manufacturer that chooses to comply with these optional heavy-duty engine standards and test procedures shall specify, in the Part I application for certification, an in-use compliance test procedure, as provided in section 2139(c), title 13 CCR. An engine certified for use in a medium-duty vehicle shall not be used in a heavy-duty vehicle over 14,000 pounds GVWR.

^B ~~Optional Low NOx emission standard. A manufacturer may not include an engine family certified to the optional NOx emission standard in the federal or California ABT programs for NOx but may include it for Non-methane hydrocarbons.~~

(c)(1)(D) The exhaust emissions from new 2024 and subsequent model Otto-cycle heavy-duty engines used in heavy-duty vehicles over 14,000 pounds GVWR, certified to optional low NOx exhaust emission standards shall not exceed:

Optional Low NOx Exhaust Emission Standards for 2024 and Subsequent Model Otto-Cycle Heavy-Duty Engines
(g/bhp-hr)^A

<u>Test Procedure</u>	<u>Model Year</u>	<u>Oxides of Nitrogen</u>	<u>Non-methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Formaldehyde</u>	<u>Particulates</u>
<u>FTP cycle</u>	<u>2024 - 2026</u>	<u>0.010 and 0.020</u>	<u>0.14</u>	<u>14.4</u>	<u>0.01</u>	<u>0.005</u>
<u>FTP cycle</u>	<u>2027 and Subsequent</u>	<u>0.010</u>	<u>0.14</u>	<u>14.4</u>	<u>0.01</u>	<u>0.005</u>

^A A manufacturer may not include an engine family certified to the optional NOx emission standard in the federal or California ABT programs for NOx but may include it for Non-methane hydrocarbons.

* * * *

(3) *Optional Standards for 2023 and Earlier Model Complete and Incomplete Heavy-Duty Vehicles that Use Heavy-Duty Otto-Cycle Engines.* For 2023 and earlier model years only, manufacturers may request to group complete and incomplete heavy-duty Otto-cycle vehicles into the same test group as Otto-cycle vehicles certifying to the LEV III exhaust emission standards and test procedures specified in title 13, CCR, §1961.2, so long as those complete and incomplete heavy-duty Otto-cycle vehicles meet the most stringent LEV III standards to which any vehicle within that test group certifies.

(4) Greenhouse Gas Emission Standards for New 2016 and Subsequent Model Heavy-Duty Otto-Cycle Engines.

(A) *CO₂ Emission Standards.*

1. The CO₂ emissions from new 2016 through 2020 model heavy-duty Otto-cycle engines, except in all cases engines used in medium-duty vehicles, shall not exceed 627 g/hp-hr. This standard continues to apply in 2021 and later

model years for all Otto-cycle engines that are not heavy heavy-duty engines. An FCL must be specified for each engine family, which may not be less than the certified emission level for the engine family. The FEL for the engine family is equal to the FCL multiplied by 1.03. The FCL serves as the CO₂ emission standard for the engine family with respect to certification and confirmatory testing instead of the standard specified in this subsection (c)(4)(A). The FEL serves as the emission standard for the engine family with respect to all other testing. The requirements for the optional averaging, banking, and trading program and for generating credits are described in the applicable test procedures incorporated by reference in subsection (d).

2. As an option, 2017 through 2027 model year heavy-duty Otto-cycle engines, except in all cases engines used in medium-duty vehicles, may be certified to the Optional Low-CO₂ Emission Standard. The CO₂ emissions from engines certified to the Optional Low-CO₂ Emission Standard may not exceed 490 g/hp-hr. Engines certified to the Optional Low-CO₂ Emission Standard must also comply with the applicable CH₄ and N₂O emission standards set forth in subsections (c)(4)(B) and (c)(4)(C), respectively. In addition, engines certified to the Optional Low CO₂ Emission Standard and participating in the Innovative Technology Regulation set forth in sections 2208 and 2208.1 are not eligible to participate in the averaging, banking, and trading program, or to generate credits for certification.

3. The CO₂ emissions from new 2021 and subsequent model Otto-cycle engines characterized as heavy heavy-duty engines used in heavy heavy-duty vocational vehicles ~~Otto-cycle engines and new 2021 and subsequent model heavy heavy-duty tractors~~ ~~Otto-cycle engines~~ shall not exceed:

Model Years	Heavy Heavy-Duty – Vocational (g/hp-hr)	Heavy Heavy-Duty – Tractor (g/hp-hr)
2021-2023	513	447
2024-2026	506	436
2027 and later	503	432

(B) The CH₄ emissions from new 2016 and subsequent model heavy-duty Otto-cycle engines, except in all cases engines used in medium-duty vehicles, shall not exceed 0.10 g/hp-hr.

(C) The N₂O emissions from new 2016 and subsequent model heavy-duty Otto-cycle engines, except in all cases engines used in medium-duty vehicles, shall not exceed 0.10 g/hp-hr.

(5) The exhaust emission standards from new 2022 and subsequent model optionally certified heavy-duty Otto-cycle hybrid powertrains used in heavy-duty vehicles over 14,000 pounds GVWR shall not exceed the emission standards in 13 CCR

§1956.8(e) for heavy-duty Otto-Cycle engines used in heavy-duty vehicles over 14,000 pounds GVWR.

The exhaust emission standards from new 2022 and subsequent model optionally certified Otto-cycle hybrid powertrains used in incomplete vehicles from 10,001 to 14,000 pounds GVWR shall not exceed the emission standards in 13 CCR §1956.8 for Otto-Cycle engines used in incomplete vehicles from 10,001 to 14,000 pounds GVWR.

(d) The test procedures for determining compliance with standards applicable to 1987 and subsequent model heavy-duty Otto-cycle engines and vehicles and 2022 and subsequent model Otto-cycle hybrid powertrains, are set forth in the “California Exhaust Emission Standards and Test Procedures for 1987 through 2003 Model Heavy-Duty Otto-Cycle Engines and Vehicles,” adopted April 25, 1986, as last amended December 27, 2000, the “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles,” adopted December 27, 2000, as last amended ~~December 19, 2018~~ [INSERT DATE OF AMENDMENT], the “California Non-Methane Organic Gas Test Procedures,” adopted July 12, 1991, as last amended December 6, 2012, and the “California Interim Certification Procedures for 2004 and Subsequent Model Hybrid-Electric and Other Hybrid Vehicles, in the Urban Bus and Heavy-Duty Vehicle Classes,” adopted October 24, 2002, as last amended October 21, 2014, which are incorporated by reference herein.

* * * *

(h) The exhaust emissions from new:

(1) 1992 through 2004 model-year Otto-cycle engines used in incomplete medium-duty low-emission vehicles, ultra-low-emission vehicles, and super-ultra-low-emission vehicles from 8,501 to 14,000 pounds GVWR; and

(2) 1992 ~~and subsequent~~ through 2019 model diesel engines used in medium-duty low-emission vehicles, ultra-low-emission vehicles, and super-ultra-low-emission vehicles from 8,501 to 14,000 pounds GVWR, and 2020 through 2023 model diesel engines used in medium-duty ultra-low-emission vehicles, and super-ultra-low-emission vehicles from 10,001 to 14,000 pounds GVWR shall not exceed:

Exhaust Emission Standards for Engines Used in 1992 through 2004 Model Incomplete Otto-Cycle Medium-Duty Low-Emission Vehicles, Ultra-Low-Emission Vehicles, and Super Ultra-Low-Emission Vehicles, and 1992 and Subsequent through 2023 Model Diesel Engines Used in Medium-Duty Low-Emission Vehicles, Ultra-Low-Emission Vehicles, and Super Ultra-Low-Emission Vehicles ^{A,F}
(grams per brake horsepower-hour)

<i>Model Year</i>	<i>Vehicle Emissions Category^B</i>	<i>Carbon Monoxide</i>	<i>NMHC + NOx^C</i>	<i>Non-Methane Hydrocarbons</i>	<i>Oxides of Nitrogen</i>	<i>Formaldehyde</i>	<i>Particulates^D</i>
1992 ^E - 2001	LEV	14.4	3.5 ^K	n/a	n/a	0.050	0.10 ^K
2002-2003 ^E	LEV	14.4	3.0 ^K	n/a	n/a	0.050	0.10 ^K
1992-2003 ^{E,H}	ULEV	14.4	2.5 ^K	n/a	n/a	0.050	0.10 ^K
2004-2006 ^L	ULEV - Opt A	14.4	2.5 ^{I,J,K}	n/a	n/a	0.050	0.10 ^{J,K}
2004-2006 ^L	ULEV - Opt. B	14.4	2.4 ^{I,J,K}	n/a	n/a	0.050	0.10 ^{J,K}
2007 and subsequent through 2023 ^D (diesel only)	ULEV	15.5	n/a	0.14	0.20	0.050	0.01
1992-2006 ^L	SULEV	7.2	2.0 ^K	n/a	n/a	0.025	0.05 ^K
2007 and subsequent through 2023 ^D (diesel only)	SULEV	7.7	n/a	0.07	0.10	0.025	0.005

^A This set of standards is optional. For the 1992 through 2019 model years, manufacturers of engines used in incomplete medium-duty vehicles or diesel engines used in medium-duty vehicles from 8501-10,000 pounds gross vehicle weight rating may choose to comply with these standards as an alternative to the primary emission standards and test procedures specified in section 1960.1, section 1961, or section 1961.2, Title 13, California Code of Regulations. For the 1992 and subsequent through 2023 model years, manufacturers of engines used in incomplete medium-duty vehicles or diesel engines used in medium-duty vehicles from 10,001-14,000 pounds gross vehicle weight rating may choose to comply with these standards as an alternative to the primary emission standards and test procedures specified in section 1960.1, section 1961, or section 1961.2, Title 13, California Code of Regulations. For the 2020 and subsequent model years, both incomplete medium-duty vehicles and medium-duty vehicles that use a diesel engine 8,501 to 10,000 pounds GVW must certify to the primary emission standards and test procedures for complete vehicles specified in section 1961.2, title 13, CCR. Manufacturers that choose to comply with these optional heavy-duty standards and test procedures shall specify, in the application for certification, an in-use compliance test procedure, as provided in section 2139(c), Title 13, California Code of Regulations.

^B "LEV" means low-emission vehicle.

"ULEV" means ultra-low-emission vehicle.

"SULEV" means super ultra-low-emission vehicle.

^C This standard is the sum of the individual non-methane hydrocarbon emissions and oxides of nitrogen emissions. For methanol-fueled engines, non-methane hydrocarbons shall mean organic material hydrocarbon equivalent ("OMHCE").

^D These standards apply only to diesel engines and vehicles.

^E Manufacturers may certify engines used in incomplete medium-duty vehicles or diesel engines used in medium-duty vehicles to these standards to meet the requirements of section 1956.8(g), Title 13, California Code of Regulations.

^F In-use compliance testing shall be limited to vehicles or engines with fewer than 90,000 miles.

^G [Reserved]

^H For engines certified to the 3.5 grams per brake horsepower-hour (g/bhp-hr) LEV standards, the in-use compliance standard shall be 3.7 g/bhp-hr for the first two model years of introduction. For engines certified to the 2002 and 2003 model year LEV standards, the in-use compliance standard shall be 3.2 g/bhp-hr. For engines certified to the 1992 through 2003 model year ULEV standards, the in-use compliance standard shall be 2.7 g/bhp-hr for the first two model years of introduction. For engines certified to the 1992 ~~and subsequent~~ through 2023 SULEV standards, the in-use compliance standard shall be 2.2 g/bhp-hr for the first two model years of introduction.

^I Manufacturers have the option of certifying to either option A or B. Manufacturers electing to certify to Option A must demonstrate that the NMHC emissions do not exceed 0.5 g/bhp-hr.

^J Emissions averaging may be used to meet these standards for diesel engines, using the requirements for participation in averaging, banking and trading programs, as set forth in the "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles," incorporated by reference in section 1956.8 (b), above.

^K Engines of 1998 ~~and subsequent~~ through 2023 model years may be eligible to generate averaging, banking and trading credits based on these standards according to the requirements of the averaging, banking and trading programs described in the "California Exhaust Emission Standards and Test Procedures for 1985 through 2003 Model Heavy-Duty Engines and Vehicles" and the "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles," incorporated by reference in section 1956.8(b), above.

^L For the 2005 and 2006 model years, these emission standards only apply to diesel engines and vehicles.

(3) 2007 and later model year engines subject to (h)(2) have the following Phase-in Options.

(A) Early NOx compliant engines. For model years 2007, 2008, and 2009, a manufacturer may, at their option, certify one or more of their engine families to the combined NOx plus NMHC standard or FEL applicable to model year 2006 engines under section 1956.8(h)(2), in lieu of the separate NOx and NMHC standards or FELs applicable to the 2007 ~~and subsequent~~ through 2023 model years, specified in section 1956.8(h)(2). Each engine certified under this phase-in option must comply with all other emission requirements applicable to model year 2007 engines. To qualify for this option, a manufacturer must satisfy the U.S.-directed production requirement of certifying no more than 50 percent of engines to the NOx plus NMHC standards or FELs applicable to 2006 engines, as specified in 40 Code of Federal Regulations, part 86, section 86.007-11(g)(1), as adopted January 18, 2001. In addition, a manufacturer may reduce the quantity of engines that are required to be phased-in using the early certification credit program specified in 40 Code of Federal Regulations, part 86, section 86.007-11(g)(2), as adopted January 18, 2001, and the "Blue Sky" engine program specified in 40 Code of Federal Regulations, part 86, section 86.007-11(g)(4), as adopted January 18, 2001.

(B) Early PM compliant engines. A manufacturer certifying engines to the 2007 ~~and subsequent~~ through 2023 model year PM standard listed in section 1956.8 (h)(2) (without using credits, as determined in any averaging, banking, or trading program described in "California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles," to comply with the standards)

before model year 2007 may reduce the number of engines that are required to meet the 2007 ~~and subsequent~~ through 2023 model year PM standard listed in section 1956.8(h)(2) in model year 2007, 2008 and/or 2009. To qualify for this option, a manufacturer must satisfy the PM emission requirements pursuant to the methods detailed in 40 Code of Federal Regulations, part 86, section 86.007-11(g)(2)(ii), as adopted January 18, 2001.

(4) No crankcase emissions shall be discharged directly into the ambient atmosphere from any new 2007 or later model year diesel heavy-duty diesel engine, with the following exception: heavy-duty diesel engines equipped with turbochargers, pumps, blowers, or superchargers for air induction may discharge crankcase emissions to the ambient atmosphere if the emissions are added to the exhaust emissions (either physically or mathematically) during all emission testing. Manufacturers taking advantage of this exception must manufacture the engines so that all crankcase emission can be routed into a dilution tunnel (or other sampling system approved in advance by the Executive Officer), and must account for deterioration in crankcase emissions when determining exhaust deterioration factors. For the purpose of section 1956.8(h)(2), 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.”

(5) *Optional Standards for 2023 and Earlier Model Complete and Incomplete Heavy-Duty Vehicles that Use Heavy-Duty Diesel Engines. For 2023 and earlier model years only.* ~~M~~Manufacturers may request to group complete and incomplete heavy-duty diesel vehicles into the same test group as medium-duty diesel vehicles certifying to the LEV III exhaust emission standards and test procedures specified in title 13, CCR, §1961.2, so long as those complete and incomplete heavy-duty diesel vehicles meet the most stringent LEV III standards to which any vehicle within that test group certifies.

* * * *

(7) The exhaust emissions from new 2024 and subsequent model diesel engines used in medium-duty vehicles from 10,001 – 14,000 pounds GVWR, shall not exceed:

Exhaust Emission Standards for 2024 through 2026 Model Diesel Engines Used in Medium-Duty Vehicles from 10,001 – 14,000 pounds GVWR (g/bhp-hr)^A

<u>Test Procedure</u>	<u>Oxides of Nitrogen</u>	<u>Non-methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Particulates</u>	<u>Formaldehyde</u>
<u>FTP cycle</u>	<u>0.050</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>	<u>0.050</u>
<u>RMC cycle</u>	<u>0.050</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>	<u>0.050</u>
<u>Low-load cycle</u>	<u>0.200</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>	<u>0.050</u>

Exhaust Emission Standards for 2027 and Subsequent Model Diesel Engines Used in Medium-Duty Vehicles from 10,001 – 14,000 pounds GVWR (g/bhp-hr)^A

<u>Test Procedure</u>	<u>Oxides of Nitrogen</u>	<u>Non-methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Particulates</u>	<u>Formaldehyde</u>
<u>FTP cycle</u>	<u>0.020</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>	<u>0.050</u>
<u>RMC cycle</u>	<u>0.020</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>	<u>0.050</u>
<u>Low-load cycle</u>	<u>0.050</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>	<u>0.050</u>

^A A manufacturers of diesel engines used in medium-duty vehicles from 10,001-14,000 pounds gross vehicle weight rating may choose to comply with these standards as an alternative to the primary emission standards and test procedures specified in section 1961.2, title 13, CCR. A manufacturer that chooses to comply with these optional heavy-duty engine standards and test procedures shall specify, in the Part I application for certification, an in-use compliance test procedure, as provided in section 2139(c), title 13, CCR. An engine certified for use in a medium-duty vehicle shall not be used in a heavy-duty vehicle over 14,000 pounds GVWR.

* * * *

~~(i) Optional 50 State Directed Engine Emission Standards for New 2024 through 2026 Model Heavy Duty Diesel and Otto Cycle Engines.~~

~~(1) For a given model year, a manufacturer may participate in the optional standards for new 50 state directed 2024 through 2026 model diesel and Otto cycle heavy duty engines by complying with the requirements in subparagraphs (i)(1)(A), (i)(1)(B), and (i)(1)(C).~~

~~(A) In lieu of compliance with the requirements specified in subparagraph (a)(2)(C) for diesel engines used in heavy duty vehicles over 14,000 pounds GVWR, a manufacturer may optionally certify all its new 50 state directed diesel engines, not to exceed the following emission standards:~~

~~**Optional Exhaust Emission Standards for 50 State-Directed 2024 Through 2026 Model Heavy-Duty Diesel Engines Used in Vehicles over 14,000 Pounds GVWR (g/bhp-hr)**~~

<u>Test Procedure</u>	<u>Oxides of Nitrogen</u>	<u>Non-methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Particulates</u>
<u>FTP cycle</u>	<u>0.10</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>
<u>RMC cycle</u>	<u>0.10</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>
<u>Low-load cycle</u>	<u>0.30</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>

~~(B) In lieu of compliance with the requirements specified in subparagraphs (c)(1)(C) for Otto cycle heavy-duty engines, including engines used in incomplete medium-duty vehicles from 10,001 to 14,000 pounds GVWR, a manufacturer may optionally certify all its new 50-state-directed Otto cycle engines, not to exceed the following emission standards:~~

~~**Optional Exhaust Emission Standards for 50 State-Directed 2024 through 2026 Model Otto-Cycle Heavy-Duty Engines, Including Engines Used in Incomplete Medium-Duty Vehicles from 10,001-14,000 Pounds GVWR^A (g/bhp-hr)**~~

<u>Test Procedure</u>	<u>Model Year</u>	<u>Oxides of Nitrogen</u>	<u>Non-methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Particulates</u>	<u>Formaldehyde</u>
<u>FTP cycle</u>	<u>2024—2026</u>	<u>0.10</u>	<u>0.14</u>	<u>14.4</u>	<u>0.005</u>	<u>0.01</u>

~~^AA manufacturer of engines used in incomplete medium-duty vehicles from 10,001-14,000 pounds GVWR may choose to comply with these standards as an alternative to the primary emission standards and test procedures for complete vehicles specified in section 1961.2, title 13, CCR. A manufacturer that chooses to comply with these optional heavy-duty engine standards and test procedures shall specify, in the Part I application for certification, an in-use compliance test procedure, as provided in section 2139(e), title 13, CCR. An engine certified for use in a medium-duty vehicle shall not be used in a heavy-duty vehicle over 14,000 pounds GVWR.~~

~~(C) In lieu of compliance with the requirements specified in subparagraphs (h)(7) for diesel engines used in medium-duty vehicles from 10,001 to 14,000 pounds GVWR, a manufacturer may optionally certify all its new 50-state-directed diesel engines used in medium-duty vehicles from 10,001 to 14,000 pounds GVWR, not to exceed the following emission standards:~~

**Optional Exhaust Emission Standards for 50 State Directed 2024 through 2026
Model Diesel Engines Used in Medium Duty Vehicles from 10,001 – 14,000 pounds GVWR
(g/bhp-hr)^A**

<u>Test Procedure</u>	<u>Oxides of Nitrogen</u>	<u>Non-methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Particulates</u>	<u>Formaldehyde</u>
<u>FTP cycle</u>	<u>0.10</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>	<u>0.050</u>
<u>RMC cycle</u>	<u>0.10</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>	<u>0.050</u>
<u>Low load cycle</u>	<u>0.30</u>	<u>0.14</u>	<u>15.5</u>	<u>0.005</u>	<u>0.050</u>

~~^A A manufacturer of diesel engines used in medium duty vehicles from 10,001-14,000 pounds gross vehicle weight rating may choose to comply with these standards as an alternative to the primary emission standards and test procedures specified in section 1961.2, title 13, CCR. A manufacturer that chooses to comply with these optional heavy duty engine standards and test procedures shall specify, in the Part I application for certification, an in use compliance test procedure, as provided in section 2130(c), title 13, CCR. An engine certified for use in a medium duty vehicle shall not be used in a heavy duty vehicle over 14,000 pounds GVWR.~~

~~(2) ^A A manufacturer certifying to the Optional 50 State Directed Engine Emissions Standards specified in this subparagraph (i) has the option but is not subject to certifying any engine family to the standards in subparagraphs (a)(2)(C), (a)(2)(D), (c)(1)(C), and (h)(7) for the model year the manufacturer seeks certification.~~

~~(3) A manufacturer that chooses to participate in the Optional 50 State Directed Engine Emissions Standards must forgo any credits generated from the U.S. directed production volume.~~

~~(4) A manufacturer participating in the Optional 50 State Directed Engine Emission Standards program must comply with all applicable model year requirements under title 13, CCR, sections 1956.8, 1968.2, 1971.1, 2035, 2036, 2112, and 2130.~~

~~(5) A manufacturer who violates the requirement to certify all diesel and Otto cycle engines produced by the manufacturer to the Optional 50 State Directed Engine Emission Standards in a given model year may not participate in the Optional 50 State Directed Engine Emission Standards for any model years following the model year for which the violation was found.~~

~~(i)(i) **Severability:** If any provision of this section is held to be invalid or unenforceable by any court of competent jurisdiction, such invalidity shall not affect any provisions of this section that can be effected without the invalid provision.~~

~~(i)(k)(i) Definitions Specific to this Section. The following definitions apply to this section 1956.8.~~

~~(1) “Active Bus” has the same meaning as defined in 13 CCR section 2023 (b)(1).~~

~~(2) “Bus” has the same meaning as defined in 13 CCR 2023(b)(6).~~

(3) “Bus purchase” or “Purchase” has the same meaning as defined in 13 CCR section 2023(b)(7).

~~(44)~~ “Certified emission level” means the highest deteriorated emission level in an engine family for a given pollutant from the applicable transient and/or steady-state testing, rounded to the same number of decimal places as the applicable standard. Note that there may be two certified emission levels for CO₂ if a family is certified for both vocational and tractor use.

(5) “Exempt bus” refers to a bus that is equipped with a 2022 and subsequent model year diesel-fueled heavy-duty engine that is certified to both the federal emission standards for 2010 and later model year diesel heavy-duty engines and vehicles as set forth in title 40, Code of Federal Regulations section 86.007-11, as last amended Oct. 25, 2016, and the federal Greenhouse Gas Emissions and Fuel Economy Standards for Medium- and Heavy-Duty Engines and Vehicles – Phase 2 requirements promulgated at 81 Fed. Reg. 73,478 (October 25, 2016), which are incorporated by reference herein.

~~(26)~~ “Family certification level” (FCL) means a CO₂ emission level declared by the manufacturer that is at or above emission test results for all emission-data engines. The FCL serves as the emission standard for the engine family with respect to certification testing if it is different than the otherwise applicable standard. The FCL must be expressed to the same number of decimal places as the emission standard it replaces.

~~(37)~~ “Family emission limit” (FEL) means an emission level declared by the manufacturer to serve in place of an otherwise applicable emission standard (other than CO₂ standards) under the Average, Banking, and Trading Program. The FEL must be expressed to the same number of decimal places as the emission standard it replaces. The FEL serves as the emission standard for the engine family with respect to all required testing except certification testing for CO₂. The CO₂ FEL is equal to the CO₂ FCL multiplied by 1.03 and rounded to the same number of decimal places as the standard (e.g., the nearest whole g/hp-hr for the 2016 CO₂ standards).

(48) “Heavy-Duty Transient Federal Test Procedure” or “FTP cycle” means the test procedure specified in 40 CFR §86.007-11(a)(2), as amended October 25, 2016 for heavy-duty diesel engines, and the test procedure specified in 40 CFR §86.008-10(a)(2), as amended on October 25, 2016, for heavy-duty Otto-cycle engines.

~~(4)(59)~~ “Heavy heavy-duty engine” means an engine used in a vehicle that normally exceeds 33,000 pounds GVWR. Heavy heavy-duty engines are designed for multiple rebuilds and have cylinder liners. Vehicles in this group are normally tractors, trucks, straight trucks with dual rear axles, and buses used in inter-city, long-haul applications. Otto-cycle engines that are best characterized by this definition share a primary intended service class with diesel heavy heavy-duty engines. However, gasoline-fueled engines are presumed not to be characterized by this definition; for example, vehicle manufacturers may install some number of gasoline-fueled engines in vehicles with a GVWR that is above 33,000 pounds without causing the engine manufacturer to consider those to be heavy heavy-duty engines.

(610) “Hybrid powertrain or optionally certified hybrid powertrain” means a group of components that includes an engine, electric motor-generator system, rechargeable energy storage system other than a conventional battery system or conventional flywheel, battery management system, including charge controller and thermal management systems and associated power electronics. Transmissions, final drives and drive shafts may be included as powertrain components if specified by the hybrid powertrain manufacturer. Supplemental electrical batteries and hydraulic accumulators are examples of hybrid energy storage systems. Note other examples of systems that qualify as hybrid engines or powertrains are systems that recover kinetic energy and use it to power an electric heater in the aftertreatment.

(11) “Intermediate useful life” means the period of use of 435,000 miles or 8 years or 22,000 hours, whichever first occurs, applicable for the intermediate emission standards for oxides of nitrogen for 2027 and subsequent model year heavy heavy-duty diesel engines.

(12) “Intermediate useful life NOx standard” means the emissions standards for oxides of nitrogen applicable to the intermediate useful life for 2027 and subsequent model year heavy heavy-duty diesel engines.

(13) “Legacy engine family” means an engine family certified under the provisions of title 13, CCR, Section 1956.8(a)(2)(C)3.

(5)(~~713~~14) “Light heavy-duty engine” means an engine used in a vehicle that is normally at or below 19,500 pounds GVWR. Light heavy-duty engines usually are not designed for rebuild and do not have cylinder liners. Vehicle body types in this group might include any heavy-duty vehicle built for a light-duty truck chassis, van trucks, multi-stop vans, and some straight trucks with a single rear axle. Typical applications would include personal transportation, light-load commercial delivery, passenger service, agriculture, and construction.

(~~814~~15) “Low-load cycle” means the emission test procedure with the low-load cycle according to section I.11.B.8 of the California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles, incorporated by reference in subsection (b).

(6)(~~915~~16) “Medium heavy-duty engine” means an engine used in a vehicle that is normally between 19,501 to 33,000 pounds GVWR. Medium heavy-duty engines may be designed for rebuild and may have cylinder liners. Vehicle body types in this group would typically include school buses, straight trucks with single rear axles, city tractors, and a variety of special purpose vehicles such as small dump trucks, and refuse trucks. Typical applications would include commercial short haul and intra-city delivery and pickup.

(~~16~~17) “NOx exempt areas” has the same meaning as defined in 13 CCR section 2023(b)(39).

(7)(~~1017~~18) “Primary intended service class” means the class that best describes the vehicle for which the manufacturer designs and markets the engine. The three primary intended service classes are light heavy-duty, medium heavy-duty, and heavy heavy-duty.

~~(11)1819~~ “Ramped Modal Cycle” or “RMC cycle” means the supplemental emission test procedure with the steady-state cycle in 40 CFR §86.1360, as amended October 25, 2016.

~~(8)(12)1920~~ “Tractor” means a vehicle meeting the definition of “tractor” in 40 CFR §1037.801, as amended October 25, 2016, but not classified as a “vocational tractor” under 40 CFR §1037.630, as amended October 25, 2016, or relating to such a vehicle.

~~(9)(13)2021~~ “Tractor engine” means an engine certified for use in tractors. Where an engine family is certified for use in both tractors and vocational vehicles, “tractor engine” means an engine that the engine manufacturer reasonably believes will be (or has been) installed in a tractor. Note that the Executive Officer may require a manufacturer to document how it determines that an engine is a tractor engine.

~~(14)2122~~ “Test Procedure” means all aspects of engine testing including but not limited to the cycle, preconditioning procedures, equipment specifications, calibrations, calculations and other protocols and specifications needed to measure emissions.

~~(2223)~~ “Transit Agency” has the same meaning as defined in 13 CCR section 2023(b)(51)

~~(2324)~~ “Urban Bus” has the same meaning as defined in 40 CFR 86.092-21

~~(10)(15)2425~~ “Vocational engine” means an engine certified for use in vocational vehicles. Where an engine family is certified for use in both tractors and vocational vehicles, “vocational engine” means an engine that the engine manufacturer reasonably believes will be (or has been) installed in a vocational vehicle. Note that the provisions of this part may require a manufacturer to document how it determines that an engine is a vocational engine.

~~(11)(16)2526~~ “Vocational vehicle” means a vehicle meeting the definition of “vocational” vehicle in 40 CFR §1037.801, as amended October 25, 2016.

~~(12)(17)2627~~ “Zero-emission powertrain” means an all-electric or hydrogen fuel-cell powertrain assembly, which includes (if applicable) the electric traction motor, system controller, generator, on-board charger, battery management system, thermal management systems, energy storage system (batteries, capacitors, and flywheels), inverter, fuel-cell stack, and the interface at which electrical power is converted to tractive mechanical power or vice-versa (in the case of a regenerative braking system), certified pursuant to the requirements in subsection (a)(8).

~~(18) “50 state directed engines” means the entire volume of new heavy-duty Otto cycle and diesel engines produced by a manufacturer and intended for sale in the United States of America in a given model year, from 2024 through 2026 model years, used in medium-duty vehicles from 10,001 – 14,000 pounds GVWR, heavy-duty vehicles over 14,000 pounds GVWR, and hybrid powertrains that are certified to the standards and test procedures of title 13, CCR, section 1956.8.~~

Note: Authority cited: Sections 38501, 38505, 38510, 38560, 38580, 39500, 39600, 39601, 40000, 43013, 43018, 43100, 43101, 43102, 43104, 43105, 43106 and 43806, Health and Safety Code; and Section

28114, Vehicle Code. Reference: Sections 38501, 38505, 38510, 38560, 38580, 39002, 39003, 39010, 39017, 39033, 39500, 39600, 39601, 39610, 39650, 39657, 39667, 39701, 40000, 43000, 43000.5, 43009, 43009.5, 43013, 43017, 43018, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43202, 43204, 43205, 43205.5, 43206, 43210, 43211, 43212, 43213 and 43806, Health and Safety Code; and Section 28114, Vehicle Code.

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

* * * *

§ 1965. Emission Control, Smog Index, and Environmental Performance Labels - 1979 and Subsequent Model-Year Motor Vehicles.

* * * *

§1968.2. Malfunction and Diagnostic System Requirements--2004 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines

* * * *

§1971.1. On-Board Diagnostic System Requirements--2010 and Subsequent Model-Year Heavy-Duty Engines

* * * *

§ 1971.5. Enforcement of Malfunction and Diagnostic System Requirements for 2010 and Subsequent Model-Year Heavy-Duty Engines.

* * * *

§ 2035. Purpose, Applicability, and Definitions.

* * * *

§ 2036. Defects Warranty Requirements for 1979 Through 1989 Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles; 1979 and Subsequent Model Motorcycles and Heavy-Duty Vehicles; and Motor Vehicle Engines Used in Such Vehicles; and 2020 and Subsequent Model Year Trailers.

* * * *

§ 2111. Applicability.

* * * *

§ 2112. Definitions.

(a) "Capture rate" means the percentage of in-use vehicles or trailers subject to recall which must be corrected to bring the class or category of vehicles or trailers into

compliance. The number of vehicles or trailers subject to recall shall be based on the actual number of vehicles or trailers in use as verified by the Department of Motor Vehicles registration records, or vehicle, ~~or engine,~~ or trailer registration records compiled and prepared by R. L. Polk and Company or a comparable source at the time a recall is initiated.

(b) “Correlation factor” means a pollutant-specific multiplicative factor calculated by a manufacturer for an engine family or test group which establishes a relationship between chassis exhaust emission data, as determined from the test procedures specified in section 1960.1, 1961, or 1961.2, Title 13, California Code of Regulations, and engine exhaust emission data, as determined from the test procedures specified in section 1956.8, Title 13, California Code of Regulations.

(c) “Days”, when computing any period of time, means normal working days on which a manufacturer is open for business, unless otherwise noted.

(d) “Emission-Related Failure” means a failure of a device, system, or assembly described in the approved application for certification which affects any parameter, specification, or component enumerated in Appendix A to this subchapter 2.5 or in 40 CFR 1037.120, last amended on October 25, 2016, incorporated by reference herein, or listed in the Emission Warranty Parts List pursuant to section 2036, Title 13, California Code of Regulations, except for failures of devices, systems and assemblies which the Executive Officer has deleted from the manufacturer's list of warranted parts pursuant to section 2036 (f), Title 13, California Code of Regulations.

(e) “Emission Warranty Claim” means an adjustment, inspection, repair or replacement of a specific emission-related component for which the vehicle, ~~or engine,~~ or trailer manufacturer is invoiced or solicited by a repairing agent for compensation pursuant to warranty provisions, regardless of whether compensation is actually provided.

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

(g) “Influenced Emission Recall” means an inspection, repair, adjustment, or modification program initiated and conducted by a manufacturer or its agent or representative as a result of in-use enforcement testing or other evidence of noncompliance provided or required by the Board, to remedy any nonconformity for which direct notification of vehicle, ~~or engine,~~ or trailer owners is necessary.

(h) “Nonconformity” or “noncompliance” exists whenever:

(1) a substantial number of a class or category of vehicles, ~~or engines,~~ or trailers, although properly maintained and used, experience a failure of the same emission-related component within their useful lives which, if uncorrected, results in the vehicles', ~~or engines',~~ or trailers' failure to meet the applicable standards; or

(2) a class or category of vehicles, ~~or engines, or trailers~~ within their useful lives, although properly maintained and used, on average does not comply with the emission standards prescribed under section 43101 of the Health and Safety Code which are applicable to the model-year of such vehicles, ~~or engines, or trailers~~.

(3) a class or category of vehicles or engines within their useful lives, although properly maintained and used, that do not comply with the in-use emission standards specified in section 1956.8, Title 13, California Code of Regulations and “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles”, incorporated by reference in section 1956.8(b), Title 13, California Code of Regulations.

(4) a class or category of vehicles or engines within their useful lives, although properly maintained and used, that do not comply with the in-use emission standards specified in section 1956.8, Title 13, California Code of Regulations and “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles”, incorporated by reference in section 1956.8(d), Title 13, California Code of Regulations.

(i) “Ordered Emission Recall” means an inspection, repair, adjustment, or modification program required by the Board and conducted by the manufacturer or its agent or representative to remedy any nonconformity for which direct notification of vehicle, ~~or engine, or trailer~~ owners is necessary.

* * * *

(l) “Useful life” means, for the purposes of this article:

* * * *

(9) For 2001 through 2019 model year medium-duty low-emission, ultra-low-emission and super-ultra-low-emission vehicles certified to the primary standards in section 1961(a)(1), and motor vehicle engines used in such vehicles, a period of use of ten years or 120,000 miles, whichever occurs first. For 2001 through 2019 medium-duty low-emission, ultra-low-emission and super-ultra-low-emission vehicles certified to the optional 150,000 mile standards in section 1961(a)(1), and motor vehicle engines used in such vehicles, a period of use of fifteen years or 150,000 miles, whichever occurs first. For all other 1995 ~~and subsequent~~ through 20222023 model-year medium-duty vehicles and motor vehicle engines used in such vehicles, and 1992 through 1994 model-year medium-duty low-emission and ultra-low-emission vehicles certified to the standards in Section 1960.1(h)(2), and motor vehicle engines used in such vehicles, a period of use of eleven years or 120,000 miles, whichever occurs first.

* * * *

(18) For those passenger cars, light-duty trucks, and medium-duty vehicles certified to the standards in section 1961.2 or 1961.3, the useful life shall be ~~fifteen~~ 15 years or 150,000 miles, whichever ~~occurs~~ first occurs. ~~For 20232024 and~~

subsequent model-year engines certified to the standards in section 1956.8 for use in medium-duty vehicles with a GVWR from 10,001 to 14,000 pounds certified to the standards in section 1961.2, the useful life shall be 15 years or 150,000 miles, whichever first occurs.

(19)(A) For 2004 and subsequent through 2026 model-year light heavy-duty diesel engines, except ~~2023~~2024 through 2026 model-year engines used in medium-duty vehicles with a GVWR from 10,001 to 14,000 pounds, for carbon monoxide, particulate, and oxides of nitrogen plus non-methane hydrocarbons emissions standards, a period of use of 10 years or 110,000 miles, whichever first occurs, or any alternative useful life period approved by the Executive Officer.

(B) For 2027 through 2030 model-year light heavy-duty diesel engines used in heavy-duty vehicles with a GVWR greater than 14,000 pounds, for carbon monoxide, particulate, oxides of nitrogen, and non-methane hydrocarbons emissions standards, a period of use of 12 years or 190,000 miles, whichever first occurs.

(C) For 2031 and subsequent model-year light heavy-duty diesel engines used in heavy-duty vehicles with a GVWR greater than 14,000 pounds, for carbon monoxide, particulate, oxides of nitrogen, and non-methane hydrocarbons emissions standards, a period of use of 15 years or 270,000 miles, whichever first occurs.

(D) For ~~2023~~2024 and subsequent model-year diesel engines used in medium-duty vehicles with a GVWR from 10,001 to 14,000 pounds, see subparagraph (I)(18) of this section.

* * * *

(20)(A) For 2004 and subsequent through 2026 model-year medium heavy-duty diesel engines, for carbon monoxide, particulate, and oxides of nitrogen plus non-methane hydrocarbons emissions standards, a period of use of ~~ten~~ 10 years or 185,000 miles, whichever first occurs; or any alternative useful life period approved by the Executive Officer.

(B) For 2027 through 2030 model-year medium heavy-duty diesel engines, for carbon monoxide, particulate, oxides of nitrogen, and non-methane hydrocarbons emissions standards, a period of use of 11 years or 270,000 miles, whichever first occurs.

(C) For 2031 and subsequent model-year medium heavy-duty diesel engines, for carbon monoxide, particulate, oxides of nitrogen, and non-methane hydrocarbons emissions standards, a period of use of 12 years or 350,000 miles, whichever first occurs.

* * * *

(21)(A) For 2004 and subsequent through 2026 model-year heavy heavy-duty diesel engines, 2004 and subsequent through 2026 model-year heavy-duty diesel urban buses, 2004 and subsequent through 2026 model-year heavy-duty diesel engines to be used in urban buses, and 2004 and subsequent through 2026 model year hybrid-electric urban buses for carbon monoxide, particulate, and oxides of nitrogen plus non-methane hydrocarbon emissions standards, a period of use of 10 years or 435,000 miles, or 22,000 hours, whichever first occurs, or any alternative useful life period approved by the Executive Officer, except as provided in paragraphs (21)(A)(i) and (21)(A)(ii).

(A)(i) The useful life limit of 22,000 hours in paragraph ~~(19)~~ (21)(A) of this definition is effective as a limit to the useful life only when an accurate hours meter is provided by the manufacturer with the engine and only when such hours meter can reasonably be expected to operate properly over the useful life of the engine.

(B)(ii) For an individual engine, if the useful life hours limit of 22,000 hours is reached before the engine reaches 10 years or 100,000 miles, the useful life shall become 10 years or 100,000 miles, whichever ~~occurs~~ first occurs, as required under Clean Air Act section 202(d) (42 U.S.C. 7521(d)).

(B) For 2027 through 2030 model-year heavy heavy-duty diesel engines, 2027 through 2030 model-year heavy-duty diesel urban buses, 2027 through 2030 model-year heavy-duty diesel engines to be used in urban buses, and 2027 through 2030 model year hybrid-electric urban buses for carbon monoxide, particulate, oxides of nitrogen, and non-methane hydrocarbons emissions standards, a period of use of 11 years or 600,000 miles, or 30,000 hours, whichever first occurs, except as provided in paragraphs (21)(B)(i) and (21)(B)(ii).

(i) The useful life limit of 30,000 hours in paragraph (21)(B) of this definition is effective as a limit to the useful life only if the manufacturer equips the engine with an hours meter that accurately records and reports the hours that the engine is operated throughout its useful life. The hours meter shall not count standby-idle time (key-on, engine off) as engine operating time for purposes of identifying the end of the useful life period, such as on a vehicle equipped with stop-start technology.

(ii) For an individual engine, if the useful life hours limit of 30,000 hours is reached before the engine reaches 11 years or 450,000 miles, the useful life shall become 11 years or 450,000 miles, whichever first occurs.

(C) For 2031 and subsequent model-year heavy heavy-duty diesel engines, 2031 and subsequent model-year heavy-duty diesel urban buses, 2031

and subsequent model-year heavy-duty diesel engines to be used in urban buses, and 2031 and subsequent model year hybrid-electric urban buses for carbon monoxide, particulate, oxides of nitrogen, and non-methane hydrocarbons emissions standards, a period of use of 12 years or 800,000 miles, or 40,000 hours, whichever first occurs, except as provided in paragraphs (21)(C)(i) and (21)(C)(ii).

(i) The useful life limit of 40,000 hours in paragraph (21)(C) of this definition is effective as a limit to the useful life only if the manufacturer equips the engine with an hours meter that accurately records and reports the hours that the engine is operated throughout its useful life. The hours meter shall not count standby-idle time (key-on, engine off) as engine operating time for purposes of identifying the end of the useful life period, such as on a vehicle equipped with stop-start technology.

(ii) For an individual engine, if the useful life hours limit of 40,000 hours is reached before the engine reaches 12 years or 600,000 miles, the useful life shall become 12 years or 600,000 miles, whichever first occurs.

* * * *

(22)(A) For 2004 and subsequent through 2026 model-year heavy-duty Otto-cycle engines, except ~~2023~~ 2024 through 2026 model-year engines used in medium-duty vehicles with a GVWR from 10,001 to 14,000 pounds, for carbon monoxide, particulate, and oxides of nitrogen plus non-methane hydrocarbon emissions standards, a period of use of 10 years or 110,000 miles, whichever first occurs.

(B) For 2027 through 2030 model-year heavy-duty Otto-cycle engines used in heavy-duty vehicles with a GVWR greater than 14,000 pounds, for carbon monoxide, particulate, oxides of nitrogen, and non-methane hydrocarbon emissions standards, a period of use of 12 years or 155,000 miles, whichever first occurs.

(C) For 2031 and subsequent model-year heavy-duty Otto-cycle engines used in heavy-duty vehicles with a GVWR greater than 14,000 pounds, for carbon monoxide, particulate, oxides of nitrogen, and non-methane hydrocarbon emissions standards, a period of use of 15 years or 200,000 miles, whichever first occurs.

(D) For ~~2023~~ 2024 and subsequent model-year Otto-cycle engines used in medium-duty vehicles with a GVWR from 10,001 to 14,000 pounds, see subparagraph-(l)(18) of this section.

(23) For 2022 and subsequent model year hybrid powertrains optionally certified pursuant to title 13, CCR §1956.8, for carbon monoxide, particulate, oxides of nitrogen, and non-methane hydrocarbons emissions standards:

(A) For diesel hybrid powertrains primarily used in vehicles with a GVWR from 14,001 to 19,500 pounds, the periods of use and model year implementation schedules for light heavy-duty diesel engines in §2112 (l)(19) shall apply to the hybrid powertrains.

(B) For diesel hybrid powertrains primarily used in vehicles with a GVWR from 19,501 to 33,000 pounds, the periods of use and model year implementation schedules for medium heavy-duty diesel engines in §2112 (l)(20) shall apply to the hybrid powertrains.

(C) For diesel hybrid powertrains primarily used in vehicles with a GVWR greater than 33,000 pounds, the periods of use and model year implementation schedules for heavy heavy-duty diesel engines in §2112 (l)(21) shall apply to the hybrid powertrains.

(D) For Otto-cycle hybrid powertrains used in vehicles with a GVWR greater than 14,000 pounds, the periods of use and model year implementation schedules for heavy-duty engines in §2112 (l)(22) shall apply to the hybrid powertrains.

(E) In the case of diesel hybrid powertrains used in incomplete vehicles with a GVWR from 10,001 to 14,000 pounds, the periods of use and model year implementation schedules for heavy-duty engines in §2112 (l)(18) or §2112 (l)(19), as applicable, shall apply to the hybrid powertrains.

(F) In the case of Otto-cycle hybrid powertrains used in incomplete vehicles with a GVWR from 10,001 to 14,000 pounds, the periods of use and model year implementation schedules for heavy-duty engines in §2112 (l)(22) shall apply to the hybrid powertrains.

* * * *

(m) “Vehicle, ~~or engine, or trailer~~ manufacturer” means the manufacturer granted certification for a motor vehicle, ~~or motor vehicle engine, or trailer.~~

(n) “Voluntary Emission Recall” means an inspection, repair, adjustment, or modification program voluntarily initiated and conducted by a manufacturer or its agent or representative to remedy any nonconformity for which direct notification of vehicle, ~~or engine, or trailer~~ owners is necessary.

(o) “Trailer” has the same definition as that in section 95662(a), title 17, California Code of Regulations.

* * * *

Note: Authority cited: Sections 38501, 38505, 38510, 38560, 39010, 39600, 39601, 43013, 43018, 43101, 43104, 43105 and 43806, Health and Safety Code; and Section 28114, Vehicle Code. Reference: Sections 38501, 38505, 38510, 38560, 39002, 39003, 39010, 39500, 39601, 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.

§ 2113. Initiation and Approval of Voluntary and Influenced Emission-Related Recalls.

* * * *

§ 2114. Voluntary and Influenced Recall Plans.

* * * *

§ 2115. Eligibility for Repair.

* * * *

§ 2116. Repair Label.

* * * *

§ 2117. Proof of Correction Certificate.

* * * *

§ 2118. Notification.

* * * *

§ 2119. Recordkeeping and Reporting Requirements.

* * * *

§ 2121. Penalties.

* * * *

§ 2123. Initiation and Notification of Ordered Emission-Related Recalls.

* * * *

§ 2125. Ordered Recall Plan.

* * * *

§ 2126. Approval and Implementation of Recall Plan.

* * * *

§ 2127. Notification of Owners.

* * * *

§ 2128. Repair Label.

* * * *

§ 2129. Proof of Correction Certificate.

* * * *

§ 2130. Capture Rates and Alternative Measures.

* * * *

§ 2131. Preliminary Tests.

* * * *

§ 2133. Recordkeeping and Reporting Requirements.

* * * *

§ 2137. Vehicle, and Engine, and Trailer Selection.

* * * *

§ 2139. Testing.

* * * *

§ 2139.5. CARB Authority to Test for Heavy-Duty In-Use Compliance

* * * *

§ 2140. Notification and Use of Test Results.

* * * *

§ 2141. General Provisions.

* * * *

§ 2142. Alternative Procedures.

* * * *

§ 2143. Failure Levels Triggering Recall and Corrective Action.

* * * *

§ 2144. Emission Warranty Information Report.

* * * *

§ 2145. Field Information Report.

* * * *

§ 2146. Emissions Information Report.

* * * *

§ 2147. Demonstration of Compliance with Emission Standards.

* * * *

§ 2148. Evaluation of Need for Recall.

* * * *

§ 2149. Notification and Subsequent Action.

* * * *

§ 2166. General Provisions.

* * * *

§ 2166.1. Definitions.

* * * *

§ 2167. Required Recall and Corrective Action for Failures of Exhaust After-Treatment Devices, On-Board Computers or Systems, Urea Dosers, Hydrocarbon Injectors, Exhaust Gas Recirculation Valves, Exhaust Gas Recirculation Coolers, Turbochargers, Fuel Injectors.

* * * *

§ 2168. Required Corrective Action and Recall for Emission-Related Component Failures

* * * *

§ 2169. Required Recall or Corrective Action Plan.

* * * *

§ 2169.1. Approval and Implementation of Corrective Action Plan.

* * * *

§ 2169.2. Notification of Owners.

* * * *

§ 2169.3. Repair Label.

* * * *

§ 2169.4. Proof of Correction Certificate.

* * * *

§ 2169.5. Preliminary Tests.

* * * *

§ 2169.6. Communication with Repair Personnel.

* * * *

§ 2169.7. Recordkeeping and Reporting Requirements.

* * * *

§ 2169.8. Extension of Time.

* * * *

§ 2170. Penalties.

* * * *

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

* * * *

**§ 2485. Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor
Vehicle Idling.**

* * * *