FINAL REGULATION ORDER

Amend the following sections of Title 13, California Code of Regulations, to read as set forth on the following pages:

Section 1956.8	- Exhaust Emission Standards and Test Procedures - 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles
	- Exhaust Emission Standards and Test Procedures - 1987 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles
Section 1965	- Emission Control and Smog Index Labels - 1979 and Subsequent Model-Year Motor Vehicles
Section 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.
Section 2112	- Definitions

Note: The regulatory amendments contained in this rulemaking are shown in <u>underline</u> to indicate additions to the text and ~~strikeout~~ to indicate deletions.

SECTION 1956.8, TITLE 13, CCR

Amend Title 13, California Code of Regulations, section 1956.8 to read:

1956.8. Exhaust Emission Standards and Test Procedures - 1985 and Subsequent Model Heavy-Duty Engines and Vehicles.

(a)(1) The exhaust emissions (A) from new 1985 and subsequent model heavy-duty diesel engines (except methanol-fueled engines) and heavy-duty natural-gas-fueled and liquefied-petroleum-gas-fueled engines derived from diesel-cycle engines, (B) from new 1991 and subsequent model heavy-duty methanol-fueled diesel transit bus engines, and (C) from all new 1993 and subsequent model heavy-duty methanol-fueled, diesel engines, except in all cases engines used in medium-duty vehicles, shall not exceed:

Exhaust Emission Standards
(grams per brake horsepower-hour)

Model Year	Total Hydrocarbons or OMHCE[A]	Optional Non-methane Hydrocarbons[A]	Carbon Monoxide	Oxides of Nitrogen	Particulates
1985-1986	1.3		15.5	5.1	---
1987[B]	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[C]	1.3	1.2	15.5	5.0	0.10
1991-1993[D]	1.3	1.2	15.5	5.0	0.25 [E]
1994 -1997	1.3	1.2	15.5	5.0	0.10 [E]
1994-1995[F]	1.3	1.2	15.5	5.0	0.07
1994-1995[G]	1.3	1.2	15.5	3.5 to 0.5	0.07
1995-1997 [J]	1.3	1.2	15.5	3.5 to 0.5	0.10

1996 ~~and~~ [F] subsequent-2003	1.3	1.2	15.5	4.0 [I, O]	0.05 [H, O]
1996 ~~and~~ [G] subsequent-2003	1.3	1.2	15.5	2.5 to 0.5	0.05 [H]
1998 ~~and~~ [K] subsequent-2003	1.3	1.2	15.5	4.0 [O,S]	0.10 [O]
1998 ~~and~~ [J] subsequent-2003	1.3	1.2	15.5	2.5 to 0.5 [T]	0.10

Model Year	Oxides of Nitrogen Plus Non-methane Hydrocarbons	Optional Oxides of Nitrogen Plus Non-methane Hydrocarbons	Carbon Monoxide	Particulates
2004 and subsequent [C]	2.4 [L,P,S]	2.5 [M,P,S]	15.5	0.05 [H,P]
2004 and subsequent [N]	2.4 [L,P,S]	2.5 [M,P,S]	15.5	0.10 [P]
2004 and subsequent [C]	n/a	1.8 to 0.3 [L,R,T]	15.5	0.05 [H]
2004 and subsequent [N]	n/a	1.8 to 0.3 [L,R,T]	15.5	0.10

[A] 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 Equivalent, or OMHCE, standards apply to methanol-fueled engines.

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

[C] These standards apply to urban bus engines only.

[D] For engines other than urban bus engines. For methanol-fueled engines, these standards shall be applicable beginning with the 1993 model year.

[E] Emissions averaging may be used to meet this standard. Averaging is restricted to within each useful life subclass and is applicable only through the 1995 model year. Emissions from engines used in urban buses shall not be included in the averaging program. However, emissions from methanol-fueled, natural-gas-fueled and liquefied-petroleum-gas-fueled urban bus engines certified to a 0.10 grams per brake horsepower-hour standard for particulates for the 1991-1993 model years, and certified to a 0.07 grams per brake horsepower-hour standard for particulates for the 1994-1995 model years, may be included in the averaging program for petroleum-fueled engines other than urban bus engines.

[F] These mandatory standards apply to urban bus engines only.

[G] These optional standards apply to urban bus engines only. A manufacturer may elect to certify to an optional NOx standard by 0.5 grams per brake horsepower-hour increments. Engines certified to any of these optional NOx standards are not eligible for participation in any averaging, banking or trading programs described in "California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles" incorporated in (b), below.

[H] For in-use testing, a 0.07 gram per brake horsepower-hour standard for particulates shall apply.

[I] A manufacturer may apply to the Executive Officer for an exemption from the 4.0 gram per brake horsepower-hour standard for oxides of nitrogen for 1996 and 1997 model year urban bus engines for which the manufacturer can demonstrate a technological need for the exemption. The exemption or exemptions shall not exceed 10 percent of the average of the manufacturer's total urban bus engine sales in California for the three model years prior to the model year for which an exemption is requested. The manufacturer shall submit technical justification for each engine model and shall provide the number of urban bus engine sales in California for the engine model for which the exemption is requested (if any) and for all urban bus engine models for the three preceding model years, to the Executive Officer when the manufacturer applies for the exemption.

[J] These are optional standards and apply to all heavy-duty engines excluding urban bus engines. A manufacturer may elect to certify to an optional NOx standard between the values, inclusive, by 0.5 grams per brake horsepower-hour increments. Engines certified to any of these optional NOx standards are not eligible for participation in any averaging, banking or trading programs described in "California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles" incorporated in (b), below.

[K] These mandatory standards apply to all heavy-duty engines except urban bus engines.

[L] This is the standard for the arithmetic sum of the oxides of nitrogen exhaust component certification value and the non-methane hydrocarbon exhaust component certification value, without individual restriction on the individual component values.

[M] This is the standard for the arithmetic sum of the oxides of nitrogen exhaust component certification value and the non-methane hydrocarbon exhaust component certification value, with the non-methane hydrocarbon individual component value not to exceed 0.5 g/bhp-hr.

[N] These standards apply to all heavy-duty engines except urban bus engines.

[O] Engines of 1998 through 2003 model years may be eligible to generate banking credits based 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 in (b), below.

[P] Emissions averaging may be used to meet this standard. Averaging must be based on 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 in (b), below.

[R] A manufacturer may elect to certify to an optional reduced-emission NOx+NMHC standard between the values, inclusive, by 0.3 grams per brake horsepower-hour increments. Engines certified to any of these optional reduced-emission NOx standards are not eligible for participation in any averaging, banking or trading programs described in "California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles" incorporated in (b), below.

[S] 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), below.

[T] 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), below.

(2) 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

(3) 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 S in (a)(1).

(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 T in (a)(1).

(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.

(b) The test procedures for determining compliance with standards applicable to 1985 and subsequent heavy-duty diesel engines and vehicles and the requirements for participation in the averaging, banking and trading programs, are set forth in the "California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles", adopted April 8, 1985, as last amended ~~June 4, 1997,~~ February 26, 1999, which is incorporated herein by reference.

(c), (d), (e), (f), (g) [No Change]

(h) The exhaust emissions from new 1992 and subsequent model-year engines used in incomplete medium-duty low-emission vehicles, ultra-low-emission vehicles, and super-ultra-low-emission vehicles, and for diesel engines used in medium-duty low-emission vehicles, ultra-low-emission vehicles and super-ultra-low-emission vehicles shall not exceed:

Exhaust Emission Standards for Engines Used in Incomplete Medium-Duty Low-Emission Vehicles, Ultra-Low-Emission Vehicles, and Super Ultra-Low-Emission Vehicles, and for 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)

Model Year	*Vehicle Emissions Category[B]*	*Carbon Monoxide*	*Non-Methane Hydrocarbons and Oxides of Nitrogen[C]*	*Formaldehyde*	*Particulates[D]*
1992[E] - 2001	LEV	14.4	3.5[K]	0.050	0.10[K]
2002-2003[E]	LEV	14.4	3.0[K]	0.050	0.10[K]
1992-2003[E,H]	ULEV	14.4	2.5[K]	0.050	0.10[K]
2004 and subsequent	ULEV - Opt A.	14.4	2.5[G,I,J,K]	0.050	0.10[JK]
2004 and subsequent	ULEV - Opt. B	14.4	2.4[G,I,J,K]	0.050	0.10[JK]
1992 and subsequent	SULEV	7.2	2.0[K]	0.025	0.05[K]

[A] 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 rating may choose to comply with these standards as an alternative to the primary emission standards and test procedures specified in section 1960.1, 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.

[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] This standard shall only apply 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] [The U.S. EPA is considering the adoption of amendments to the federal emission standards for engines used in incomplete medium-duty vehicles or diesel engines used in medium-duty vehicles as they existed June 24, 1996. If the U.S. EPA promulgates amendments to the emission standards for this category, the ARB will hold a noticed public hearing within one year of such promulgation to consider the adoption of similar or identical standards in California.]

[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 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 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles", adopted April 8, 1985, as last amended February 26, 1999, incorporated by reference in paragraph (b), above.

[K] 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, banking and trading programs described in "California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles", adopted April 8, 1985, as last amended February 26, 1999, incorporated by reference in paragraph (b), above.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43103, 43104, and 43806, Health and Safety Code, and section 28114, Vehicle Code. Reference: Sections 39002, 39003, 43000, 43013, 43018, 43100, 43101, 43101.5, 43102, 43103, 43104, 43106, 43204, and 43806, Health and Safety Code.

SECTION 1965, TITLE 13, CCR

Amend section 1965, Title 13, California Code of Regulations to read:

1965. Emission Control and Smog Index Labels - 1979 and Subsequent Model-Year Motor Vehicles.

In addition to all other requirements, emission control labels required by California certification procedures and smog index labels shall conform to the "California Motor Vehicle Emission Control and Smog Index Label Specifications", adopted March 1, 1978, as last amended ~~June 24, 1996 (as corrected September 20, 1996),~~ February 26, 1999, which is incorporated herein by reference.

NOTE: Authority cited: Sections 39600, 39601, and 43200, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43013, 43100, 43101, 43102, 43103, 43104, and 43107, and 43200, Health and Safety Code.

SECTION 2036, TITLE 13, CCR

Amend title 13, California Code of Regulations, section 2036 to read:

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.

(a) Applicability.

This section shall apply to 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. The warranty period shall begin on the date the vehicle is delivered to an ultimate purchaser, or if the vehicle is first placed in service as a "demonstrator" or "company" car prior to delivery, on the date it is first placed in service.

(b) General Emissions Warranty Coverage.

The manufacturer of each motor vehicle or motor vehicle engine shall warrant to the ultimate purchaser and each subsequent purchaser that the vehicle or engine is:

(1) Designed, built, and equipped so as to conform, at the time of sale, with all applicable regulations adopted by the Air Resources Board pursuant to its authority in chapters 1 and 2, part 5, division 26 of the Health and Safety Code; and

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

(c) Warranty Period.

The warranty period applicable to this section shall be:

(1) In the case of Class I motorcycles and motorcycle engines (50 to 169 cc or 3.1 to 10.4 cu. in.), a period of use of five years or 12,000 kilometers (7,456 miles), whichever first occurs.

(2) In the case of Class II motorcycles and motorcycle engines (170 to 279 cc or 10.4 to 17.1 cu. in.), a period of use of five years or 18,000 kilometers (11,185 miles), whichever first occurs.

(3) In the case of Class III motorcycles and motorcycle engines (280 cc and larger or 17.1 cu. in. and larger), a period of use of five years or 30,000 kilometers (18,641 miles), whichever first occurs.

(4) In the case of diesel-powered heavy-duty vehicles (except medium-duty vehicles), and motor

vehicle engines used in such vehicles, a period of use of five years, 100,000 miles, or 3000 hours of operations, whichever first occurs. However, in no case may this period be less than the basic mechanical warranty period that the manufacturer provides (with or without additional charge) to the purchaser of the engine. Extended warranties on select parts do not extend the emissions warranty requirements for the entire engine but only for those parts. In cases where responsibility for an extended warranty is shared between the owner and the manufacturer, the emissions warranty shall also be shared in the same manner as specified in the warranty agreement.

(5) In the case of passenger cars, light-duty trucks, and medium-duty vehicles certified under the optional 100,000-mile certification procedure, and motor vehicle engines used in such vehicles, a period of use of ten years or 100,000 miles, whichever first occurs, except as otherwise provided in this paragraph. In the case of diesel particulate control system components on the 1985 and subsequent model passenger cars, light- duty trucks, and medium-duty vehicles certified under the optional 100,000-mile certification procedure, the warranty period means five years or 50,000 miles, whichever first occurs, for failures of such components which do not result in the failure of any other warranted part to perform as designed during the warranty period of the vehicle, and ten years or 100,000 miles, whichever first occurs, for all other failures.

(6) In the case of vehicles certified to the optional emission standards pursuant to Health and Safety Code section 43101.5(a), which are sold on or after January 1, 1983, for fuel metering and ignition components contained in the state board's "Emissions Warranty Parts List", dated December 14, 1978, as amended February 22, 1985, a period of use of two years or 24,000 miles, whichever first occurs, and for all other warranted parts, a period of use of five years or 50,000 miles, whichever first occurs.

(7) In the case of all other passenger cars, light-duty trucks, and medium-duty vehicles, ~~and heavy-duty vehicles, and motor vehicle engines used in such vehicles,~~ a period of use of five years or 50,000 miles, whichever first occurs.

(8) In the case of heavy-duty vehicles and motor vehicle engines used in such vehicles, (except for diesel-powered heavy-duty vehicles or all medium-duty vehicles, and motor vehicle engines used in such vehicles,) a period of use of five years or 50,000 miles, whichever first occurs. However, in no case may this period be less than the basic mechanical warranty period that the manufacturer provides (with or without additional charge) to the purchaser of the engine. Extended warranties on select parts do not extend the emissions warranty requirements for the entire engine but only for those parts. In cases where responsibility for an extended warranty is shared between the owner and the manufacturer, the emissions warranty shall also be shared in the same manner as specified in the warranty agreement.

[Subsections (d) through (j) unchanged]

Note: Authority cited: Sections 39600 and 39601, Health and Safety Code. Reference: Sections

43106, 43204, 43205.5, 44004, 44010, 44011, 44012, 44015, and 44017, Health and Safety Code.

SECTION 2112, TITLE 13, CCR

Amend title 13, California Code of Regulations, section 2112 to read:

2112. Definitions.

(a) through (k) [No Change]

(l) "Useful life" means, for the purposes of this Article:

(1) For Class I motorcycles and motorcycle engines (50 to 169 cc or 3.1 to 10.4 cu. in.), a period of use of five years or 12,000 kilometers (7,456 miles), whichever first occurs.

(2) For Class II motorcycles and motorcycle engines (170 to 279 cc or 10.4 to 17.1 cu. in.), a period of use of five years or 18,000 kilometers (11,185 miles), whichever first occurs.

(3) For Class III motorcycles and motorcycle engines (280 cc and larger or 17.1 cu. in. and larger), a period of use of five years or 30,000 kilometers (18,641 miles), whichever first occurs.

(4) For 1982 through 1984 model-year diesel heavy-duty vehicles (except medium-duty vehicles), and 1982 through 1984 model-year motor vehicle engines used in such vehicles, a period of use of five years, 100,000 miles, or 3000 hours of operation, whichever first occurs.

(5) For 1982 through 1987 model-year gasoline heavy-duty vehicles (except medium-duty vehicles) certified using the steady-state emission standards and test procedures, and 1982 through 1987 model-year gasoline heavy-duty motor vehicle engines certified using the steady-state emission standards and test procedures, a period of use of five years or 50,000 miles, whichever first occurs.

(6) For 1987 ~~and subsequent~~ through 2003 model-year gasoline heavy-duty vehicles (except medium-duty vehicles) certified to the transient emission standards and test procedures, and 1987 and subsequent model-year gasoline heavy-duty motor vehicle engines certified using the transient emission standards and test procedures, a period of use of eight years or 110,000 miles, whichever first occurs, except as noted in paragraph (13).

(7) For 1985 through 2003 model-year heavy heavy-duty diesel urban buses, and 1985 through 2003 model-year heavy heavy-duty diesel engines to be used in urban buses, and f~~F~~or 1985 through 2003 ~~and subsequent~~ model-year diesel heavy-duty vehicles (except medium-duty vehicles), and 1985 through 2003 ~~and subsequent~~ model-year motor vehicle engines used in such vehicles, a period of use of eight years or 110,000 miles, whichever first occurs, for diesel light, heavy-duty vehicles; eight years or 185,000 miles, whichever first occurs, for diesel medium, heavy-duty vehicles; and eight years or 290,000 miles, whichever first occurs, for diesel heavy, heavy-duty vehicles, except as provided in paragraphs (11), (14), (15) and (16); or any alternative useful life period approved by the Executive Officer. (The classes of diesel light, medium, and heavy, heavy-duty vehicles are defined in 40 CFR section 86.085-2, as amended November 16, 1983.)

(8) For light-duty and medium-duty vehicles certified under the Optional 100,000 Mile Certification Procedure, and motor vehicle engines used in such vehicles, a period of use of ten years or 100,000 miles, whichever first occurs.

(9) For 1995 and subsequent model-year medium-duty vehicles, and motor vehicle engines used in such vehicles and 1992 and subsequent model-year medium-duty low-emission and ultra-low-emission vehicles, and motor vehicle engines used in such vehicles, a period of use of eleven years

or 120,000 miles, whichever occurs first.

(10) For all other light-duty and medium-duty vehicles, and motor vehicle engines used in such vehicles, a period of use of five years or 50,000 miles, whichever first occurs. For those passenger cars, light-duty trucks and medium-duty vehicles certified pursuant to section 1960.1.5, Title 13, California Code of Regulations, the useful life shall be seven years or 75,000 miles, whichever first occurs; however, the manufacturer's reporting and recall responsibility beyond 5 years or 50,000 miles shall be limited, as provided in section 1960.1.5. For those passenger cars and light-duty trucks certified pursuant to Title 13, California Code of Regulations, section 1960.1(f) and section 1960.1(g), the useful life shall be ten years or 100,000 miles, whichever first occurs; however, for those vehicles certified under section 1960.1(f), the manufacturer's warranty failure and defects reporting and recall responsibility shall be subject to the conditions and standards specified in section 1960.1(f).

(11) For 1994 through 2003 ~~and subsequent~~ model-year heavy heavy-duty diesel urban buses, and 1994 through 2003 ~~and subsequent~~ model-year heavy heavy-duty diesel engines to be used in urban buses, for the particulate standard, a period of use of ten years or 290,000 miles, whichever first occurs; or any alternative useful life period approved by the Executive Officer.

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

(13) For 1998 through 2003 ~~and subsequent~~ model-year gasoline heavy-duty engines, for the NOx standard, a period of use of ten years or 110,000 miles, whichever first occurs; or any alternative useful life period approved by the Executive Officer.

(14) For 1998 ~~and subsequent~~ through 2003 model-year light heavy-duty diesel engines, for the NOx standard, a period of use of ten years or 110,000 miles, whichever first occurs; or any alternative useful life period approved by the Executive Officer.

(15) For 1998 ~~and subsequent~~ through 2003 model-year medium heavy-duty diesel engines, for the NOx standard, a period of use of ten years or 185,000 miles, whichever first occurs; or any alternative useful life period approved by the Executive Officer.

(16) For 1998 ~~and subsequent~~ through 2003 model-year heavy heavy-duty diesel engines, for the NOx standard, a period of use of ten years or 290,000 miles, whichever first occurs; or any alternative useful life period approved by the Executive Officer.

(17) For 2004 and subsequent model-year light heavy-duty diesel engines, 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.

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

(19) For 2004 and subsequent model-year heavy heavy-duty diesel engines, 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 (19) (i) and (19) (ii).

(i) The useful life limit of 22,000 hours in paragraph (19) 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.

(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, as required under Clean Air Act section 202(d) (42 U.S.C. 7521(d)).

(20) For 2004 and subsequent model-year heavy-duty Otto-cycle engines, 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.

(m) [No Change]

(n) [No Change]

Appendix A to Article 2.1 [No Change]

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43104, and 43105, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43103, 43104, 43105, 43106, 43107, and 43204-43205.5, Health and Safety Code.

AMENDMENTS TO THE CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 1985 AND SUBSEQUENT MODEL HEAVY-DUTY DIESEL ENGINES AND VEHICLES

State of California
AIR RESOURCES BOARD

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 1985 AND SUBSEQUENT MODEL HEAVY-DUTY DIESEL-ENGINES AND VEHICLES

Adopted: April 8, 1985
Amended: July 29, 1986
Amended: January 22, 1990
Amended: May 15, 1990
Amended: December 26, 1990
Amended: July 12, 1991
Amended: October 23, 1992
Amended: October 22, 1993
Amended: March 24, 1994
Amended: September 22, 1994
Amended: June 29, 1995
Amended: June 4, 1997
Amended: February 26, 1999

NOTE: This document is printed in a style to indicate amendments to the existing California standards and test procedures. The amendments made in the present rulemaking to the existing California standards and test procedures are shown in underline to indicate additions to the text and ~~strikeout~~ to indicate deletions.

This document incorporates by reference various sections of the Code of Federal Regulations, some with modifications. Modifications to portions of paragraphs in the Federal language are also indicated by underline for additions and ~~strikeout~~ for deletions. Larger portions of Federal language for a specific section which is not to be included in these procedures are denoted by the word "DELETE" and larger portions of new California language are indicated by "REPLACE WITH" or "INSERT". The symbols "*****" and "....." mean that the remainder of the federal text for a specific section, which is not shown in these procedures, has been included by reference, with only the printed text changed. The symbols "#####" mean that the remainder of the text of these procedures, which is not shown in this amendment document, has not been changed.

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 1985 AND SUBSEQUENT MODEL HEAVY-DUTY DIESEL-ENGINES AND VEHICLES

The following provisions of Subparts A, I, and N, Part 86, Title 40, Code of Federal Regulations, as adopted or amended by the U.S. Environmental Protection Agency on the date listed, and only to the extent they pertain to the testing and compliance of exhaust emissions from heavy-duty Diesel-engines and vehicles, are adopted and incorporated herein by this reference as the California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel-Engines and Vehicles, except as altered or replaced by the provisions set forth below.

The federal regulations contained in the Subparts identified above which pertain to oxides of nitrogen emission averaging shall not be applicable to these procedures except for diesel engines and vehicles produced in the 1998 and subsequent model years. The federal regulations contained in the Subparts identified above which pertain to particulate emission averaging shall not be applicable to these procedures for 1996 and later model engines and vehicles except for diesel engines and vehicles produced in the 1998 and subsequent model years. The smoke exhaust test procedures shall be applicable to California petroleum-fueled, liquefied-petroleum gas-fueled, and compressed-natural gas fueled heavy-duty Diesel engines and vehicles for 1988 and later model years.

The federal regulations contained in the subparts identified above which pertain to nonconformance penalty shall not be applicable.

The federal regulations contained in the subparts identified above which pertain to evaporative emissions shall not be applicable to these procedures. Applicable regulations pertaining to evaporative emissions are contained in "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles," as incorporated in Title 13, California Code of Regulations, Section 1976.

Starting with the 1990 model year, these regulations shall be applicable to all heavy-duty Diesel natural-gas-fueled and liquefied-petroleum gas-fueled engines (and vehicles) including those engines derived from existing Diesel engines. For any engine which is not a distinctly Diesel engine nor derived from such, the Executive Officer shall determine whether the engine shall be subject to these regulations or alternatively to the heavy-duty Otto-cycle engine regulations, in consideration of the relative similarity of the engine's torque-speed characteristics and vehicle applications with those of Diesel and Otto-cycle engines.

The regulations concerning the certification of methanol-fueled diesel urban bus engines are not applicable in California until 1991 and subsequent model years. The regulations concerning the certification of all other methanol fueled diesel engines and vehicles are not applicable in California until 1993 and subsequent model years.

Regulations concerning the certification of incomplete medium-duty diesel low-emission vehicles and engines and ultra-low-emission vehicles and engines operating on any fuel are applicable for the 1992

and subsequent model years.

Subpart A, General Provisions for Emission Regulations for 1977 and Later model Year New Light-Duty Vehicles, Light-Duty Trucks, and Heavy-Duty Engines, and for 1985 and later Model Year New Gasoline-Fuel and Methanol Fueled Heavy-Duty Vehicles.

Adopt and amend § 86.004-2, Title 40, Code of Federal Regulations to read:

§ 86.004-2 Definitions. [October 21, 1997]

The definitions of ~~§ 86.001-2~~ §86.098-2 continue to apply to ~~2001~~1998 and later model year vehicles. The definitions listed in this section apply beginning with the 2004 model year.

Useful life means:

(1) DELETE

(2) DELETE

(3) DELETE

(4) For a diesel HDE family:

(i) For light heavy-duty diesel engines, 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.

(ii) For medium heavy-duty diesel engines, for carbon monoxide, particulate, and oxides of nitrogen plus non-methane hydrocarbons emission standards, a period of use of 10 years or 185,000 miles, whichever first occurs.

(iii) For heavy heavy-duty diesel engines, 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, except as provided in paragraphs (4)(iv) and (4)(v) of this definition.

(iv) The useful life limit of 22,000 hours in paragraph (4)(iii) 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.

(v) 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, as required under Clean Air Act section 202(d).

(5) As an option for ~~both light-duty trucks under certain conditions and~~ HDE families, an alternative useful life period may be assigned by the Administrator under the provisions of § 86.094-21(f).

Warranty period [DELETE, for guidance see California Code of Regulations, Title 13, §2036].

# # # # # #

Adopt and amend § 86.098-3, Title 40, Code of Federal Regulations to read:

86.098-3 Abbreviations. [October 21, 1997]

(a) The abbreviations in ~~§ 86.096-3~~ §86.090-3 continue to apply. The abbreviations in this section apply beginning with the 1998 model year.

(b) The abbreviations of this section apply to this subpart, and also to subparts ~~B, E, F, G, K, M,~~ N, ~~and P~~ of this part, and have the following meanings:

T subD --DELETE

ABT--Averaging, banking, and trading

HDE--Heavy-duty engine

# # # # # #

Repeal § 86.098-11, Title 40, Code of Federal Regulations [March 24, 1993]:

§ 86.098-11 Emission standards for 1998 and later model year diesel heavy-duty engines and vehicles and optional standards for 1995 through 1997 model year diesel havy-duty engines. [March 24, 1993.]

(a) Exhaust emissions from new 1998 and later model year diesel heavy-duty engines shall not exceed the following:

(1) DELETE

(2) DELETE

(3) Oxides of Nitrogen. (i) 4.0 grams per brake horsepower-hour (1.49 grams per megajoule), as measured under transient operating conditions.

(ii) A manufacturer may elect to certify 1998 and later model year diesel engines, for use in vehicles with a Gross Vehicle Weight Rating of greater than 14,000 pounds, other than urban transit buses, to an optional oxides of nitrogen standard between 0.5 grmas per brake horsepower-hour and 2.5 grams per brake horsepower-hour, inclusive, at 0.5 grams per brake horsepower-hour increments, as mearsured under transient operating conditions.

(4) DELETE

(b) DELETE

(c) DELETE

(d) DELETE

(e)(1) Exhaust emission standards for certain 1995 and later model year heavy-duty diesel engines may be optionally selected as follows:

(i) A manufacturer may elect to certify 1996 and later model year diesel engines for use in urban buses, to an optional exider of nitrogen standard between 0.5 grams per brake horsepower-hour and 2.5 grams per brake horsepower-hour, inclusive, at 0.5 grams per brake horsepower-hour increments, as measured under transient operating conditions.

(ii) A manufacturer may elect to certify 1995 through 1997 model year diesel engines for use invehicles with a Gross Vehicle Weight Rating of gr4ater than 14,000 pounds except urban bus engines, and 1994 through 1995 model year urban bus engines, to an optional oxides of nitrogen sandard between 0.5 grams per brake horseopower-hour and 3.5 grams per brake horsepower-hour, inclusive, at 0.5 grams per brake horsepower-hour increments, as measured under transient operating conditions.

# # # # # #

Adopt and amend § 86.098-11, Title 40, Code of Federal Regulations [October 21, 1997] to read:

§ 86.098-11 Emission standards for 1998 and later model year diesel heavy-duty engines and vehicles. [October 21, 1997]

(a) Exhaust emissions from new 1998 and later model year diesel heavy-duty engines shall not exceed the following:

(1) DELETE

(2) DELETE

(3) Oxides of Nitrogen.

(i) 4.0 grams per brake horsepower-hour (1.49 grams per megajoule), as measured under transient operating conditions.

(ii) A manufacturer may elect to include any or all of its diesel HDE families in ~~any or all~~ the banking portion of the NOx or NOx plus NMHC ABT programs for HDEs, within the restrictions described in this section and § 86.098-15 as applicable. ~~If the manufacturer elects to include engine families in any of these programs, the NOx FELs may not exceed 5.0 grams per brake horsepower-hour (1.9 grams per megajoule). This ceiling value applies whether credits for the family are derived from averaging, trading or banking programs.~~

(4) Particulate.

(i) DELETE

(ii) DELETE

(iii) A manufacturer may elect to include any or all of its diesel HDE families in ~~any or all~~ the banking portion of the particulate ABT programs for HDEs, within the restrictions described in this section and § 86.098-15 as applicable. ~~If the manufacturer elects to include engine families in any of these programs, the particulate FEL may not exceed:~~

(A) DELETE

(B) DELETE

(C) DELETE

(b) DELETE

(c) DELETE

(d) DELETE

(e) (1) Reduced-emission exhaust emission standards for certain 1995 and later model year heavy-duty diesel engines may be optionally selected as follows:

(i) A manufacturer may elect to certify 1996 through 2003 model year diesel engines for use in urban buses, to an optional reduced-emission oxides of nitrogen standard between 0.5 grams per brake horsepower-hour and 2.5 grams per brake horsepower-hour, inclusive, at 0.5 grams per brake horsepower-hour increments, as measured under transient operating conditions. Engines certified to a standard contained in this paragraph are not eligible to participate in NOx, NOx plus NMHC, or particulate ABT programs.

(ii) A manufacturer may elect to certify 1995 through 1997 model year diesel engines for use in vehicles with a Gross Vehicle Weight Rating of greater than 14,000 pounds except urban bus engines, and 1994 through 1995 model year urban bus engines, to an optional reduced-emission oxides of nitrogen standard between 0.5 grams per brake horsepower-hour and 3.5 grams per brake horsepower-hour, inclusive, at 0.5 grams per brake horsepower-hour increments, as measured under transient operating conditions. Engines certified to a standard contained in this paragraph are not eligible to participate in NOx, NOx plus NMHC, or particulate ABT programs.

(iii)A manufacturer may elect to certify 1998 through 2003 model year diesel engines, for use in vehicles with a Gross Vehicle Weight Rating of greater than 14,000 pounds, other than urban transit buses, to an optional reduced-emission oxides of nitrogen standard between 0.5 grams per brake horsepower-hour and 2.5 grams per brake horsepower-hour, inclusive, at 0.5 grams per brake horsepower-hour increments, as measured under transient operating conditions. Engines certified to a standard contained in this paragraph are not eligible to participate in NOx, NOx plus NMHC, or particulate ABT programs.

(f) 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 significantly different emission levels under each mode, may certify to a different NOx standard for each fueling mode, provided it meets the following requirements:

(1) The NOx certification standard used for certification under the higher emitting fueling mode must be the standard contained in (a)(3)(i) of this section, as appropriate.

(2) The NOx certification standard used for certification under the lower emitting fueling mode must be one of the reduced-emission standards contained in (e)(1) of this section, as appropriate.

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

(4) The engine family meets all other applicable emission standards in each fueling mode.

(5) The higher emitting fueling mode must be intended only for fail-safe vehicle operation in the case of a malfunction or inadvertent fuel depletion which precludes normal operation in the lower emitting fueling mode. Evidence of such design intent would be a significantly reduced horsepower versus engine speed curve when operating in the higher emitting fueling mode as compared to the curve while operating in the lower emitting fueling mode.

(6) All applicable exhaust emission testing, data submission, and certification application requirements must be met separately for each of the two fueling modes of operation, but should be submitted for ARB approval in a single package.

# # # # #

Adopt and amend § 86.004-11, Title 40, Code of Federal Regulations to read:

§ 86.004-11 Emission standards for 2004 and later model year diesel heavy-duty engines and vehicles. [October 21, 1997]

(a)(1) Exhaust emissions from new 2004 and later model year diesel HDEs shall not exceed the following:

(i)(A) Oxides of Nitrogen plus Non-methane Hydrocarbons (NOx + NMHC) for engines fueled with either petroleum fuel, natural gas, or liquefied petroleum gas, 2.4 grams per brake horsepower-hour (0.89 gram per megajoule), as measured under transient operating conditions.

(B) Oxides of Nitrogen plus Non-methane Hydrocarbon Equivalent (NOx + NMHCE) for engines fueled with methanol, 2.4 grams per brake horsepower-hour (0.89 gram per megajoule), as measured under transient operating conditions.

(C) Optional Standard. Manufacturers may elect to certify to an Oxides of Nitrogen plus Non-methane Hydrocarbons (or equivalent for methanol-fueled engines) standard of 2.5 grams per brake horsepower-hour (0.93 gram per megajoule), as measured under transient operating conditions, provided that Non-methane Hydrocarbons (or equivalent for methanol-fueled engines) do not exceed 0.5 grams per brake horsepower-hour (0.19 gram per megajoule) NMHC (or NMHCE for methanol-fueled engines), as measured under transient operating conditions.

(D) A manufacturer may elect to include any or all of its diesel HDE families in any or all of the emissions ABT programs for HDEs, within the restrictions described in § 86.004-15 or superseding applicable sections. If the manufacturer elects to include engine families in any of these programs, the NOx plus NMHC (or NOx plus NMHCE for methanol-fueled engines) FELs may not exceed 4.5 grams per brake horsepower-hour (1.7 grams per megajoule). This ceiling value applies whether credits for the family are derived from averaging, banking, or trading programs. Additionally, families certified to the optional standard contained in paragraph (a)(1)(i)(C) of this section shall not exceed 0.50 grams per brake horsepower-hour (0.19 gram per megajoule) NMHC (or NMHCE for methanol-fueled engines) through the use of credits.

(E) DELETE

(ii) DELETE

(iii) Particulate.

(A) DELETE

(B) DELETE

(C) A manufacturer may elect to include any or all of its diesel HDE families in any or all of the

particulate ABT programs for HDEs, within the restrictions described in this section and in § 86.004-15 or superseding applicable sections. If the manufacturer elects to include engine families in any of these programs, the particulate FEL may not exceed 0.25 gram per brake horsepower-hour (0.093 gram per megajoule).

(2) The standards set forth in paragraph (a)(1) of this section refer to the exhaust emitted over the operating schedule set forth in paragraph (f)(2) of appendix I to this part, and measured and calculated in accordance with the procedures set forth in subpart N or P of this part, except as noted in § 86.098-23(c)(2) or superseding sections.

(b) DELETE

(c) DELETE

(d) DELETE

(e) A manufacturer may elect to certify 2004 and later model year diesel engines, for use in vehicles with a Gross Vehicle Weight Rating of greater than 14,000 pounds, to an optional reduced-emission oxides of nitrogen plus nonmethane hydrocarbons (NOx plus NMHC) standard between 0.3 grams per brake horsepower-hour and 1.8 grams per brake horsepower-hour, inclusive, at 0.3 grams per brake horsepower-hour increments, as measured under transient operating conditions. Engines certified to a standard contained in this paragraph are not eligible to participate in NOx, NOx plus NMHC, or particulate ABT programs.

(f) 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 significantly different emission levels under each mode, may certify to a different NOx plus NMHC (depending on model year) standard for each fueling mode, provided it meets the following requirements:

(1) The NOx plus NMHC certification standard used for certification under the higher emitting fueling mode must be the standard contained in (a)(3)(i) of this section, as appropriate.

(2) The NOx plus NMHC certification standard used for certification under the lower emitting fueling mode must be one of the reduced-emission standards contained in (e) of this section, as appropriate.

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

(4) The engine family meets all other applicable emission standards in each fueling mode.

(5) The higher emitting fueling mode must be intended only for fail-safe vehicle operation in the case of a malfunction or inadvertent fuel depletion which precludes normal operation in the lower emitting fueling mode. Evidence of such design intent would be a significantly reduced horsepower versus

engine speed curve when operating in the higher emitting fueling mode as compared to the curve while operating in the lower emitting fueling mode.

(6) All applicable exhaust emission testing, data submission, and certification application requirements must be met separately for each of the two fueling modes of operation, but should be submitted for ARB approval in a single package.

# # # #

Adopt and amend § 86.098-15, Title 40, Code of Federal Regulations to read:

§ 86.098-15 NOx and particulate averaging, trading, and banking for heavy-duty engines, and NOx plus NMHC and particulate averaging, trading, and banking for medium-duty diesel-cycle engines certified under Title 13 California Code of Regulations §1956.8(h) for use in vehicles of more than 8,500 pounds through 14,000 pounds gross vehicle weight rating .
[October 21, 1997]

Introductory paragraph DELETE

New introductory paragraph (a) INSERT:

(a) Except as otherwise noted, references in this subsection to engines, heavy-duty engines, or HDEs shall include medium-duty diesel-cycle engines certified under Title 13 California Code of Regulations §1956.8(h) for sale in California for use in vehicles of more than 8,500 pounds through 14,000 pounds gross vehicle weight rating. Except as otherwise noted, references to NOx averaging, banking and trading programs shall mean NOx plus NMHC averaging, trading and banking programs when applied to such medium-duty diesel-cycle engines.

(a)(1) Heavy-duty engines eligible for NOx and particulate averaging, trading and banking programs are described in the applicable emission standards sections in this subpart or in Title 13 California Code of Regulations §1956.8(h) . Manufacturers of heavy-duty engines certified for use in vehicles sold in California must utilize the requirements of paragraph (j) of this section for the inclusion of such engines in averaging, trading and banking programs. All heavy-duty engine families which include any engines labeled for use in clean-fuel vehicles as specified in 40 CFR part 88 are not eligible for these programs. Participation in these programs is voluntary.

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(b) (6) If ~~EPA~~ARB or the manufacturer determines that a reporting error occurred on an end-of-year report previously submitted to ~~EPA~~ARB under this section, the manufacturer's credits and credit calculations will be recalculated. Erroneous positive credits will be void. Erroneous negative balances may be adjusted by ~~EPA~~ARB for retroactive use.

(i) If ~~EPA~~ARB review of a manufacturer's end-of-year report indicates a credit shortfall, the manufacturer will be permitted to purchase the necessary credits to bring the credit balance for that engine family to zero, at the ratio of 1.2 credits purchased for every credit needed to bring the balance to zero. If sufficient credits are not available to bring the credit balance for the engine family in question to zero, ~~EPA~~ARB may void the certificate for that engine family ab initio.

(ii) If within 180 days of receipt of the manufacturer's end-of-year report, ~~EPA~~ARB review determines a reporting error in the manufacturer's favor (i.e. resulting in a positive credit balance) or if the manufacturer discovers such an error within 180 days of ~~EPA~~ARB receipt of the end-of-year report, the credits will be restored for use by the manufacturer.

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(c)(1) For each participating engine family, NOx and particulate emission credits (positive or negative) are to be calculated according to one of the following equations and rounded, in accordance with ASTM E29-93a, to the nearest one-tenth of a Megagram (MG). Consistent units are to be used throughout the equation.

(i) For determining credit need for all engine families and credit availability for engine families generating credits for averaging programs only:

Emission credits = (Std-FEL) x (CF) x (UL) x (Production) x (10^{-6})

(ii) For determining credit availability for engine families generating credits for trading or banking programs:

Emission credits = (Std-FEL) x (CF) x (UL) x (Production) x (10^{-6}) x (Discount)

(c)(1) (iii) For purposes of the equations in paragraphs (c)(1)(i) and (ii) of this section:

Std = the current and applicable heavy-duty engine NOx or particulate emission standard in grams per brake horsepower hour or grams per Megajoule. In the case of medium-duty engines, Std= the Tier 1 standard for the 1998 through 2001 model years, the LEV standard for the 2002 through 2003 model years, and the ULEV standard for the 2004 and subsequent model years.

FEL = the NOx or particulate family emission limit for the engine family in grams per brake horsepower hour or grams per Megajoule.

CF = a transient cycle conversion factor in BHP-hr/mi or MJ/mi, as given in paragraph (c)(2) of this section.

UL = the useful life, or alternative life as described in paragraph (f) of § 86.094-21, for the given engine family in miles.

Production = the number of engines produced for U.S. sales within the given engine family during the model year. In the case of medium-duty engines and light heavy-duty engines, Production= the number of engines produced for California sales within the given engine family during the model year. Quarterly production projections are used for initial certification. Actual production is used for end-of-year compliance determination.

Discount = a one-time discount applied to all credits to be banked or traded within the model year generated. The discount applied here is 0.8. Banked credits traded in a subsequent model year will not be subject to an additional discount. Banked credits used in a subsequent model year's averaging program will not have the discount restored.

****

(d) Averaging sets for NOx emission credits: The averaging and trading of NOx emission credits will only be allowed between heavy-duty engine families in the same averaging set ~~and in the same regional category. Engines produced for sale in California constitute a separate regional category than engines produced for sale in the other 49 states~~. ~~Banking and trading are not applicable to engines sold in California.~~ Engines sold in California may only be used to generate credits to be banked for use in the year 2004 and later, according to paragraph (j) of this section. The averaging sets for the averaging and trading of NOx emission credits for heavy-duty engines are defined as follows:

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(d)(2) For diesel cycle heavy-duty engines:

(i) ~~Each of the three primary intended service classes for heavy-duty diesel engines~~ Heavy heavy-duty engines and medium heavy-duty engines, as defined in § 86.090-2, each constitute an averaging set. Light heavy-duty engines, as defined in § 86.090-2, for use in vehicles of more than 14,000 pounds gross vehicle weight rating, and medium-duty engines certified under Title 13 California Code of Regulations §1956.8(h) for use in vehicles of more than 8,500 pounds through 14,000 pounds gross vehicle weight rating, combined constitute an averaging set. Averaging and trading among all diesel-cycle engine families within the same ~~primary service class~~ averaging set is allowed.

(ii) Urban buses are treated as members of the primary intended service class where they otherwise would fall.

*****

(e) Averaging sets for particulate emission credits. The averaging and trading of particulate emission credits will only be allowed between diesel cycle heavy-duty engine families in the same averaging set ~~and in the same regional category. Engines produced for sale in California constitute a separate regional category than engines produced for sale in the other 49 states~~. ~~Banking and trading are not applicable to engines sold in California.~~ Engines sold in California may only be used to generate credits to be banked for use in the year 2004 and later, according to paragraph (j) of this section. The averaging sets for the averaging and trading of particulate emission credits for diesel cycle heavy-duty engines are defined as follows:

(1) Engines intended for use in urban buses constitute a separate averaging set from all other heavy-duty engines. Averaging and trading between diesel cycle bus engine families is allowed.

(2) For heavy-duty engines, exclusive of urban bus engines, ~~each of the three primary intended service classes for heavy-duty diesel cycle engines~~ heavy heavy-duty engines and medium heavy-duty engines, as defined in § 86.090-2, each constitute an averaging set. Light heavy-duty engines, as defined in § 86.090-2, for use in vehicles of more than 14,000 pounds gross vehicle weight rating and

medium-duty engines certified under Title 13 California Code of Regulations §1956.8(h) for use in vehicles of more than 8,500 pounds through 14,000 pounds gross vehicle weight rating, combined constitute an averaging set. Averaging and trading between diesel-cycle engine families within the same ~~primary service class~~ averaging set is allowed.

(3) Otto cycle engines may not participate in particulate averaging, trading, or banking.

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(f)(1)(ii) Manufacturers may bank credits only after the end of the model year and after actual credits have been reported to ~~EPA~~ARB in the end-of-year report. During the model year and before submittal of the end-of-year report, credits originally designated in the certification process for banking will be considered reserved and may be redesignated for trading or averaging.

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(f)(3)(i) Banked credits may be used in averaging, or in trading, or in any combination thereof, during the certification period. Credits declared for banking from the previous model year but not reported to ~~EPA~~ARB may also be used. However, if ~~EPA~~ARB finds that the reported credits can not be proven, they will be revoked and unavailable for use.

*****

(i) DELETE

(j) ~~Optional program~~ Program for early banking. Provisions set forth in paragraphs (a) through (i) of this section apply ~~except as specifically stated otherwise~~ only as allowed in paragraph (j) of this section. The procedures of paragraph (j) must be utilized for engines certified for sale in California to participate in ABT programs.

(1) To be eligible for the ~~optional~~ program described in paragraph (j) of this section, the following must apply:

(i) Credits are generated from diesel cycle heavy-duty engines certified and labeled for use in California vehicles.

(ii) During certification, the manufacturer shall declare its intent to include specific engine families in the program described in this paragraph (j). Separate declarations are required for each program and no engine families may be included in both programs in the same model year.

(2) Credit generation and use.

(i) Credits shall only be generated by 1998 and later model year engine families.

(ii) Credits may only be used for 2004 and later model year heavy-duty diesel engines. When used with 2004 and later model year engines, NOx credits may be used to meet the NOx plus NMHC

standard, except as otherwise provided in § 86.004-11(a)(1)(i)(D), and under the requirements of 86.004-15.

(iii) DELETE

(3) Program flexibilities.

(i) NOx and PM credits that are banked until model year 2004 under this paragraph (j) may be used in 2004 or any model year thereafter without being forfeited due to credit age. This supersedes the requirement in paragraph (f)(2)(i) of this section.

(ii) There are no regional category restraints for averaging, trading, and banking of credits generated under the program described in paragraph (j) of this section, except as noted in paragraphs (d), (e), and (j)(1)(i) of this section. ~~This supersedes the regional category provisions described in the opening text of paragraphs (d) and (e) of this section.~~

(iii) Credit discounting.

(A) For NOx and PM credits generated under this paragraph (j) from heavy-duty engine families with NOx certification levels greater than 3.5 grams per brake horsepower-hour for oxides of nitrogen, a Discount value of 0.9 shall be used in place of 0.8 in the credit availability equation in paragraph (c)(1) of this section. For credits generated from medium duty engine families, a Discount value of 0.9 shall be used if the NOx plus NMHC value is greater than the applicable standard required in subparagraph (c)(1)(iii) less 0.5 g/BHP-hr.

(B) For NOx and PM credits generated under this paragraph (j) from heavy-duty engine families with NOx certification levels less than or equal to 3.5 grams per brake horsepower-hour for oxides of nitrogen, a Discount value of 1.0 shall be used in place of 0.8 in the credit availability equation in paragraph (c)(1) of this section. For credits generated from medium duty engine families, a Discount value of 1.0 shall be used if the NOx plus NMHC value is less than the applicable standard required in subparagraph (c)(1)(iii) less 0.5 g/BHP-hr.

(iv) Credit apportionment. At the manufacturer's option, marketable emission reduction credits for NOx, for use in emission reduction credit programs other than ABT, may be generated based upon engine certification to the optional reduced-emission NOx certification standards of § 86.098-11(e), except that medium-duty engines certified under Title 13 California Code of Regulations §1956.8(h) for use in vehicles of more than 8,500 pounds through 14,000 pounds gross vehicle weight rating may not be used as the basis for generating marketable emission reduction credits. Use of any marketable emission reduction credits generated must meet the requirements of the individual emission reduction credit program where the credits will be applied.~~credits generated under the provisions described in this section may be sold to or otherwise provided to another party for use in programs other than the averaging, trading and banking program described in this section~~.

(A) ~~The manufacturer shall pre-identify two emission levels per engine family for the purposes of~~

~~credit apportionment. One emission level shall be the FEL and the other shall be the level of the standard that the engine family is required to certify to under § 86.098-11. For each engine family, the manufacturer may report engine sales in two categories, "ABT-only credits" and "nonmanufacturer-owned credits".~~ For those engine sales used to generate ABT credits, the manufacturer shall report engine sales in the category "ABT-only credits". For those engine sales certified to generate marketable emission reduction credits for NOx, the manufacturer shall report engine sales in the category "nonmanufacturer-owned credits".

(1) For engine sales reported as "ABT-only credits", the credits generated must be used solely in the ABT program described in this section or §86.004-15.

(2) The engine manufacturer may declare a portion of engine sales "nonmanufacturer-owned credits" and ~~this portion of the credits generated between the standard and the FEL, based on the calculation in paragraph (c)(1) of this section,~~ any marketable NOx credits generated based upon such sales would belong to another party. For ABT, the manufacturer may not generate any credits for the engine sales reported as "nonmanufacturer-owned credits". ~~Engines reported as "nonmanufacturer-owned credits" shall comply with the FEL and the requirements of the ABT program in all other respects.~~

(B) Only manufacturer-owned credits resulting from engine sales reported as "ABT-only credits" shall be used in the averaging, trading, and banking provisions described in this section.

(C) Credits shall not be double-counted. Credits used in the ABT program may not be provided to an engine purchaser for use in another program.

(D) Manufacturers shall determine and state the number of engines sold as "ABT-only credits" and "nonmanufacturer-owned credits" in the end-of-model year reports required under § 86.098-23.

(v) For medium-duty diesel-cycle engines certified under Title 13 California Code of Regulations 1956.8(h) for use in vehicles of more than 8,500 pounds through 14,000 pounds gross vehicle weight rating:

(1) From the 1998 model year through the 2005 model year, credits may be generated by an alternative mechanism proposed by the engine manufacturer and approved by the Executive Officer of the ARB. The alternative credit-generating mechanism shall not include any attribute expressly prohibited under the federal ABT program, such as cross-class or cross-fuel trading.

(2) Manufacturers must annually submit a proposed plan for generating credits to the Executive Officer of the ARB and have it approved prior to sale of engines of that model year in California.

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Adopt and amend § 86.004-15, Title 40, Code of Federal Regulations to read:

§ 86.004-15 NOx and particulate averaging, trading, and banking for heavy-duty engines, and NOx plus NMHC and particulate averaging, trading, and banking for medium-duty diesel-cycle engines certified under Title 13 California Code of Regulations §1956.8(h) for use in vehicles of more than 8,500 pounds through 14,000 pounds gross vehicle weight rating.
[October 21, 1997]

New introductory paragraph (a) INSERT:

(a) Except as otherwise noted, references in this subsection to engines, heavy-duty engines or HDEs shall include medium-duty diesel-cycle engines certified under Title 13 California Code of Regulations §1956.8(h) for sale in California for use in vehicles of more than 8,500 pounds through 14,000 pounds gross vehicle weight rating. Except as otherwise noted, references to NOx averaging, banking and trading programs shall mean NOx plus NMHC averaging, trading and banking programs when applied to such medium-duty diesel-cycle engines.

(a)(1) Heavy-duty engines eligible for NOx, NOx plus NMHC, and particulate averaging, trading and banking programs are described in the applicable emission standards sections in this subpart or in Title 13 California Code of Regulations §1956.8(h). All heavy-duty engine families which include any engines labeled for use in clean-fuel vehicles as specified in 40 CFR part 88 are not eligible for these programs. Participation in these programs is voluntary.

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(b) Participation in the NOx, NOx plus NMHC, and/or particulate averaging, trading, and banking programs shall be done as follows.

(1) During certification, the manufacturer shall:

(i) Declare its intent to included specific engine families in the averaging, trading and/or banking programs. Separate declarations are required for each program and for each pollutant (i.e., NOx, NOx plus NMHC, and particulate).

(ii) Declare an FEL for each engine family participating in one or more of these three programs.

(A) The FEL must be to the same level of significant digits as the emission standard (one-tenth of a gram per brake horsepower-hour for NOx, NOx plus NMHC, emissions and one-hundredth of a gram per brake horsepower-hour for particulate emissions).

(B) In no case may the FEL exceed the upper limit prescribed in the section concerning the applicable heavy-duty engine NOx, NOx plus NMHC, and particulate emission standards. In the case of medium-duty engines certified under Title 13 California Code of Regulations §1956.8(h) for use in vehicles of more than 8,500 pounds through 14,000 pounds gross vehicle weight rating, the FEL is

subject to the same upper limit as required for heavy-duty engines.

(iii) Calculate the projected emission credits (positive or negative) based on quarterly production projections for each participating family and for each pollutant, using the applicable equation in paragraph (c) of this section and the applicable factors for the specific engine family.

(iv)(A) Determine and state the source of the needed credits according to quarterly projected production for engine families requiring credits for certification.

(B) State where the quarterly projected credits will be applied for engine families generating credits.

(C) Credits may be obtained from or applied to only engine families within the same averaging set as described in paragraphs (d) or (e) of this section. Credits available for averaging, trading, or banking as defined in § 86.090-2, may be applied exclusively to a given engine family, or reserved as defined in § 86.091-2.

(D) Credits generated before the year 2004 to be used to certify engines in the combined light heavy-duty and medium-duty averaging set, as described in paragraphs (d)(2)(i) and (e)(2), in the year 2004 and later, must have been generated through the sale of engines in California.

(2) Based on this information each manufacturer's certification application must demonstrate:

(i) That at the end of model year production, each engine family has a net emissions credit balance of zero or more using the methodology in paragraph (c) of this section with any credits obtained from averaging, trading or banking.

(ii) The source of the credits to be used to comply with the emission standard if the FEL exceeds the standard, or where credits will be applied if the FEL is less than the emission standard. In cases where credits are being obtained, each engine family involved must state specifically the source (manufacturer/engine family) of the credits being used, including the year of generation of the credits being used and whether the credits were generated from engines sold in California or from 49-state engines. In cases where credits are being generated/supplied, each engine family involved must state specifically the designated use (manufacturer/engine family or reserved) of the credits involved. All such reports shall include all credits involved in averaging, trading or banking.

(3) During the model year manufacturers must:

(i) Monitor projected versus actual production to be certain that compliance with the emission standards is achieved at the end of the model year.

(ii) Provide the end-of-model year reports required under § 86.001-23.

(iii) For manufacturers participating in emission credit trading, maintain the quarterly records required under § 86.091-7(c)(8).

(4) Projected credits based on information supplied in the certification application may be used to obtain a certificate of conformity. However, any such credits may be revoked based on review of end-of-model year reports, follow-up audits, and any other compliance measures deemed appropriate by the Administrator.

(5) Compliance under averaging, banking, and trading will be determined at the end of the model year. Engine families without an adequate amount of NOx, NOx plus NMHC, and/or particulate emission credits will violate the conditions of the certificate of conformity. The certificates of conformity may be voided *ab initio* for engine families exceeding the emission standard.

(6) If ~~EPA~~ARB or the manufacturer determines that a reporting error occurred on an end-of-year report previously submitted to ~~EPA~~ARB under this section, the manufacturer's credits and credit calculations will be recalculated. Erroneous positive credits will be void. Erroneous negative balances may be adjusted by ~~EPA~~ARB for retroactive use.

(i) If ~~EPA~~ARB review of a manufacturer's end-of-year report indicates a credit shortfall, the manufacturer will be permitted to purchase the necessary credits to bring the credit balance for that engine family to zero, using the discount specified in paragraph (c)(1) of this section on the ratio of credits purchased for every credit needed to bring the balance to zero. If sufficient credits are not available to bring the credit balance for the family in question to zero, ~~EPA~~ARB may void the certificate for that engine family *ab initio*.

(ii) If within 180 days of receipt of the manufacturer's end-of-year report, ~~EPA~~ARB review determines a reporting error in the manufacturer's favor (i.e., resulting in a positive credit balance) or if the manufacturer discovers such an error within 180 days of ~~EPA~~ARB receipt of the end-of-year report, the credits will be restored for use by the manufacturer.

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(c)(1)(iv) For medium-duty diesel-cycle engines certified in the 2004 and 2005 model years under Title 13 California Code of Regulations §1956.8(h) for use in vehicles of more than 8,500 pounds through 14,000 pounds gross vehicle weight rating, an additional adjustment to the Std value described in (c)(1)(iii) above, allowing for certification using Federal certification fuel may be made on an individual engine family basis as determined by the ARB Executive Officer upon application by the engine manufacturer.

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(c)(2)(ii) When more than one configuration is chosen by ~~EPA~~ARB to be tested in the certification of an engine family (as described in § 86.085-24), the conversion factor used is to be based upon a production weighted average value of the configurations in an engine family to calculate the conversion factor.

*****

(d)(2) For NOx plus NMHC credits from diesel-cycle heavy-duty engines:

(i) ~~Each of the three primary intended service classes for heavy-duty diesel engines~~ Heavy heavy-duty engines and medium heavy-duty engines, as defined in § 86.004-2, each constitute an averaging set. Light heavy-duty engines, as defined in § 86.004-2, for use in vehicles of more than 14,000 pounds gross vehicle weight rating and medium-duty engines certified under Title 13 California Code of Regulations §1956.8(h) for use in vehicles of more than 8,500 pounds through 14,000 pounds gross vehicle weight rating, combined constitute an averaging set. Averaging and trading among all diesel-cycle engine families within the same ~~primary service class~~ averaging set is allowed.

(ii) Urban buses are treated as members of the primary intended service class where they otherwise would fall.

(e) Averaging sets for particulate emission credits.

*****

(2) For heavy-duty engines, exclusive of urban bus engines, ~~each of the three primary intended service classes for heavy-duty diesel cycle engines~~ heavy heavy-duty engines and medium heavy-duty engines, as defined in § 86.004-2, each constitute an averaging set. Light heavy-duty engines, as defined in § 86.004-2, for use in vehicles of more than 14,000 pounds gross vehicle weight rating and medium-duty engines certified under Title 13 California Code of Regulations §1956.8(h) for use in vehicles of more than 8,500 pounds through 14,000 pounds gross vehicle weight rating, combined constitute an averaging set. Averaging and trading between diesel-cycle engine families within the same ~~primary service class~~ averaging set is allowed.

(3) Otto cycle engines may not participate in particulate averaging, trading, or banking.

*****

(f)(1)(ii) Manufacturers may bank credits only after the end of the model year and after actual credits have been reported to ~~EPA~~ARB in the end-of-year report. During the model year and before submittal of the end-of-year report, credits originally designated in the certification process for banking will be considered reserved and may be redesignated for trading or averaging.

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(f)(3) Use of banked emission credits. The use of banked credits shall be within the averaging set and other restrictions described in paragraphs (d) and (e) of this section, and only for the following purposes:

(i) Banked credits may be used in averaging, or in trading, or in any combination thereof, during the certification period. Credits declared for banking from the previous model year but not reported to ~~EPA~~ARB may also be used. However, if ~~EPA~~ARB finds that the reported credits can not be proven, they will be revoked and unavailable for use.

(ii) Banked credits may not be used for NOx, NOx plus NMHC, or particulate averaging and trading to offset emissions that exceed an FEL. Banked credits may not be used to remedy an in-use nonconformity determined by a Selective Enforcement Audit or by recall testing. However, banked credits may be used for subsequent production of the engine family if the manufacturer elects to recertify to a higher FEL.

(iii) Banked NOx credits from 2003 and prior may be used in place of NOx plus NMHC credits after 2003 provided that they are used in the correct averaging set and the NOx credits have not expired.

(iv) Banked credits generated before the 2004 model year to be applied toward the certification of engines in the combined light heavy-duty and medium-duty averaging set, as described in paragraphs (d)(2)(i) and (e)(2) above, must have been generated through the sale of eligible engines within California. Credits generated before the 2004 model year from engines sold outside of California may not be used to certify light heavy-duty or medium-duty engines for sale in California.

*****

(i) DELETE

(j) Credit apportionment. At the manufacturer's option, marketable emission reduction credits for NOx plus NMHC, for use in emission reduction credit programs other than ABT, may be generated based upon engine certification to the optional reduced-emission NOx plus NMHC certification standards of § 86.004-11(e), except that medium-duty engines certified under Title 13 California Code of Regulations §1956.8(h) for use in vehicles of more than 8,500 pounds through 14,000 pounds gross vehicle weight rating may not be used as the basis for generating marketable emission reduction credits. Use of any marketable emission reduction credits generated must meet the requirements of the individual emission reduction credit program where the credits will be applied. ~~credits generated from diesel-cycle heavy-duty engines under the provisions described in this section may be sold to or otherwise provided to another party for use in programs other than the averaging, trading and banking program described in this section.~~

(1) ~~The manufacturer shall pre-identify two emission levels per engine family for the purposes of credit apportionment. One emission level shall be the FEL and the other shall be the level of the standard that the engine family is required to certify to under § 86.004-11. For each engine family, the manufacturer may report engine sales in two categories, "ABT-only credits" and "nonmanufacturer-owned credits".~~ For those engine sales used to generate ABT credits, the manufacturer shall report engine sales in the category "ABT-only credits". For those engine sales certified to generate marketable emission reduction credits for NOx, the manufacturer shall report engine sales in the category "nonmanufacturer-owned credits".

(i) For engine sales reported as "ABT-only credits", the credits generated must be used solely in the ABT program described in this section.

(ii) The engine manufacturer may declare a portion of engine sales "nonmanufacturer-owned credits"

and ~~this portion of the credits generated between the standard and the FEL, based on the calculation in paragraph (c)(1) of this section,~~ any marketable NOx credits generated based upon such sales would belong to the engine purchaser. For ABT, the manufacturer may not generate any credits for the engine sales reported as "nonmanufacturer-owned credits". ~~Engines reported as "nonmanufacturer-owned credits" shall comply with the FEL and the requirements of the ABT program in all other respects.~~

(2) Only manufacturer-owned credits resulting from engine sales reported as "ABT-only credits" shall be used in the averaging, trading, and banking provisions described in this section.

(3) Credits shall not be double-counted. Credits used in the ABT program may not be provided to an engine purchaser for use in another program.

(4) Manufacturers shall determine and state the number of engines sold as "ABT-only credits" and "nonmanufacturer-owned credits" in the end-of-model year reports required under § 86.098-23.

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(l) For medium-duty diesel-cycle engines certified under Title 13 California Code of Regulations1956.8(h) for use in vehicles of more than 8,500 pounds through 14,000 pounds gross vehicle weight rating:

(1) Credits may be generated by an alternative mechanism proposed by the engine manufacturer and approved by the Executive Officer of the ARB. The alternative credit-generating mechanism shall not include any attribute expressly prohibited under the federal ABT program, such as cross-class or cross-fuel trading.

(2) Manufacturers must annually submit a proposed plan for generating credits to the Executive Officer of the ARB and have it approved prior to sale of engines of that model year in California.

#####

Adopt and amend § 86.098-21, Title 40, Code of Federal Regulations to read:

§ 86.098-21 Application for certification. [October 21, 1997]

*****

(b)(2) DELETE
REPLACE WITH:

(2) For 1992 and subsequent model-year low-emission and ultra-low-emission vehicles and engines not powered exclusively by diesel, projected California sales data and fuel economy estimates two years prior to certification, and projected California sales data for all vehicles and engines, regardless of operating fuel or vehicle emission category, sufficient to enable the Executive Officer to select a test fleet representative of the vehicles (or engines) for which certification is requested at the time of certification.

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Adopt and amend § 86.004-21, Title 40, Code of Federal Regulations to read:

§ 86.004-21 Application for certification. [October 21, 1997]

*****

(b)(2) DELETE
REPLACE WITH:

(2) For 1992 and subsequent model-year low-emission and ultra-low-emission vehicles and engines not powered exclusively by diesel, projected California sales data and fuel economy estimates two years prior to certification, and projected California sales data for all vehicles and engines, regardless of operating fuel or vehicle emission category, sufficient to enable the Executive Officer to select a test fleet representative of the vehicles (or engines) for which certification is requested at the time of certification.

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Adopt and amend § 86.098-23, Title 40, Code of Federal Regulations to read:

§ 86.098-23 Required data. [Oct. 21, 1997]

*****

(b)(1) (ii) The manufacturer shall submit exhaust emission deterioration factors for light-duty trucks and HDEs and all test data that are derived from the testing described under § 86.094-21(b)(5)(i)(A), as well as a record of all pertinent maintenance. Such testing shall be designed and conducted in accordance with good engineering practice to assure that the engines covered by a certificate issued under § 86.098-30 will meet each emission standard (or family emission limit, as appropriate) in § 86.094-9, § 86.098-10, § 86.098-11 or superseding emissions standards sections as appropriate, in actual use for the useful life applicable to that standard. Such data shall be submitted to the Executive Officer for review. If the durability test method is accepted by EPA, it shall also be accepted by ARB, subject to the following condition. If, after certification for the first model year in which the method is used, the Executive Officer determines that a manufacturer's durability test procedures do not conform with good engineering practices, the Executive Officer may require changes to that manufacturer's durability test procedures for subsequent model years. The manufacturer's revised durability test procedures shall be submitted to the Executive Officer for review and approval.

*****

(c) Emission data--

(1) Certification vehicles. The manufacturer shall submit emission data, including, in the case of methanol fuel, methanol, formaldehyde, and total hydrocarbon equivalent, on such vehicles tested in accordance with applicable test procedures and in such numbers as specified. These data shall include zero-mile data, if generated, and emission data generated for certification as required under § 86.094-26 (a)(3)(i) or (ii). In lieu of providing emission data on idle CO emissions or particulate emissions from methanol-fueled diesel certification vehicles, the Administrator may, on request of the manufacturer, allow the manufacturer to demonstrate (on the basis of previous emission tests, development tests, or other information) that the engine will conform with certain applicable emission standards of § 86.094-8 or § 86.094-9. Standards eligible for such manufacturer requests are those for idle CO emissions, smoke emissions, or particulate emissions from methanol-fueled diesel-cycle certification vehicles, and those for particulate emissions from model year 1994 and later gasoline-fueled or methanol-fueled Otto-cycle certification vehicles that are not certified to the Tier 0 standards of § 86.094- 9(a)(1)(i), (ii), or § 86.094-8(a)(1)(i). Also eligible for such requests are standards for total hydrocarbon emissions from model year 1994 and later certification vehicles that are no certified to the Tier 0 standards of § 86.094-9(a)(1)(i), (ii), or § 86.094-8(a)(1)(i). By separate request, including appropriate supporting test data, the manufacturer may request that the Administrator also waive the requirement to measure particulate emissions when conducting Selective Enforcement Audit testing of Otto-cycle vehicle.

(c)(2) Certification engines.

(i) The manufacturer shall submit emission data on such engines tested in accordance with applicable emission test procedures of this subpart and in such numbers as specified. These data shall include zero-hour data, if generated, and emission data generated for certification as required under § ~~86.098-26(c)(4)~~ 86.090-26(c)(4). These data shall also include, where there is a combined standard (e.g., NMHC + NOx), emissions data for the individual pollutants as well as for the pollutants when combined. In lieu of providing emission data on idle CO emissions or particulate emissions from methanol-fueled diesel-cycle certification engines, or on CO emissions from petroleum-fueled or methanol- fueled diesel certification engines the Administrator may, on request of the manufacturer, allow the manufacturer to demonstrate (on the basis of previous emission tests, development tests, or other information) that the engine will conform with the applicable emission standards of § 86.094-11 or superseding emissions standards sections as applicable. In lieu of providing emission data on smoke emissions from methanol-fueled or petroleum-fueled diesel certification engines, the Administrator may, on the request of the manufacturer, allow the manufacturer to demonstrate (on the basis of previous emission tests, development tests, or other information) that the engine will conform with the applicable emissions standards of § 86.098-11 or superseding emissions standards sections as applicable, except for engines with a particulate matter certification level exceeding 0.25 grams per brake horsepower-hour. In lieu of providing emissions data on smoke emissions from petroleum-fueled or methanol-fueled diesel engines when conducting Selective Enforcement Audit testing under 40 CFR part 86, subpart K, the Administrator may, on separate request of the manufacturer, allow the manufacturer to demonstrate (on the basis of previous emission tests, development tests, or other information) that the engine will conform with the applicable smoke emissions standards of § 86.098-11 or superseding emissions standards sections as applicable, except for engines with a particulate matter certification level exceeding 0.25 grams per brake horsepower-hour.

*****

(h) ~~Additionally, manufacturers~~ Manufacturers participating in any of the emissions ABT programs under § 86.098-15 or superseding ABT sections for HDEs shall submit for each participating family the items listed in paragraphs (h) (1) through (3) of this section.

*****

(h)(3) (i) These reports shall be submitted within 90 days of the end of the model year to: ~~Director, Engine Programs and Compliance Division (6405J), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460~~ Chief, Mobile Source Operations Division, California Air Resources Board, 9528 Telstar Avenue, El Monte, California 91731.

(ii) These reports shall indicate the engine family, the averaging set, the actual U.S. (49-state or 50-state, as applicable) production volume, the values required to calculate credits as given in the applicable ABT section, the resulting type and number of credits generated/required, and the NCPs in use on a similar NCP family. Manufacturers shall also submit how and where credit surpluses ~~were~~

~~dispersed (or~~ are to be banked~~) and how and through what means credit deficits were met~~. Copies of contracts related to credit trading must also be included or supplied by the broker if applicable. The report shall also include a calculation of credit balances to show that net mass emissions balances are within those allowed by the emission standards (equal to or greater than a zero credit balance). Any credit discount factor described in the applicable ABT section must be included as required.

*****

(j) Failure by a manufacturer generating credits for deposit only in the HDE banking programs to submit their end-of-year reports in the applicable specified time period (i.e., 90 days after the end of the model year) shall result in the credits not being available for use until such reports are received and reviewed by ~~EPA~~ ARB. Use of projected credits pending ~~EPA~~ ARB review will not be permitted in these circumstances.

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Adopt and amend § 86.001-23, Title 40, Code of Federal Regulations to read:

§ 86.001-23 Required data. [October 21, 1997]

The provisions of this section are effective beginning with the 2004 model year.

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(b)(1) (ii) The manufacturer shall submit exhaust emission deterioration factors for light-duty trucks and HDEs and all test data that are derived from the testing described under § 86.094-21(b)(5)(i)(A), as well as a record of all pertinent maintenance. Such testing shall be designed and conducted in accordance with good engineering practice to assure that the engines covered by a certificate issued under § 86.098-30 will meet each emission standard (or family emission limit, as appropriate) in § 86.094-9, § 86.098-10, § 86.098-11 or superseding emissions standards sections as appropriate, in actual use for the useful life applicable to that standard. Such data shall be submitted to the Executive Officer for review. If the durability test method is accepted by EPA, it shall also be accepted by ARB, subject to the following condition. If, after certification for the first model year in which the method is used, the Executive Officer determines that a manufacturer's durability test procedures do not conform with good engineering practices, the Executive Officer may require changes to that manufacturer's durability test procedures for subsequent model years. The manufacturer's revised durability test procedures shall be submitted to the Executive Officer for review and approval.

*****

(c) Emission data--

(1) Certification vehicles. The manufacturer shall submit emission data, including, in the case of methanol fuel, methanol, formaldehyde, and total hydrocarbon equivalent, on such vehicles tested in accordance with applicable test procedures and in such numbers as specified. These data shall include zero-mile data, if generated, and emission data generated for certification as required under § 86.094-26(a)(3)(i) or (ii). In lieu of providing emission data on idle CO emissions or particulate emissions from methanol-fueled diesel certification vehicles, the Administrator may, on request of the manufacturer, allow the manufacturer to demonstrate (on the basis of previous emission tests, development tests, or other information) that the engine will conform with certain applicable emission standards of § 86.094-8 or § 86.094-9. Standards eligible for such manufacturer requests are those for idle CO emissions, smoke emissions, or particulate emissions from methanol-fueled diesel-cycle certification vehicles, and those for particulate emissions from model year 1994 and later gasoline-fueled or methanol-fueled Otto-cycle certification vehicles that are not certified to the Tier 0 standards of § 86.094- 9(a)(1)(i), (ii), or § 86.094-8(a)(1)(i). Also eligible for such requests are standards for total hydrocarbon emissions from model year 1994 and later certification vehicles that are no certified to the Tier 0 standards of § 86.094-9(a)(1)(i), (ii), or § 86.094-8(a)(1)(i). By separate request, including appropriate supporting test data, the manufacturer may request that the Administrator also waive the requirement to measure particulate emissions when conducting Selective Enforcement Audit testing of Otto-cycle vehicle.

(c)(2) Certification engines.

(i) The manufacturer shall submit emission data on such engines tested in accordance with applicable emission test procedures of this subpart and in such numbers as specified. These data shall include zero-hour data, if generated, and emission data generated for certification as required under § ~~86.098-26~~ 86.090-26 (c)(4). These data shall also include, where there is a combined standard (e.g., NMHC + NOx), emissions data for the individual pollutants as well as for the pollutants when combined. In lieu of providing emission data on idle CO emissions or particulate emissions from methanol-fueled diesel-cycle certification engines, or on CO emissions from petroleum-fueled or methanol- fueled diesel certification engines the Administrator may, on request of the manufacturer, allow the manufacturer to demonstrate (on the basis of previous emission tests, development tests, or other information) that the engine will conform with the applicable emission standards of § 86.094-11 or superseding emissions standards sections as applicable. In lieu of providing emission data on smoke emissions from methanol-fueled or petroleum-fueled diesel certification engines, the Administrator may, on the request of the manufacturer, allow the manufacturer to demonstrate (on the basis of previous emission tests, development tests, or other information) that the engine will conform with the applicable emissions standards of § 86.098-11 or superseding emissions standards sections as applicable, except for engines with a particulate matter certification level exceeding 0.25 grams per brake horsepower-hour. In lieu of providing emissions data on smoke emissions from petroleum-fueled or methanol-fueled diesel engines when conducting Selective Enforcement Audit testing under 40 CFR part 86, subpart K, the Administrator may, on separate request of the manufacturer, allow the manufacturer to demonstrate (on the basis of previous emission tests, development tests, or other information) that the engine will conform with the applicable smoke emissions standards of § 86.098-11 or superseding emissions standards sections as applicable, except for engines with a particulate matter certification level exceeding 0.25 grams per brake horsepower-hour.

*****

(h) ~~Additionally, manufacturers~~ Manufacturers participating in any of the emissions ABT programs under § 86.098-15 or superseding ABT sections for HDEs shall submit for each participating family the items listed in paragraphs (h) (1) through (3) of this section.

*****

(h)(3)(i) These reports shall be submitted within 90 days of the end of the model year to: ~~Director, Engine Programs and Compliance Division (6405J), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460~~ Chief, Mobile Source Operations Division, California Air Resources Board, 9528 Telstar Avenue, El Monte, California 91731.

(ii) These reports shall indicate the engine family, the averaging set, the actual U.S. (49-state or 50-state, as applicable) production volume, the values required to calculate credits as given in the applicable ABT section, the resulting type and number of credits generated/required, and the NCPs in use on a similar NCP family. Manufacturers shall also submit how and where credit surpluses were dispersed (or are to be banked) and how and through what means credit deficits were met. Copies

of contracts related to credit trading must also be included or supplied by the broker if applicable. The report shall also include a calculation of credit balances to show that net mass emissions balances are within those allowed by the emission standards (equal to or greater than a zero credit balance). Any credit discount factor described in the applicable ABT section must be included as required.

*****

(j) Failure by a manufacturer generating credits for deposit only in the HDE banking programs to submit their end-of-year reports in the applicable specified time period (i.e., 90 days after the end of the model year) shall result in the credits not being available for use until such reports are received and reviewed by ~~EPA~~ ARB. Use of projected credits pending ~~EPA~~ ARB review will not be permitted in these circumstances.

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Adopt and amend § 86.004-25, Title 40, Code of Federal Regulations to read:

§ 86.004-25 Maintenance. [October 21, 1997]

*****

(b)(1) All emission-related scheduled maintenance for purposes of obtaining durability data must occur at the same mileage intervals (or equivalent intervals if engines, subsystems, or components are used) that will be specified in the manufacturer's maintenance instructions furnished to the ultimate purchaser of the motor vehicle or engine under § ~~86.094-35~~ 86.004-38. This maintenance schedule may be updated as necessary throughout the testing of the vehicle/engine, provided that no maintenance operation is deleted from the maintenance schedule after the operation has been performed on the test vehicle or engine.

*****

(b)(6)(iii) Visible signal systems used under paragraph (b)(6)(ii)(C) of this section are considered an element of design of the emission control system. Therefore, disabling, resetting, or otherwise rendering such signals inoperative without also performing the indicated maintenance procedure is a prohibited act under section 203(a)(3) of the Clean Air Act (42 U.S.C. 7522(a) (3)) or California Vehicle Code § 27156, et seq.

*****

(b)(7)(iii) Any manufacturer may request a hearing on the Administrator's determinations in paragraph (b)(7) of this section. The request shall be in writing and shall include a statement specifying the manufacturer's objections to the Administrator's determinations, and data in support of such objections. If, after review of the request and supporting data, the Administrator finds that the request raises a substantial factual issue, he shall provide the manufacturer a hearing in accordance with ~~§ 86.078-6~~ Title 17, California Code of Regulations, § 60040, et seq, with respect to such issue.

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Adopt and amend § 86.098-28, Title 40, Code of Federal Regulations to read:

§ 86.098-28 Compliance with emission standards. [June 30, 1995]

*****

(c)(4)(ii) Separate exhaust emission deterioration factors, determined from tests of engines, subsystems, or components conducted by the manufacturer, shall be supplied for each engine-system combination. For Otto-cycle engines, separate factors shall be established for transient HC (THCE), CO, and NOx ; and idle CO, for those engines utilizing aftertreatment technology (e.g., catalytic converters). For diesel-cycle engines, separate factors shall be established for transient HC (THCE), CO, NOx , and exhaust particulate. For petroleum-fueled diesel- cycle smoke testing, separate factors shall also be established for the acceleration mode (designated as "A"), the lugging mode (designated as "B"), and peak opacity (designated as "C").

*****

(c)(4)(iii)(B) Paragraph (c)(4)(iii)(B) of this section applies to diesel-cycle heavy- duty engines.

(*1*) Diesel-cycle heavy-duty engines not utilizing aftertreatment technology (e.g., particulate traps). ~~For transient HC (THCE), CO, NOx , and exhaust particulate, the official exhaust emission~~ For transient HC (OMHCE), formaldehyde (methanol-fueled engines and vehicles, low-emission vehicles and engines, and ultra-low-emission vehicles and engines), CO, NOx, and exhaust particulate, the official exhaust emission results for each emission data engine at the selected test point shall be adjusted by the addition of the appropriate deterioration factor. However, if the deterioration factor supplied by the manufacturer is less than zero, it shall be zero for the purposes of this paragraph.

(*2*) Diesel-cycle heavy-duty engines utilizing aftertreatment technology (e.g., particulate traps). ~~For transient HC (THCE), CO, NOx , and exhaust particulate, the official exhaust emission~~ For transient HC (OMHCE), formaldehyde (methanol-fueled engines and vehicles, low-emission vehicles and engines, and ultra-low-emission vehicles and engines), CO, NOx, and exhaust particulate, the official exhaust emission results for each emission data engine at the selected test point shall be adjusted by multiplication by the appropriate deterioration factor. However, if the deterioration factor supplied by the manufacturer is less than one, it shall be one for the purposes of this paragraph.

(*3*) ~~Diesel-cycle~~ Petroleum-fueled diesel-cycle heavy-duty engines only. For acceleration smoke ("A"), lugging smoke ("B"), and peak smoke ("C"), the official exhaust emission results for each emission data engine at the selected test point shall be adjusted by the addition of the appropriate

deterioration factor. However, if the deterioration factor supplied by the manufacturer is less than zero, it shall be zero for the purposes of this paragraph.

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Adopt and amend § 86.004-28, Title 40, Code of Federal Regulations to read:

§ 86.004-28 Compliance with emission standards.[October 21, 1997]

*****

(c)(4)(ii) Separate exhaust emission deterioration factors, determined from tests of engines, subsystems, or components conducted by the manufacturer, shall be supplied for each engine-system combination. For Otto-cycle engines, separate factors shall be established for transient NMHC (NMHCE), CO, NOx , NOx plus NMHC, and idle CO, for those engines utilizing aftertreatment technology (e.g., catalytic converters). For diesel-cycle engines, separate factors shall be established for transient NMHC (NMHCE), CO, NOx , NOx plus NMHC and exhaust particulate. For petroleum-fueled diesel-cycle smoke testing, separate factors shall also be established for the acceleration mode (designated as "A"), the lugging mode (designated as "B"), and peak opacity (designated as "C").

*****

(c)(4)(iii)(B) Paragraph (c)(4)(iii)(B) of this section applies to diesel-cycle HDEs.

(*1*) Diesel-cycle HDEs not utilizing aftertreatment technology (e.g., particulate traps). For transient NMHC (NMHCE), CO, NOx , NOx plus NMHC, formaldehyde (methanol-fueled engines and vehicles, low-emission vehicles and engines, and ultra-low-emission vehicles and engines), and exhaust particulate, the official exhaust emission results for each emission data engine at the selected test point shall be adjusted by the addition of the appropriate deterioration factor. However, if the deterioration factor supplied by the manufacturer is less than zero, it shall be zero for the purposes of this paragraph.

(*2*) Diesel-cycle HDEs utilizing aftertreatment technology (e.g., particulate traps). For transient NMHC (NMHCE), CO, NOx , NOx plus NMHC, formaldehyde (methanol-fueled engines and vehicles, low-emission vehicles and engines, and ultra-low-emission vehicles and engines), and exhaust particulate, the official exhaust emission results for each emission data engine at the selected test point shall be adjusted by multiplication by the appropriate deterioration factor. However, if the deterioration factor supplied by the manufacturer is less than one, it shall be one for the purposes of this paragraph.

(*3*) ~~Diesel-cycle~~ Petroleum-fueled diesel-cycle HDEs only. For acceleration smoke ("A"), lugging smoke ("B"), and peak smoke ("C"), the official exhaust emission results for each emission data engine at the selected test point shall be adjusted by the addition of the appropriate deterioration factor. However, if the deterioration factor supplied by the manufacturer is less than zero, it shall be zero for the purposes of this paragraph.

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~~#####~~

Adopt and amend § 86.098-30, Title 40, Code of Federal Regulations to read:

§ 86.098-30 Certification. [October 21, 1997]

*****

(a)(3)(i) One such certificate will be issued for each engine family except for heavy-duty engines certified under the provisions of §86.098-11(f) in which case two certificates will be issued, one for each fueling mode. For gasoline-fueled and methanol-fueled light-duty vehicles and light duty-trucks and petroleum-fueled diesel-cycle light-duty vehicles and light duty-trucks not certified under § 86.098-28(g), one such certificate will be issued for each engine family-evaporative/refueling emission family combination. Each certificate will certify compliance with no more than one set of in-use and certification standards (or family emission limits, as appropriate).

*****

(b)(3) If after a review of the test reports and data submitted by the manufacturer, data derived from any additional testing conducted pursuant to § 86.091-29, data or information derived from any inspection carried out under § 86.094-7(d) or any other pertinent data or information, the Administrator determines that one or more test vehicles (or test engines) of the certification test fleet do not meet applicable standards (or family emission limits, as appropriate), he will notify the manufacturer in writing, setting forth the basis for his determination. Within 30 days following receipt of the notification, the manufacturer may request a hearing on the Administrator's determination. The request shall be in writing, signed by an authorized representative of the manufacturer and shall include a statement specifying the manufacturer's objections to the Administrator's determination and data in support of such objections. If, after a review of the request and supporting data, the Administrator finds that the request raises a substantial factual issue, he shall provide the manufacturer a hearing in accordance with ~~§ 86.078-6~~ Title 17, California Code of Regulations, § 60040, et seq. with respect to such issue.

*****

(b)(4)(i) Request a hearing under ~~§ 86.078-6~~ Title 17, California Code of Regulations, § 60040, et seq.; or

*****

(b)(5)(i) Request a hearing under ~~§ 86.078-6~~ Title 17, California Code of Regulations, § 60040, et seq.; or

*****

(c)(5)(i) Be made only after the manufacturer concerned has been offered an opportunity for a hearing conducted in accordance with ~~§ 86.078-6 hereof~~ Title 17, California Code of Regulations, § 60040,

et seq.; and

*****

(c)(6) The manufacturer may request in the form and manner specified in paragraph (b)(3) of this section that any determination made by the Administrator under paragraph (c)(1) of this section to withhold or deny certification be reviewed in a hearing conducted in accordance with ~~§ 86.078-6~~ Title 17, California Code of Regulations, § 60040, et seq.. If the Administrator finds, after a review of the request and supporting data, that the request raises a substantial factual issue, he will grant the request with respect to such issue.

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Adopt and amend § 86.004-30, Title 40, Code of Federal Regulations to read:

§ 86.004-30 Certification. [October 21, 1997]

*****

(a)(3)(i) One such certificate will be issued for each engine family except for heavy-duty engines certified under the provisions of §86.004-11(f) in which case two certificates will be issued, one for each fueling mode. For gasoline-fueled and methanol-fueled light-duty vehicles and light-duty trucks, and petroleum-fueled diesel cycle light-duty vehicles and light-duty trucks not certified under § 86.098- 28(g), one such certificate will be issued for each engine family-evaporative/refueling emission family combination. Each certificate will certify compliance with no more than one set of in-use and certification standards (or family emission limits, as appropriate).

*****

(b)(3) If after a review of the test reports and data submitted by the manufacturer, data derived from any additional testing conducted pursuant to § 86.091-29, data or information derived from any inspection carried out under § 86.094-7(d) or any other pertinent data or information, the Administrator determines that one or more test vehicles (or test engines) of the certification test fleet do not meet applicable standards (or family emission limits, as appropriate), he will notify the manufacturer in writing, setting forth the basis for his determination. Within 30 days following receipt of the notification, the manufacturer may request a hearing on the Administrator's determination. The request shall be in writing, signed by an authorized representative of the manufacturer and shall include a statement specifying the manufacturer's objections to the Administrator's determination and data in support of such objections. If, after a review of the request and supporting data, the Administrator finds that the request raises a substantial factual issue, he shall provide the manufacturer a hearing in accordance with ~~§ 86.078-6~~ Title 17, California Code of Regulations, § 60040, et seq, with respect to such issue.

*****

(b)(4)(i) Request a hearing under ~~§ 86.078-6~~ Title 17, California Code of Regulations, § 60040, et seq.; or

*****

(b)(5)(i) Request a hearing under~~§ 86.078-6~~ Title 17, California Code of Regulations, § 60040, et seq.; or

*****

(c)(5)(i) Be made only after the manufacturer concerned has been offered an opportunity for a hearing conducted in accordance with ~~§ 86.078-6~~ hereof Title 17, California Code of Regulations, § 60040,

et seq. ; and

*****

(c)(6) The manufacturer may request in the form and manner specified in paragraph (b)(3) of this section that any determination made by the Administrator under paragraph (c)(1) of this section to withhold or deny certification be reviewed in a hearing conducted in accordance with ~~§ 86.078-6~~ Title 17, California Code of Regulations, § 60040, et seq.. If the Administrator finds, after a review of the request and supporting data, that the request raises a substantial factual issue, he will grant the request with respect to such issue.

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Adopt and amend § 86.004-38, Title 40, Code of Federal Regulations to Read:

§ 86.004-38 Maintenance instructions. [October 21, 1997]

*****

(g) Emission control diagnostic service information:

(1) Manufacturers shall furnish or cause to be furnished to any person engaged in the repairing or servicing of motor vehicles or motor vehicle engines, or the Administrator upon request, any and all information needed to make use of the on-board diagnostic system and such other information, including instructions for making emission-related diagnosis and repairs, including, but not limited to, service manuals, technical service bulletins, recall service information, data stream information, bi-directional control information, and training information, unless such information is protected by section 208(c) of the Act or California Government Code Section 6250, as a trade secret. No such information may be withheld under section 208(c) of the Act or California Government Code Section 6250 if that information is provided (directly or indirectly) by the manufacturer to franchised dealers or other persons engaged in the repair, diagnosing, or servicing of motor vehicles or motor vehicle engines.

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Adopt and amend § 86.004-40, Title 40, Code of Federal Regulations to read:

§ 86.004-40 Heavy-duty engine rebuilding practices. [October 21, 1997]

The provisions of this section are applicable to engines subject to the standards prescribed in § 86.004-10 or § 86.004-11 and are applicable to the process of engine rebuilding (or rebuilding a portion of an engine or engine system). The process of engine rebuilding generally includes disassembly, replacement of multiple parts due to wear, and reassembly, and also may include the removal of the engine from the vehicle and other acts associated with rebuilding an engine. Any deviation from the provisions contained in this section is a prohibited act under section 203(a)(3) of the Clean Air Act (42 U.S.C. 7522(a)(3)) or of the California Vehicle Code § 27156, et seq.

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

Adopt § 86.1311.94, Title 40, Code of Federal Regulations to read:

§ 86.1311-94 Exhaust gas analytical system; CVS bag sample. [October 21, 1997]

#####

Adopt and amend § 86.1313-90, Title 40 Code of Federal Regulations to read:

§ 86.1313-90 Fuel Specifications. April 11, 1989.

* * * * *

(b)(2) Except as noted below, petroleum fuel for diesel engines ... shall be used. For 1993 and subsequent model-year diesel-fueled engines, the petroleum fuel used in exhaust emissions testing may meet the specifications in Table N94-2 of 40 Code of Federal Regulations section 86.1313-94(b)(2), as adopted August 21, 1990, or substantially equivalent specifications approved by the Executive Officer as an option to the specifications in Table N90-2. For 1995 ~~and subsequent~~ through 2005 model-year medium-duty diesel-fueled engines, and for 1996 and 1997 model-year urban bus engines only, the petroleum fuel used in exhaust emissions testing may meet the specifications listed below, or substantially equivalent specifications approved by the Executive Officer, as an option to the specifications in Table N90-2. Where a manufacturer elects pursuant to this subparagraph to conduct exhaust emission testing using the specifications in Table N94-2, or the specifications listed below, the Executive Officer shall conduct exhaust emission testing with the diesel fuel meeting the specifications elected by the manufacturer.

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

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

(b)(3) Except as noted below, petroleum fuel for diesel engines ... shall be used. For 1993 and subsequent model-year diesel-fueled engines, excluding the 1995 ~~and subsequent~~ through 2005 model-year medium-duty diesel-fueled engines referenced below, the petroleum fuel used in service accumulation may meet the specifications in Table N94-3 of 40 Code of Federal Regulations section 86.1313-94(b)(3), as adopted August 21, 1990, or substantially equivalent specifications approved by the Executive Officer as an option to the specifications in Table N90-3. For 1995 ~~and subsequent~~ through 2005 model-year medium-duty diesel-fueled engines, and for 1996 and 1997 model-year urban bus engines only, diesel fuel representative of commercial diesel fuel which will be generally available through retail outlets shall be used in service accumulation.

(b)(4)(i) Methanol fuel used in service accumulation of 1991 through 1993 model-year methanol-fueled diesel engines shall be representative of commercially available methanol fuel. Methanol used in fuel for exhaust emission testing of 1991 through 1993 model-year methanol-fueled diesel engines shall be chemical grade methanol. The specifications set forth in subparagraph (b)(4)(ii) may be used as an option for 1993 model-year engines.

(b)(4)(ii) Methanol fuel specifications for 1994 and subsequent model-year methanol-fueled diesel engines.

Mileage-accumulation fuel: For methanol-fueled diesel-cycle methanol engines, fuel which meets the specifications listed in Title 13, CCR, Section 2292.1 or 2292.2, as applicable.

Emission-testing fuel: For methanol-fueled diesel-cycle methanol engines, fuel which meets the specifications listed in Title 13, CCR, Section 2292.1 or 2292.2, as modified by the following:

The fuel specification for 2292.1 shall be modified to: a) require methanol content at 98.0 ± 0.5 volume percent; b) require ethanol content at 1.0 ± 0.1 volume percent; c) require certification gasoline as noted in paragraph 9(a) of the California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles at 1.0 ± 1.0 volume percent.

The specification for 2292.2 shall be modified to require certification gasoline as noted in paragraph 9(a) of the California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles, as the hydrocarbon fraction. The vapor pressure specification for the emission-testing fuel shall be adjusted to 8.0-8.5 psi, using common blending components from the gasoline stream.

(b)(4)(iii) Fuel additives and ignition improvers intended for use in methanol test fuels shall be subject to the approval of the Executive Officer. In order for such approval to be granted, a manufacturer must demonstrate that emissions will not be adversely affected by the use of the fuel additive or ignition improver.

* * * * *

ADD SUBPARAGRAPH (e) TO READ:

(e) Natural Gas and Liquefied Petroleum Gas Test Fuel.
(e)(1) Natural Gas Test Fuel.
(e)(1)(i) Natural gas used in service accumulation for 1990 through 1993 model-year diesel engines shall be representative of commercial natural gas which is generally available. Natural gas meeting the specifications below, or substantially equivalent specifications approved by the Executive Officer, shall be used in exhaust emission testing for 1990 through 1993 model-year diesel engines. The specifications set forth in subparagraph (e)(1)(ii) may be used as an option for 1993 model-year engines.

Natural Gas Emission Test Fuel Specification

Specification	Value	Tolerance	Calculation Method
Wobbe Number	1350	± 0.5%	ASTM D 1945 Using AGA Bulletin No. 36
Hydrocarbons (expressed as percent of total organic carbon present)			
Methane	88%	± 0.5%	ASTM D 1945
Ethane	8%	± 0.3%	ASTM D 1945
C_3 and higher HC	4%	± 0.2%	ASTM D 1945
C_6 and higher HC	0.5%	maximum	ASTM D 1945
Total unsaturated HC	0.5%	maximum	ASTM D 2650
Other Species (expressed as mole percent)			
Hydrogen	0.1%	maximum	ASTM D 2650
Carbon Monoxide	0.1%	maximum	ASTM D 2650

Other Requirements

1. Free from liquids over the entire range of temperatures and pressures encountered in the engine and fuel system.
2. Free from solid particulate matter.

(e)(1)(ii) Natural gas used in service accumulation and in exhaust emission testing for 1994 and subsequent model-year engines shall meet the specifications as follows:

Mileage accumulation fuel: Natural gas meeting the specification listed in Title 13, CCR, Section 2292.5 shall be used in service accumulation.

Emission-test fuel: Natural gas meeting specifications listed in Title 13, CCR, Section 2292.5 as modified by the following: a) methane content at 90.0 ± 1.0 mole percent; b) ethane content at 4.0 ± 0.5 mole percent; c) C_3 and higher hydrocarbon content at 2.0 ± 0.3 mole percent; d) oxygen content at 0.5 mole percent maximum; e) inert gas (sum of CO_2 and N_2) content at 3.5 ± 0.5 mole percent.

(e)(2)(i) Liquefied Petroleum Gas Test Fuel. Liquefied petroleum gas used in service accumulation for 1990 through 1993 model-year diesel engines shall be representative of commercial liquefied petroleum gas which is generally available through retail outlets. Liquefied petroleum gas used in exhaust and evaporative emission testing for 1990 through 1993 model-year diesel engines shall conform to NGPA HD-5 specification. The specifications set forth in subparagraph (e)(1)(ii) may be used as an option for 1993 model-year engines.

(e)(2)(ii) Liquefied petroleum gas used in service accumulation and in exhaust and evaporative emission testing for 1994 and subsequent model-year diesel engines shall meet the specifications as follows:

Mileage accumulation fuel: Liquefied petroleum gas meeting the specifications listed in Title 13, CCR, Section 2292.6 shall be used in service accumulation.

Emission-test fuel: Liquefied petroleum gas meeting the specifications listed in Title 13, CCR, Section 2292.6 shall be used for exhaust and evaporative emission testing with the following exceptions: a) propane content limited to 93.5 ± 1.0 volume percent; b) propene content limited to 3.8 ± 0.5 volume percent; and c) butane and heavier components limited to 1.9 ± 0.3 volume percent.

(e)(3) The specification range of the fuels to be used under paragraphs (e)(1) and (e)(2) of this section shall be reported in accordance with 86.090-21(b)(3).

#####

Adopt § 86.1344-94, Title 40, Code of Federal Regulations to read:

§ 86.1344-94 Required information. [October 21, 1997]

#####

Amend Additional Requirements, California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles to read:

Additional Requirements

1. Any reference to vehicle or engine sales or vehicle or engine production volume throughout the United States shall mean vehicle or engine sales or vehicle or engine production volume in each the United States and California.
2. Regulations concerning EPA hearings, EPA inspections, and specific language on the Certificate of Conformity, shall not be applicable to these procedures.
3. Any reference made to Selective Enforcement Auditing (SEA) shall not be applicable to these procedures.
4. Methanol-fueled engines and vehicles shall comply with the "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Liquefied Petroleum Gas- or Gasoline- or Methanol-Fueled Motor Vehicles," as incorporated in Title 13, California Code of Regulations, Section 1976.
5. In addition to the standards and provisions specified in CFR Section 86.091-11 and 86.094-11 (emission standards for diesel-fuel and diesel methanol heavy-duty engines and vehicles), the following formaldehyde emission levels as measured under transient operating conditions shall not be exceeded for methanol-fueled engines and vehicles:

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

The following formaldehyde emission levels as measured under transient operating conditions shall not be exceeded for 1992 and subsequent low-emission and ultra-low-emission vehicles and engines used in low-emission and ultra-low-emission vehicles operating on any fuel.

Model Year	Formaldehyde (g/bhp-hr)
1992 and Subsequent Low-Emission Vehicles and Engines	0.050
1992 and Subsequent Ultra-Low-Emission Vehicles and Engines	0.025

6. All dedicated gaseous-fuel, dual-fuel, and multi-fuel diesel engines (and vehicles), including those engines derived from existing diesel engines shall comply with the requirements which are applicable to heavy-duty diesel engines, except where otherwise noted.
7. Prior to the 2004 model year, non-methane ~~Non-methane~~ hydrocarbon emissions shall be measured in accordance with the "California Non-Methane Hydrocarbon Test Procedures," as last amended July 12, 1991, which is incorporated herein by reference.
8. For dual-fuel or multi-fuel gaseous engines and vehicles, the noted deterioration factors shall

be determined separately for operation on each type of fuel or combination of fuels that the engine is designed to use. For certification to be granted, the provisions of §86.091-28(c) must be met separately for emissions using each type and combination of fuels.

9. Except where otherwise noted, references to requirements for averaging, banking and trading programs for heavy-duty engines shall also apply for medium-duty engines certified under Title 13 California Code of Regulations §1956.8(h) for use in vehicles of more than 8,500 pounds through 14,000 pounds gross vehicle weight rating, under the restrictions of §86.098-15 and §86.004-15, as incorporated herein.

AMENDMENTS TO THE CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 1985 AND SUBSEQUENT MODEL HEAVY-DUTY OTTO-CYCLE ENGINES AND VEHICLES

State of California
AIR RESOURCES BOARD

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 1987 AND SUBSEQUENT MODEL HEAVY-DUTY OTTO-CYCLE ENGINES AND VEHICLES

Adopted: April 25, 1986
Amended: June 2, 1988
Amended: January 22, 1990
Amended: May 15, 1990
Amended: December 26, 1990
Amended: July 12, 1991
Amended: October 23, 1992
Amended: May 28, 1993
Amended: September 24, 1994
Amended: June 29, 1995
Amended: June 24, 1996
Amended: February 26, 1999

NOTE: This document incorporates by reference various sections of the Code of Federal Regulations, some with modifications. Modifications to portions of paragraphs in the Federal language are indicated by underline for additions and ~~strikeout~~ for deletions. Larger portions of Federal language for a specific section which is not to be included in these procedures are denoted by the word "DELETE" and larger portions of new California language are indicated by "REPLACE WITH" or "INSERT". The symbols "*****" and "....." mean that the remainder of the federal text for a specific section, which is not shown in these procedures, has been included by reference, with only the printed text changed. The symbols "#####" mean that the remainder of the text of these procedures, which is not shown in this amendment document, has not been changed.

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 1987 AND SUBSEQUENT MODEL HEAVY-DUTY OTTO-CYCLE ENGINES AND VEHICLES

The following provisions of Subparts A, L, N, and P, Part 86, Title 40, Code of Federal Regulations, as adopted or amended by the U.S. Environmental Protection Agency on the date listed, and only to the extent they pertain to the testing and compliance of exhaust emissions from heavy-duty Otto-cycle gasoline engines and vehicles, are adopted and incorporated herein by this reference as the California Exhaust Emission Standards and Test Procedures for 1987 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles, except as altered or replaced by the provisions set forth below.

The federal regulations contained in the subparts identified above which pertain to evaporative emissions and oxides of nitrogen emission averaging shall not be applicable to these procedures. Regulations pertaining to evaporative emissions are contained in "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles," as incorporated in Title 13, California Code of Regulations, Section 1976.

The federal regulations contained in the subparts identified above which pertain to nonconformance penalty shall be applicable for the 1988 model year. The Executive Officer shall not implement a nonconformance fee schedule until it is established that payment of nonconformance fees in California may substitute, on the basis of each heavy-duty engine or vehicle certified for sale in California, for payment of nonconformance fees to the federal government.

Starting with the 1990 model year, these regulations shall be applicable to all heavy-duty Otto-cycle natural-gas-fueled and liquefied-petroleum-gas-fueled engines (and vehicles) except those engines derived from existing Diesel engines. For any engine which is not a distinctly Otto-cycle engine nor derived from such, the Executive Officer shall determine whether the engine shall be subject to these regulations or alternatively to the heavy-duty Diesel engine regulations, in consideration of the relative similarity of the engine's torque-speed characteristics and vehicle applications with those of Otto-cycle and Diesel engines.

The regulations concerning the certification of methanol-fueled vehicles and engines including dedicated methanol and fuel-flexible vehicles and engines are not applicable in California until the 1993 and subsequent model years. Regulations concerning the certification of incomplete medium-duty Otto-cycle low-emission vehicles and engines and ultra-low-emission vehicles and engines operating on any fuel are applicable for the 1992 and subsequent model years.

Subpart A, General Provisions for Emission Regulations for 1977 and Later Model Year New Light-Duty Vehicles, Light-Duty Trucks, and Heavy-Duty Engines, and for 1985 and Later Model Year Gasoline-Fueled and Methanol-Fueled Heavy-Duty Vehicles.

Adopt and amend § 86.004-2, Title 40, Code of Federal Regulations to read:

§ 86.004-2 Definitions. [October 21, 1997]

The definitions of ~~§ 86.001-2~~ §86.098-2 continue to apply to ~~2001~~1998 and later model year vehicles. The definitions listed in this section apply beginning with the 2004 model year.

Useful life means:

(1) DELETE

(2) DELETE

(3) For an Otto-cycle HDE family:

(i) For hydrocarbon and carbon monoxide standards, a period of use of 10 years or 110,000 miles, whichever first occurs.

(ii) For the oxides of nitrogen standard, a period of use of 10 years or 110,000 miles, whichever first occurs.

(iii) For the portion of evaporative emission control systems subject to the evaporative emission test requirements of § 86.1230-96, a period of use of 10 years or 110,000 miles, whichever first occurs.

(4) DELETE

(5) As an option for ~~both light-duty trucks under certain conditions and~~ HDE families, an alternative useful life period may be assigned by the Administrator under the provisions of § 86.094-21(f).

Warranty period [DELETE, for guidance see California Code of Regulations Title 13 §2036].

#####

Adopt and amend § 86.098-3, Title 40, Code of Federal Regulations to read:

§ 86.098-3 Abbreviations. [October 21, 1997]

(a) The abbreviations in ~~§ 86.096-3~~ §86.090-3 continue to apply. The abbreviations in this section apply beginning with the 1998 model year.

(b) The abbreviations of this section apply to this subpart, and also to subparts B, E, F, G, K, M, N, and P of this part, and have the following meanings:

T subD -- DELETE

ABT--Averaging, banking, and trading

HDE--Heavy-duty engine

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Adopt and amend § 86.004-38, Title 40, Code of Federal Regulations to read:

§ 86.004-38 Maintenance instructions. [October 21, 1997]

*****

(g) Emission control diagnostic service information:

(1) Manufacturers shall furnish or cause to be furnished to any person engaged in the repairing or servicing of motor vehicles or motor vehicle engines, or the Administrator upon request, any and all information needed to make use of the on-board diagnostic system and such other information, including instructions for making emission-related diagnosis and repairs, including, but not limited to, service manuals, technical service bulletins, recall service information, data stream information, bi-directional control information, and training information, unless such information is protected by section 208(c) <u>of the Act or California Government Code Section 6250,</u> as a trade secret. No such information may be withheld under section 208(c) of the Act <u>or California Government Code Section 6250,</u> if that information is provided (directly or indirectly) by the manufacturer to franchised dealers or other persons engaged in the repair, diagnosing, or servicing of motor vehicles or motor vehicle engines.

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Adopt and amend § 86.004-40, Title 40, Code of Federal Regulations to read:

§ 86.004-40 Heavy-duty engine rebuilding practices. [October 21, 1997]

The provisions of this section are applicable to engines subject to the standards prescribed in § 86.004-10 or § 86.004-11 and are applicable to the process of engine rebuilding (or rebuilding a portion of an engine or engine system). The process of engine rebuilding generally includes disassembly, replacement of multiple parts due to wear, and reassembly, and also may include the removal of the engine from the vehicle and other acts associated with rebuilding an engine. Any deviation from the provisions contained in this section is a prohibited act under section 203(a)(3) of the Clean Air Act (42 U.S.C. 7522(a)(3)) or of the California Vehicle Code § 27156, et seq.

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AMENDMENTS TO THE CALIFORNIA VEHICLE EMISSION CONTROL AND SMOG INDEX LABEL SPECIFICATIONS

State of California
AIR RESOURCES BOARD

CALIFORNIA MOTOR VEHICLE EMISSION CONTROL AND SMOG INDEX LABEL SPECIFICATIONS

Adopted:	March 1, 1978
Amended:	June 16, 1982
Amended:	April 26, 1984
Amended:	April 8, 1985
Amended:	April 25, 1986
Amended:	June 2, 1988
Amended:	July 21, 1988
Amended:	January 22, 1990
Amended:	May 15, 1990
Amended:	July 12, 1991
Amended	March 24, 1994
Amended:	June 29, 1995
Amended:	September 20, 1996
Amended:	February 26, 1999

Amend California Motor Vehicle Emission Control and Smog Index Label Specifications to read:

[Subsections 1. through 3.(a)v. unchanged]

3.(a) vi. For Otto-cycle engines the tune-up specifications and adjustments recommended by the manufacturer, including, if applicable: valve lash, ignition timing, idle air fuel mixture setting procedure and value (e.g., idle CO, idle speed drop), and high idle speed. For diesel engines the specifications and adjustments recommended by the manufacturer, including, if applicable: initial injection timing, and fuel rate (in mm^3/stroke) at advertised horsepower. For the specifications listed above, which are not recommended by the manufacturer for adjustment, the manufacturer shall include in lieu of the "specifications" the single statement "no other adjustments needed." These specifications shall indicate the proper transmission position during tune-up and what accessories, if any (e.g., air conditioner), should be in operation, and what systems, if any (e.g., vacuum advance, air pump), should be disconnected during the tune-up. For all vehicles except ZEVs, the instructions for tune-up adjustments shall be sufficiently clear on the label so as to preclude the need for a mechanic or vehicle owner to refer to another document in order to correctly perform the adjustments. <u>For heavy-duty engines certified under the requirements of Title 13 California Code of Regulations, §1956.8 (a)(3), the requirements of this subsection (3)(a)(vi) shall be repeated for each of the two fueling modes of operation.</u>

vii. For motorcycles only, any specific fuel or engine lubricant requirements (e.g., lead content, research octane number, engine lubricant type).

viii. For heavy-duty engines, the date of engine manufacture (month and year). A manufacturer may, in lieu of printing the month of manufacture on the engine label, maintain a record of the month of engine manufacture. The manufacturer shall submit this record to the Executive Officer upon request.

ix. An unconditional statement of compliance with the appropriate model-year California regulations; for example, "This vehicle (or engine, as applicable) conforms to California regulations applicable to_____model-year new_____(for 1992 and subsequent model years, specify TLEV, LEV, ULEV, SULEV, or ZEV, as applicable) (specify motorcycles, passenger cars, light-duty trucks, medium-duty vehicles, heavy-duty Otto-cycle engines, or heavy-duty diesel engines, as applicable)." For federally certified vehicles certified for sale in California the statement must include the phrase "conforms to U.S. EPA regulations and is certified for sale in California." For Class III motorcycles for sale in California, the statement must include the phrase "is certified to_____HC engine family exhaust emission standard in California." For incomplete light-duty truck and incomplete medium-duty vehicles the label shall contain the following statement in lieu of the above:

"This vehicle conforms to California regulations applicable to ___ model-year new____(for 1992 and subsequent model years specify LEV or ULEV as applicable) vehicles when completed at a maximum curb weight of_____pounds and a maximum frontal area of _____square feet."

For 1994 through 2003~~and later~~ model year heavy heavy-duty diesel engines to be used in urban buses that are certified to the optional reduced-emission ~~emission~~ standards, the label shall contain the following statement in lieu of the above:

"This engine conforms to California regulations applicable to ___ model year new urban bus engines and is certified to a NOx emission standard of _____ g/bhp-hr (for optional reduced-emission ~~emission~~ standards specify between 0.5 and 3.5 at 0.5 g/bhp-hr increments for 1994 and 1995 model years and between 0.5 and 2.5 at 0.5 g/bhp-hr increments for 1996 through 2003 ~~and later~~ model years)."

For 1995 through 2003 ~~and later~~ model year heavy-duty engines, other than those for use in urban buses, that are certified to the optional reduced-emission ~~emission~~ standards, the label shall contain the following statement in lieu of the above:

"This engine conforms to California regulations applicable to ____ model-year new heavy-duty engines, other than those for use in urban buses, and is certified to a NOx emission standard of ____ g/bhp-hr (for optional reduced-emission ~~emission~~ standards specify between 0.5 and 3.5 at 0.5 g/bhp-hr increments for 1995 through 1997 model-year diesel engines, between 0.5 and 2.5 at 0.5 g/bhp-hr increments for 1998 through 2003 ~~and later~~ model-year diesel engines, between 0.5 and 2.5 at 0.5 g/bhp-hr increments for 1995 through 1997 model-year Otto-cycle engines, and between 0.5 and 1.5 at 0.5 g/bhp-hr increments for 1998 and later model year Otto-cycle engines)."

For 2004 and later model year heavy-duty diesel engines that are certified to the optional reduced-emission standards, the label shall contain the following statement in lieu of the above:

"This engine conforms to California regulations applicable to ____ model-year new heavy-duty engines and is certified to a NOx plus NMHC optional reduced-emission standard of ____ g/bhp-hr (for optional reduced-emission standards specify between 0.3 and 1.8 at 0.3 g/bhp-hr increments for 2004 and subsequent model-year diesel engines)."

For heavy-duty diesel engines certified under the requirements of Title 13 California Code of Regulations, §1956.8 (a)(3), the statement of compliance requirements of this

subsection (3)(a)(ix) shall be repeated for each of the two fueling modes of operation. Appended to the statement for the lower emitting fueling mode of operation shall be the following sentence:

"This certification is valid only while operating on (indicate the fuel or fuel combination under which this mode of operation was certified) fuel. Operation using any other fueling mode will result in significant increases in exhaust emissions and significantly reduced engine performance."

Manufacturers may elect to use a supplemental label in addition to the original label if there is not sufficient space to include all the required information. The supplemental label must conform to all specifications as the original label. In the case that a supplemental label is used, the original label shall be number "1 of 2" and the supplemental label shall be numbered "2 of 2."

[Remainder of section unchanged]