13 CA ADC § 1956.8

Term

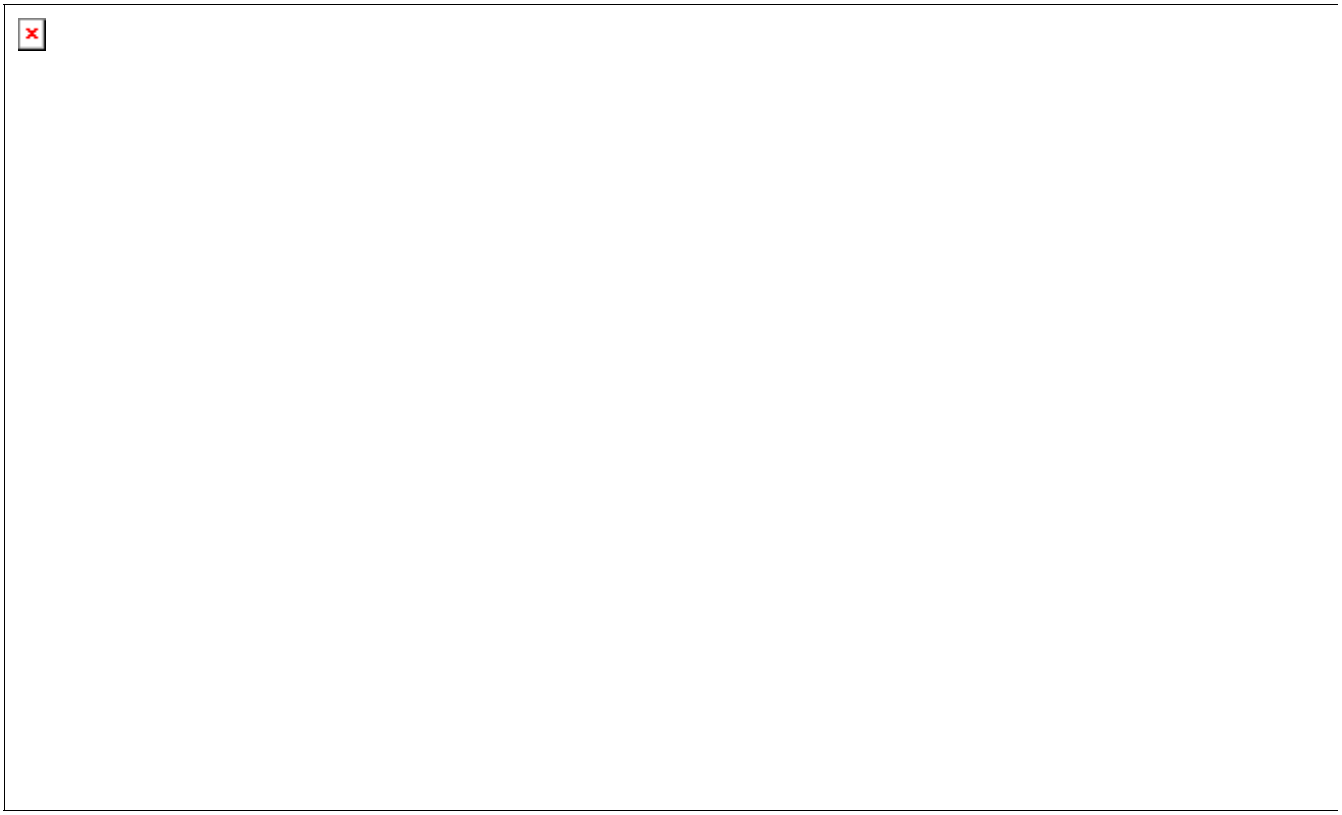
13 CCR s 1956.8

Cal. Admin. Code tit. 13, s 1956.8

BARCLAYS OFFICIAL CALIFORNIA CODE OF REGULATIONS
TITLE 13. MOTOR VEHICLES
DIVISION 3. AIR RESOURCES BOARD
CHAPTER 1. MOTOR VEHICLE POLLUTION CONTROL DEVICES
ARTICLE 1. GENERAL PROVISIONS
This database is current through 6/08/07, Register 2007, No. 23

s 1956.8. Exhaust Emissions Standards and Test Procedures -1985 and Subsequent Model Heavy-Du Engines and Vehicles.

(a)(1) The exhaust emissions (i) from new 1985 through 2003 model heavy-duty diesel engines (except methanol-fueled engines), and heavy-duty natural-gas-fueled and liquefied-petroleum-gas-fueled engines deri from diesel-cycle engines, and (ii) from all new 1993 through 2003 model heavy-duty methanol-fueled, diesel engines, except in all cases engines used in medium-duty vehicles, shall not exceed:



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Exhaust Emission Standards
For 1985-2003 Model Heavy-Duty Engines Other than Urban Bus Engines
(grams per brake horsepower-hour [g/bhp-hr])

Model Year	Total Hydrocarbons or OMHCE [FNA]	Optional Non-methane Hydrocarbons [FNA]	Carbon Monoxide	Oxides of Nitrogen	Particulates
1985-1986	1.3		15.5	5.1	-
1987 [FNB]	1.3		15.5	5.1	-
1988-1989	1.3		15.5	6.0	0.60
1990	1.3	1.2	15.5	6.0	0.60
1991-1993 [FNC]	1.3	1.2	15.5	5.0	0.25 [FND]
1994-1997	1.3	1.2	15.5	5.0	0.10 [FND]
1995-1997 [FNE]	1.3	1.2	15.5	3.5 to 0.5	0.10
1998-2003 [FNF] [FNH]	1.3	1.2	15.5	4.0 [FNG],	0.10 [FNG]
1998-2003 [FNE] [FNI]	1.3	1.2	15.5	2.5 to 0.5	0.10

[FNA] The total or optional non-methane hydrocarbon standards apply to petroleum-fueled, natural gas-fueled and liquefied-petroleum-gas-fueled engines. The Organic Material Hydrocarbon Equivale or OMHCE, standards apply to methanol-fueled engines.

[FNB] As an option a manufacturer may elect to certify to the 1988 model-year emission standards one year early, for the 1987 model year.

[FNC] For methanol-fueled engines, these standards shall be applicable beginning with the 1993 mo year.

[FND] Emissions averaging may be used to meet this standard. Averaging is restricted to within eac useful life subclass and is applicable only through the 1995 model year. Emissions from engines use in urban buses shall not be included in the averaging program.

[FNE] These are optional standards. A manufacturer may elect to certify to an optional NOx standar between the values, inclusive, by 0.5 grams per brake horsepower-hour increments. Engines certifi to any of these optional NOx standards are not eligible for participation in any averaging, banking o trading programs described in "California Exhaust Emission Standards and Test Procedures for 198 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles" incorporated by reference in (b), below.

[FNF] These are mandatory standards.

[FNG] Engines of 1998 through 2003 model years may be eligible to generate banking credits base on these standards according to the requirements of the averaging, banking and trading programs described in "California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles" incorporated by reference in (b), below.

[FNH] May be used as the certification standard for the higher emitting fueling mode of an engine certified under the dual fueling mode certification process of (a)(3)(4), below.

[FNI] May be used as the certification standard for the lower emitting fueling mode of an engine certified under the dual fueling mode certification process of (a)(3)(4), below.

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(2)(A) The exhaust emissions from new 2004 and subsequent model heavy-duty diesel engines, hea duty natural gas-fueled and liquefied-petroleum-gas-fueled engines derived from diesel-cycle engine and heavy-duty methanol-fueled diesel engines, and the optional, reduced-emission standards for 20 and subsequent model engines produced beginning October 1, 2002, except in all cases engines use in medium-duty vehicles, shall not exceed:

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(B)Phase-in Options.

1.Early NOx compliant engines. For model years 2007, 2008, and 2009, a manufacturer may, at thei 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 a NMHC standards or FELs applicable to the 2007 and subsequent model years, specified in section 1956.8 (a)(2)(A). Each engine certified under this phase-in option must comply with all other emissi 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 Federa 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 model year PM standard listed in section 1956.8(a)(2)(A) (without using credits, as determined any averaging, banking, or trading program described in "California Exhaust Emission Standard and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles," comply with the standards) before model year 2007 may reduce the number of engines that ar required to meet the 2007 and subsequent model year PM standard listed in section 1956.8(a)((A) in model year 2007, 2008 and/or 2009. To qualify for this option, a manufacturer must sati 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.

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

Model Year	Formaldehyde (g/bhp-hr)
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 an 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 th 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 footnot 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 (1) and footnote F in paragraph (a)(2).

(C) The engine family is not used to participate in any manufacturer's averaging, banking or tradi 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, a 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 f deterioration in crankcase emissions when determining exhaust deterioration factors. For the purpos 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.

(A) Engine Shutdown System. The requirements in this subsection apply to engine manufacturers and original equipment manufacturers, as applicable, that are responsible for the design and contr of engine and/or vehicle idle controls.

1. Requirements.Except as provided in subsections (a)(6)(B) and (a)(6)(C), all new 2008 and subsequent model-year heavy-duty diesel engines shall be equipped with an engine shutdown system that automatically shuts down the engine after 300 seconds of continuous idling operati once the vehicle is stopped, the transmission is set to "neutral" or "park", and the parking brak is engaged. If the parking brake is not engaged, then the engine shutdown system shall shut down the engine after 900 seconds of continuous idling operation once the vehicle is stopped a the transmission is set to "neutral" or "park." The engine shutdown system must be tamper-resistant and non-programmable. A warning signal, such as a light or sound indicator inside the vehicle cabin, may be used to alert the driver 30 seconds prior to engine shutdown. The engine shutdown system must be capable of allowing the driver to reset the engine shutdown system timer by momentarily changing the position of the accelerator, brake, or clutch pedal, or other mechanism within 30 seconds prior to engine shutdown. Once reset, the engine shutdown syste shall restart the engine shutdown sequence described in this paragraph above, and shall contin to do so until the engine shuts down or the vehicle is driven.

2. Engine Shutdown System Override.The engine shutdown system may be overridden, to allov the engine to run continuously at idle, only under the following conditions:

a. If the engine is operating in power take-off (PTO) mode. The PTO system shall have a swi or a setting that can be switched "on" to override the engine shutdown system and will reset the "off" position when the vehicle's engine is turned off or when the PTO equipment is turne off. Subject to advance Executive Officer approval, other methods for detecting or activating PTO operation may be allowed; or,

b. if the vehicle's engine coolant temperature is below 60 <<degrees>> F. The engine shutdown system shall automatically be activated once the coolant temperature reaches 60 <<degrees>> F or above. The engine coolant temperature shall be measured with the engir existing engine coolant temperature sensor used for engine protection, if so equipped. Other methods of measuring engine coolant temperature may be allowed, subject to advance Executive Officer approval.

c. if an exhaust emission control device is regenerating, and keeping the engine running is necessary to prevent aftertreatment or engine damage, the engine shutdown system may be overridden for the duration necessary to complete the regeneration process up to a maximu of 30 minutes. Determination of what constitutes the need for regeneration will be based on data provided by the manufacturer at time of certification. Regeneration events that may require longer than 30 minutes of engine idling to complete shall require advance Executive Officer approval. At the end of the regeneration process, the engine shutdown system shall automatically be enabled to restart the engine shutdown sequence described in subparagrap (a)(6)(A)1. above. A vehicle that uses a regeneration strategy under engine idling operating conditions shall be equipped with a dashboard indicator light that, when illuminated, indicate that the exhaust emission control device is regenerating. Other methods of indicating that th exhaust emission control device is regenerating may be used with advance Executive Officer approval.

d. if servicing or maintenance of the engine requires extended idling operation. The engine's electronic control module may be set to temporarily deactivate the engine shutdown system up to a maximum of 60 minutes. The deactivation of the engine shutdown system shall only performed with the use of a diagnostic scan tool. At the end of the set deactivation period, th engine's electronic control module shall reset to restart the engine shutdown system sequen described in subparagraph (a)(6)(A)1. above.

(B) Exempt Vehicles.Heavy-duty diesel engines to be used in buses as defined in California Vehicle Code sections 233, 612 and 642, school buses as defined in California Vehicle Code section 545, recreational vehicles as defined in Health and Safety Code 18010, medium duty vehicles as define in section 1900(b)(13) of title 13, California Code of Regulations, military tactical vehicles as defin in section 1905 of title 13, California Code of Regulations, and authorized emergency vehicles as defined in California Vehicle Code section 165 are exempted from these requirements.

(C) Optional NOx idling emission standard.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 model-year heavy-duty diesel engines to an optional NOx idling emission standar of 30 grams per hour. Compliance with this optional standard 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 an 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 use cannot be demonstrated using the procedures in section 86.1360-2007.B.4, subject to advance approval of the Executive Officer. A manufacturer certifying to the optional NOx idling standard m not increase emissions of CO, PM, or NMHC, determined by comparing results from the supplemer 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 Heav Duty Diesel Engines and Vehicles" to emission results from the idle mode of the supplemental stea state test cycle or emission results from idle portions of the transient test cycle for heavy duty die 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 Heav Duty Diesel Engines and Vehicles." With advance Executive Officer approval, a manufacturer may

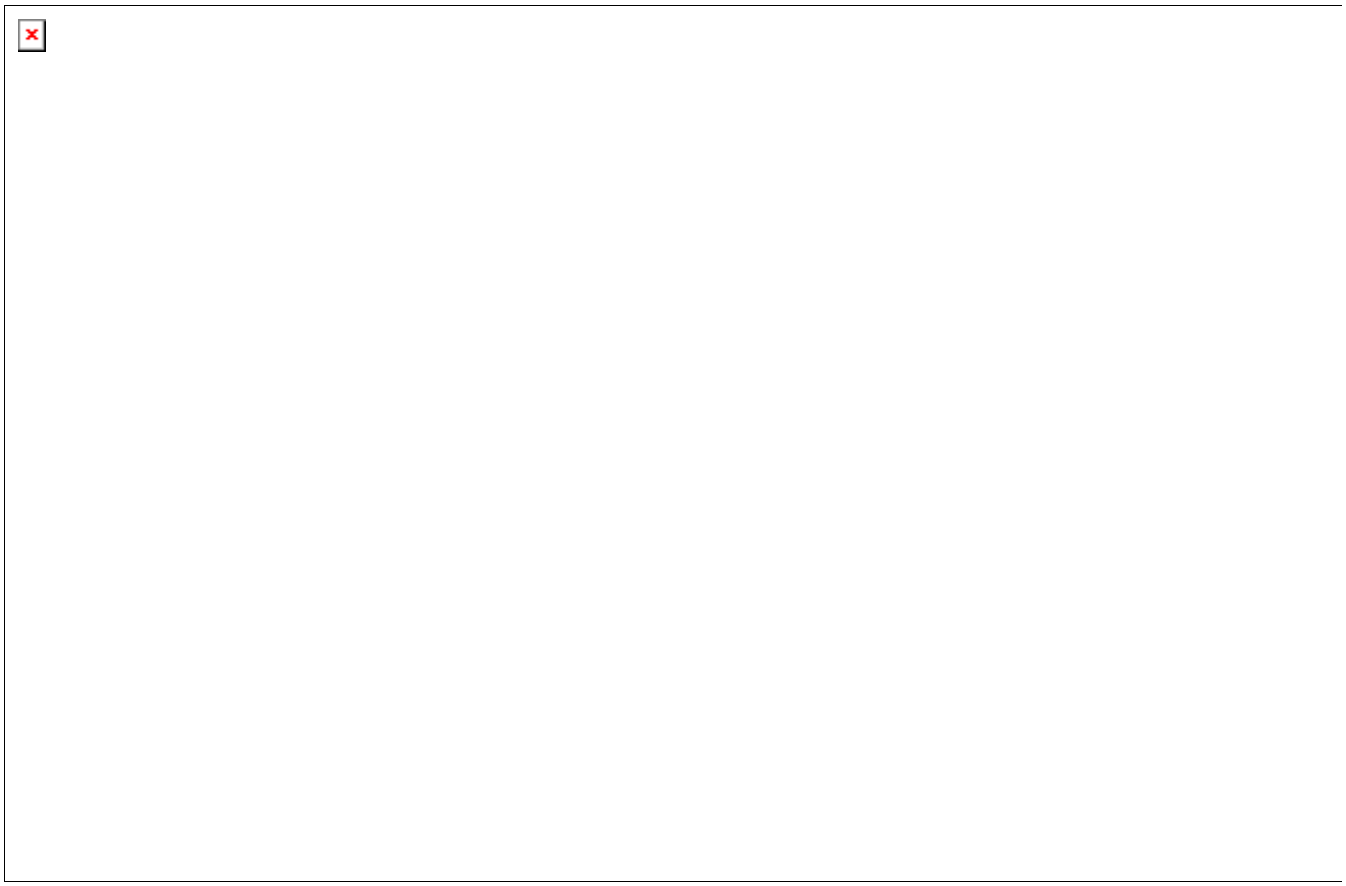
use other methods of ensuring that emissions of CO, PM, and NMHC are not adversely affected in meeting the optional NOx requirement. Also, manufacturers shall state in their application for certification that meeting the optional NOx idling requirement will not adversely affect the associa emissions of CO, PM and NMHC.

An engine manufacturer certifying its engine to the optional NOx idling emission standard must als 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).

(D) Optional Alternatives to Main Engine Idling. All new 2008 and subsequent model year heavy d diesel engines may also be equipped with idling emission reduction devices that comply with the compliance requirements specified in title 13, CCR, section 2485(c)(3).

(b) The test procedures for determining compliance with standards applicable to 1985 and subsequ model heavy-duty diesel engines and vehicles and the requirements for participation in the averagi 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 September 1, 2006, and the "California Interim Certification Procedures for 2004 and Subsequent Model Hybrid-Electric Vehicles, in the Urban Bus and Heavy-D Vehicle Classes," adopted October 24, 2002, which are incorporated by reference herein.

(c)(1)(A) The exhaust emissions from (i) new 1987 through 2004 model heavy-duty Otto-cycle engines (except methanol-fueled engines and except heavy-duty Otto-cycle natural-gas-fueled and liquified-petroleum-gas-fueled Otto-cycle engines derived from diesel-cycle engines) and (ii) from n 1993 through 2004 model heavy-duty methanol-fueled Otto-cycle engines (except in all cases engi used in medium-duty vehicles) shall not exceed:



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Exhaust Emission Standards for Heavy-Duty Otto-Cycle Engines
(grams per brake horsepower-hour or g/bhp-hr)

Model Year	Total Hydrocarbons or OMHCE [FNA]#Hydrocarbons [FNA]	Optional Non-Methane Monoxide [FNB]	Carbon Nitrogen	Oxides of
1987 [FNC]	1.1 [FND]		14.4 [FND]	10.6
	1.9 [FNE]		37.1 [FNE]	10.6
1988-1989	1.1 [FND]		14.4 [FND]	6.0
	1.9 [FNE]		37.1 [FNE]	6.0
1990	1.1	0.9 [FND]	14.4 [FND]	6.0
	1.9 [FNE]	1.7 [FNE]	37.1 [FNE]	6.0
1991-1994	1.1 [FND]	0.9 [FND]	14.4 [FND]	5.0
	1.9 [FNE]	1.7 [FNE]	37.1 [FNE]	5.0
1995-1997	1.9 [FNE]	1.7 [FNE]	37.1 [FNE]	5.0
[FNF]	1.9 [FNE]	1.7 [FNE]	37.1 [FNE]	2.5 to 5.0
1998-2003 [FNG]	1.9 [FNE]	1.7 [FNE]	37.1 [FNE]	4.0
[FNF]	1.9 [FNE]	1.7 [FNE]	37.1 [FNE]	1.5 to 0.5

	Non-Methane Hydrocarbons plus Oxides of Nitrogen (NMHC + NOx)	Carbon Monoxide
2004 [FNG]	2.4 g/bph-hr; or 2.5 with 0.5 g/bhp-hr cap on NMHC	37.1

[FNA] The total or optional non-methane hydrocarbon standards apply to petroleum-fueled, natural gas-fueled and liquefied-petroleum-gas-fueled engines and methanol-fueled engines beginning in 2004. The Organic Material Hydrocarbon Equivalent, or OMHCE, standards apply to 1987 through 2 methanol-fueled engines.

[FNB] Prior to the 2002 model year,carbon monoxide emissions from engines utilizing exhaust after treatment technology shall also not exceed 0.5 percent of the exhaust gas flow at curb idle.

[FNC] Manufacturers with existing heavy-duty Otto-cycle engines certified to the California 1986 steady-state emission standards and test procedures may as an option certify those engines, for th 1987 model year only, in accordance with the standards and test procedures for 1986 heavy-duty Otto-cycle engines established in Section 1956.7.

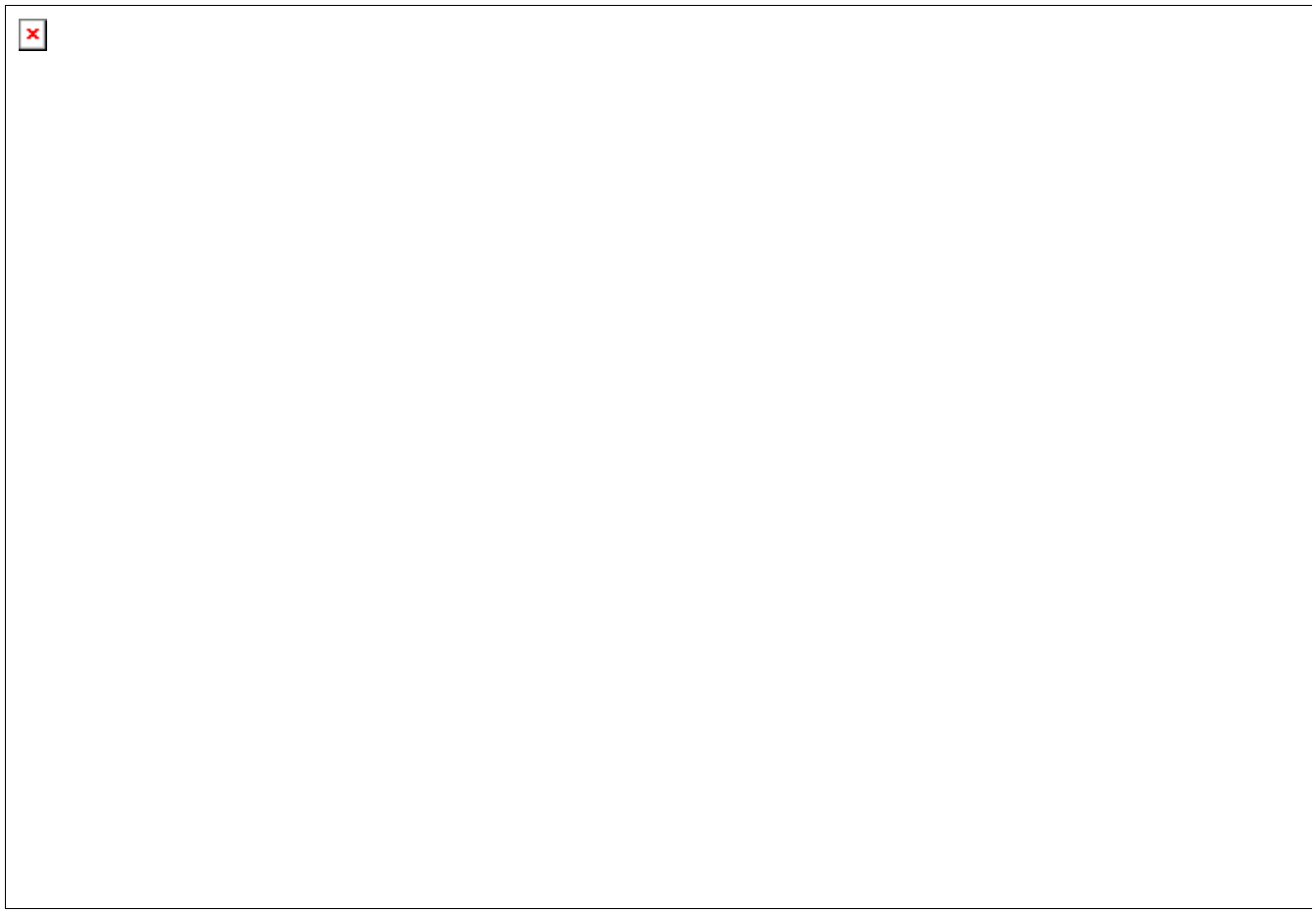
[FND] These standards are applicable to Otto-cycle engines intended for use in all heavy-duty vehicles.

[FNE] Applicable to heavy-duty Otto-cycle engines intended for use only in vehicles with a gross vehicle weight rating greater than 14,000 pounds. Also, as an option, a manufacturer may certify o or more 1988 through 1994 model Otto-cycle heavy-duty engine configurations intended for use in heavy-duty vehicles to these emission standards, provided that the total model-year sales of such configuration(s) being certified to these emission standards represent no more than 5 percent of to model-year sales of all Otto-cycle heavy-duty engines intended for use in vehicles with a Gross Veh Weight Rating of up to 14,000 pounds by the manufacturer.

[FNF] These are optional standards and apply to all heavy-duty engines intended for use only in vehicles with a gross vehicle weight rating greater than 14,000 pounds. A manufacturer may elect t certify to an optional standard between the values, inclusive, by 0.5 grams per brake horsepower-h increments.

[FNG] A manufacturer may request to certify to Option 1 or Option 2 federal NMHC + NOx standarc as set forth in 40 CFR s 86.005-10(f), as adopted October 6, 2000.

(B) The exhaust emissions from new 2005 and subsequent model heavy-duty Otto-cycle engines, except for Otto-cycle medium- and heavy-duty engines subject to the alternative standards in 40 CFR s86,005-10(f), shall not exceed:



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California Emission Standards for 2005 and Subsequent Model Heavy-Duty Otto-Cycle Engines [FNA] (in g/bhp-hr)

Model Year	Emission Category	NMHC + NOx	NMHC	NOx	CO [FNF]	HCHO	PM
Standards for Heavy-Duty Otto-Cycle Engines Used In Incomplete Medium-Duty Vehicles 8,501 to 14,000 pounds GVW [FNB]							
2005 through 2007	ULEV	1.0 [FNC,E]	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	ULEV	n/a	0.14 [FNE]	0.20 [FNE]	14.4	0.01	0.01
	SULEV	n/a	0.07 [FNE]	0.10 [FNE]	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 [FNC,E]	n/a	n/a	37.1	0.05 [FND]	n/a
2008 and subsequent	n/a	n/a	0.14 [FNE]	0.20 [FNE]	14.4	0.01	0.01

[FNA] These standards apply to petroleum-fueled, alcohol-fueled, liquefied petroleum gas-fueled a natural gas-fueled Otto-cycle engines.

[FNB] 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, 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), t 13 CCR.

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

[FND] This standard only applies to methanol-fueled Otto-cycle engines.

[FNE] 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 2(and Subsequent Model Heavy-Duty Otto-Cycle Engines," incorporated by reference in section 195((d). For engine families certified to the Option 1 or 2 federal standards, the FEL must not exceed 1 g/bhp-hr. If a manufacturer elects to include engine families certified to the 2005 and subsequent 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 model year standards, the FEL is the same as set forth in 40 CFR 86.008-10(a)(1).

[FNF] 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.

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(2) Formaldehyde exhaust emissions from new 1993 and subsequent model methanol-fueled otto cy engines shall not exceed:

Model Year	Formaldehyde (g/bhp-hr)
1993-1995.....	0.10
1996 and Subsequent....	0.05

(d) The test procedures for determining compliance with standards applicable to 1987 and subsequ model heavy-duty Otto-cycle engines and vehicles 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," adopted December 27, 2000, as last amended December 12, 2002, the "California Non-Methane Organic Gas Test Procedures," adopted July 12, 1991, as last amended July 30, 2002, and the "California Interim Certification Procedures for 2004 and Subsequent Model Hybrid-Electric Vehicles, in the Urban Bus and Heavy-Duty Vehicle Classes," adopted October 24, 2002, which are incorporated by reference herein.

(e) A manufacturer may elect to certify complete heavy-duty vehicles of 14,000 pounds or less maximum gross vehicle weight rating as medium-duty vehicles under section 1960.1 or section 196 of this chapter, in which event the heavy-duty emission standards and test procedures in this sectic shall not apply.

(f)(1) In 1985 and future years, the executive officer may authorize use of engines certified to mee federal emission standards, or which are demonstrated to meet appropriate federal emission standards, in up to a total of 100 heavy-duty vehicles, including otto-cycle and diesel heavy-duty vehicles, in any one calendar year when the executive officer has determined that no engine certifie to meet California emission standards exists which is suitable for use in the vehicles.

(2) In order to qualify for an exemption, the vehicle manufacturer shall submit, in writing, to the executive officer the justification for such exemption. The exemption request shall show that, due to circumstances beyond the control of the vehicle manufacturer, California certified engines are unavailable for use in the vehicle. The request shall further show that redesign or discontinuation of vehicle will result in extreme cost penalties and disruption of business. In evaluating a request for an exemption, the executive officer shall consider all relevant factors, including the number of individua vehicles covered by the request and the anti-competitive effect, if any, of granting the request. If a request is denied, the executive officer shall state in writing the reasons for the denial.

(3) In the event the executive officer determines that an applicant may meet the criteria for an exemption under this subsection, but that granting the exemption will, together with previous exemptions granted, result in over 100 vehicles being permitted under this subsection to use non-California engines in heavy-duty vehicles in any one calendar year, the exemption may be granted o by the state board, under the criteria set forth herein.

(g) The exhaust emissions from new 1995 through 2003 model-year engines used in incomplete medium-duty vehicles or diesel engines used in medium-duty vehicles shall not exceed:

Exhaust Emission Standards [FNA] (grams per brake horsepower-hour, or g/bhp-hr)

Model Year	Carbon Monoxide	NMHC + NOx [FNB]	Particulates [FNC]
1995 [FND]	14.4	3.9	0.10

[FNA]This set of standards is optional. Manufacturers of engines used in incomplete medium-duty vehicles or diesel engines used in medium-duty vehicles from 8501-14,000 pounds, gross vehicle weight may choose to comply with these standards as a alternative to the primary emission standa and test procedures specified in section 1960.1, Title 13, California Code of Regulations. Manufactu that choose to comply with these optional heavy-duty standards and test procedures shall specify, i the application for certification, an in-use compliance test procedure, as provided in section 2139(c) Title 13, California Code of Regulations.

[FNB] 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.

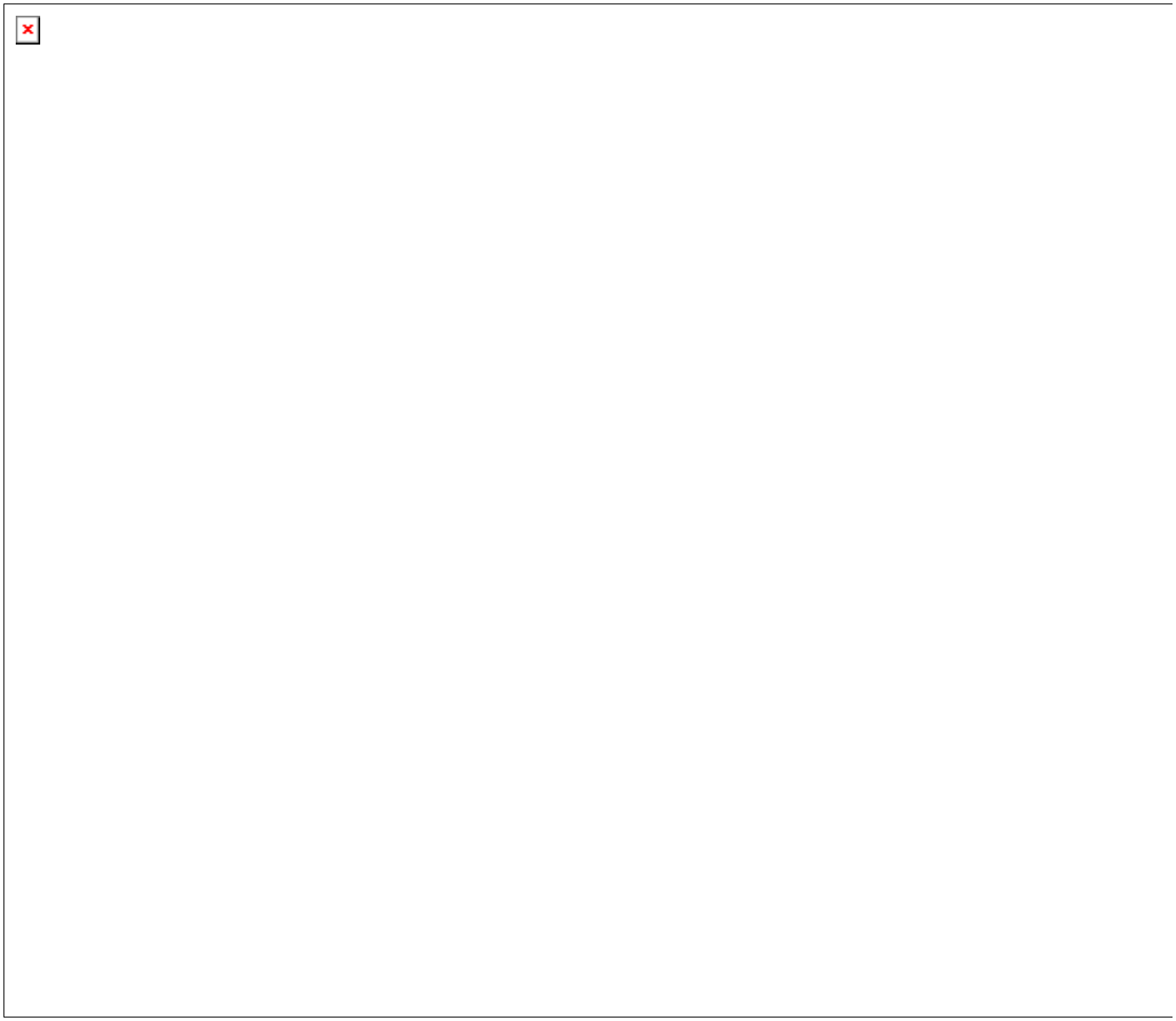
[FNC] This standard shall only apply to diesel engines and vehicles.

[FND] In the 1995 model-year only, manufacturers may certify up to 50 percent of their medium-d engines or vehicles to the applicable 1994 model- year standards and test procedures. For the 199 through 1997 models, alternative in-use compliance is available for medium-duty manufacturers. A manufacturer may use alternative in-use compliance for up to 100 percent of its fleet in the 1995 a 1996 model years and up to 50 percent of its fleet in the 1997 model year. The percentages shall b determined from the manufacturers' projected California sales of medium-duty vehicles. For engine certified to the standards and test procedures of this subsection, "alternative in-use compliance" sh consist of an allowance of 25 percent over the HC + NOx standard. In-use compliance testing shall limited to vehicles or engines with less than 90,000 miles.

(h) The exhaust emissions from new:

(1) 1992 through 2004 model-year Otto-cycle engines used in incomplete medium-duty low-emissio vehicles, ultra-low-emission vehicles, and super-ultra-low-emission vehicles; and

(2) 1992 and subsequent model diesel engines used in medium-duty low-emission vehicles, ultra-lov emission vehicles, and super-ultra-low-emission vehicles shall not exceed:



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Exhaust Emission Standards for Engines Used in Incomplete Otto-Cycle

Low-Emission Vehicles, Ultra-Low-Emission Vehicles, and
Super Ultra-Low-Emission Vehicles, and for Diesel
1...+...10....+...20....+...30....+...40....+...50....+...60....+...70....+..

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Medium-Duty

78.....+...90....+....

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******** This is piece 3. -- It begins at character 1 of table line 4. ********
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Model Year

1992 [FNE]
-2001
2002-2003
[FNE]
1992-2003
[FNE,H]
2004 and

subsequent
[FNL]
2004 and

subsequent
[FNL]
2007 and
subsequent
[FND]
1992 and

subsequent
[FNL]
2007 and
subsequent
[FND]
1...+...10....

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******* This is piece 4. -- It begins at character 15 of table line 4. ********
****

Engines Used in Medium-Duty Low-Emission Vehicles, Ultra-Low-Emission
Vehicles, and Super Ultra-Low-Emission Vehicles [FNA,F]
(grams per brake horsepower-hour)

Vehicle Emissions Category [FNB]	Carbon Monoxide	NMHC + NOx [FNC%]	Non-Methane Hydrocarbons	Oxides of Nitrogen	Formaldehyde
LEV	14.4	3.5 [FNK]	n/a	n/a	0.050
LEV	14.4	3.0 [FNK]	n/a	n/a	0.050
ULEV	14.4	2.5 [FNK]	n/a	n/a	0.050
ULEV - Opt A	14.4	2.5 [FN-I,J,K]	n/a	n/a	0.050
ULEV - Opt. Bn/a	14.4	2.4 [FN-I,J,K]	n/a	n/a	0.050
ULEV	15.5	n/a	0.14	0.2	0.050
SULEV	7.2	2.0 [FNK]	n/a	n/a	0.025
SULEV	7.7	n/a	0.07	0.1	0.025

15..20....+...30....+...40....+...50....+...60....+...70....+...80....

****
******* This is piece 5. -- It begins at character 85 of table line 4. ********
****

Particulates [FND]
0.10 [FNK]
0.10 [FNK]
0.10 [FNK]
0.10 [FNJ,K]
0.10 [FNJ,K]

0.01

0.05 [FNK]

0.005

85..90....+....

_____

[FNA] This set of standards is optional. Manufacturers of engines used in incomplete medium-duty vehicles or diesel engines used in medium-duty vehicles from 8501-14,000 pounds gross vehicle wei rating may choose to comply with these standards as a alternative to the primary emission standards and test procedures specified in section 1960.1, or section 1961, Title 13, California Code of Regulations. 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.

[FNB] "LEV" means low-emission vehicle.

"ULEV" means ultra-low-emission vehicle.

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

[FNC] 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").

[FND] These standards apply only to diesel engines and vehicles .

[FNE] 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), Ti 13, California Code of Regulations.

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

[FNG] [Reserved]

[FNH] For engines certified to the 3.5 grams per brake horsepower-hour (g/bhp-hr) LEV standards, t 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 sh be 3.2 g/bhp-hr. For engines certified to the 1992 through 2003 model year ULEV standards, the in-

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 SULEV standards, the in-use compliance standard shall be 2.2 g/bhp-hr for the first two model years of introduction.

[FNI] 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.

[FNJ] 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.

[FNK] Engines of 1998 and subsequent model years may be eligible to generate averaging, banking and trading credits based on these standards according to the requirements of the averaging, bankin and trading programs described in the "California Exhaust Emission Standards and Test Procedures f 1985 through 2003 Model Heavy-Duty Diesel 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. [FNL] For 2007 and subsequer model year diesel engines used in medium-duty vehicles, these emission standards are not applicabl

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(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 standarc FEL applicable to model year 2006 engines under section 1956.8(h)(2), in lieu of the separate NO and NMHC standards or FELs applicable to the 2007 and subsequent 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 5(percent of engines to the NOx plus NMHC standards or FELs applicable to 2006 engines, as specifi in 40 Code of Federal Regulations, part 86, section 86.007- 11(g)(1), as adopted January 18, 200 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 specif 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 model year PM standard listed in section 1956.8 (h)(2) (without using credits, as determined in ar 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 model year PM standard listed in section 1956.8(h)(2) model year 2007, 2008 and/or 2009. To qualify for this option, a manufacturer must satisfy the PI emission requirements pursuant to the methods detailed in 40 Code of Federal Regulations, part 8 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 rou 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 factor For the purpose of section 1956.8(h)(2), crankcase emissions that are routed to the exhaust upstrea of exhaust aftertreatment during all operation are not considered to be "discharged directly into the ambient atmosphere."

<General Materials (GM) - References, Annotations, or Tables**>**

Note: Authority cited: Sections 39600, 39601, 43013, 43018, 43100, 43101, 43102, 43104, 43105 a 43806, Health and Safety Code; and Section 28114, Vehicle Code. Reference: Sections 39002, 39003, 39500, 43000, 43013, 43017, 43018, 43100, 43101, 43101.5, 43102, 43104, 43106, 43202, 43204, 43205.5, 43206, 43210, 43211, 43212, 43213 and 43806, Health and Safety Code; and Section 28114 Vehicle Code.

HISTORY

1. New section filed 5-15-85; effective thirtieth day thereafter (Register 85, No. 20).

2. Amendment of subsections (a) and (b) filed 9-15-86; effective thirtieth day thereafter (Register 86, No. 38).

3. Relettering and amendment of former subsection (c) to (e), relettering of former subsection (d) to (f) and new subsections (c) and (d) filed 9-15-86; effective thirtieth day thereafter (Register 86, No. 38).

4. Editorial correction of subsection (a) printing error (Register 87, No. 50).

5. Amendment of subsection (d) filed 6-6-88; operative 6-6-88 pursuant to Government Code section 11346.2(d) (Register 88, No. 25).

6. Amendment filed 2-21-90; operative 3-23-90 (Register 90, No. 8).

7. Amendment filed 6-14-90; effective 7-14-90 (Register 90, No. 33).

8. Amendment of subsections (b), (c), (d) and (g) filed 8-2- 91; operative 9-2-91 (Register 91, No. 49).

9. Amendment of subsections (a), (b), (d) and (g) and new subsection (h) filed 8-30-91; operative 9-30-91 (Register 92, No. 14).

10. Amendment of subsections (b) and (d) filed 12-9-92; operative 1-1-93 (Register 92, No. 50).

11. Amendment of subsection (d) filed 7-20-93; operative 8-19-93 (Register 93, No. 30).

12. Amendment of subsection (b) filed 12-1-93; operative 1-1-95 (Register 93, No. 49).

13. Amendment of (a)(1) table and notes, subsection (b) and Notefiled 5-12-94; operative 6-13-94 (Register 94, No. 19).

14. Amendment of subsections (b) and (d) filed 4-13-95; operative 4-13-95 pursuant to Government Code section 11343.4(d) (Register 95, No. 15).

15. Amendment of subsections (a)(1), (b), (c)(1) and (d) filed 12-14-95; operative 1-13-96 (Register 95, No. 50).

16. Amendment filed 9-23-96; operative 10-23-96 (Register 96, No. 39).

17. Amendment of subsection (b) filed 7-25-97; operative 8-24-97 (Register 97, No. 30).

18. Amendment filed 4-15-99; operative 5-15-99 (Register 99, No. 16).

19. Amendment filed 1-23-2001; operative 1-23-2001 pursuant to GovernmentCode section 11343.4(c) (Register 2001, No. 4).

20. Amendment of section andNotefiled 4-30-2001; operative 5-30-2001 (Register 2001, No. 18).

21. Amendment of subsection (b) filed 7-25-2001; operative 7-25-2001 pursuant to Government Code section 11343.4 (Register 2001, No. 30).

22. Redesignation and amendment of subsection (a)(2) as subsection (a)(2)(A), new subsections (a)(2)(B) and (a)(5), amendment of subsections (b) and (h), new subsections (h)(3)-(4) and amendment of Notefiled 10-18-2002; operative 11-17-2002 (Register 2002, No. 42).

23. Change without regulatory effect amending subsections (a)(2)(B)(i)-(ii) and (h)(3) filed 4-16-2003 pursuant to section 100, title 1, California Codeof Regulations (Register 2003, No. 16).

24. Amendment of section andNotefiled 10-16-2003; operative 11-15-2003 (Register 2003, No. 42).

25. Amendment of subsections (b), (c)(1)(B), (d) and (h)(2) footnotes J-K filed 11-4-2003; operative 12-4-2003 (Register 2003, No. 45).

26. Amendment of subsection (a)(2)(A) table heading and table, new table footnotes L and M and redesignation of former subsections (a)(2)(B)(i)-(ii) as subsections (a)(2)(B)1.-2. filed 9-7-2006; operative 10-7-2006 (Register 2006, No. 36).

27. New subsections (a)(6)-(a)(6)(D), amendment of subsection (b) and amendment ofNote filed 10-16-2006; operative 11-15-2006 (Register 2006, No. 42).

13 CCR s 1956.8, **13 CA ADC s 1956.8**
1CAC

13 CA ADC s 1956.8

END OF DOCUMENT

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