

State of California
AIR RESOURCES BOARD

Resolution 86 - 43

April 24, 1986

WHEREAS, Sections 39600 and 39601 of the Health and Safety Code authorize the Air Resources Board (the "Board") to adopt standards, rules and regulations necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, in Section 43000 of the Health and Safety Code, the Legislature has declared that the emission of air pollutants from motor vehicles is the primary cause of air pollution in many parts of the state and, in Sections 39002 and 39003 of the Health and Safety Code, has charged the Air Resources Board with the responsibility for systematically attacking the serious air pollution problem caused by motor vehicles;

WHEREAS, Sections 43013, 43101 and 43104 of the Health and Safety Code authorize the Board to adopt emission standards and test procedures to control air pollution caused by motor vehicles;

WHEREAS, the Board has adopted "California Exhaust Emission Standards and Test Procedures for 1981 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," (Exhaust Test Procedures) incorporated by reference in Section 1960.1, Title 13, California Administrative Code;

WHEREAS, the Emission Test Procedures specify an exhaust emission standard of 0.4 grams per mile (g/mi) oxides of nitrogen (NO_x) for passenger cars, light-duty trucks (0-3999 lbs.), and medium-duty vehicles (0-3999 lbs.) effective with the 1983 model year;

WHEREAS, in 1981, the Board was petitioned to reconsider the 0.4 g/mi NO_x exhaust emission standard by several vehicle manufacturers which claimed that technical and financial considerations could prevent certain vehicles in their product line from meeting the 0.4 g/mi exhaust emission standard in 1983;

WHEREAS, in 1981, the Board adopted optional NO_x exhaust emission standards of 0.7 g/mi for passenger cars and 1.0 g/mi for light-duty trucks (0-3999 lbs.) and medium-duty vehicles (0-3999 lbs.) effective for the 1983 and subsequent model years, accompanied by an extended liability for recall of vehicles with defective parts;

WHEREAS, Section 43101.5(b) of the Health and Safety Code requires the Board to submit a report to the Legislature by January 15, 1983, if the Board intends to consider eliminating the optional 0.7 g/mi NO_x standard for passenger cars and 1.0 g/mi NO_x standard for light-duty trucks and medium-duty vehicles of less than 4,000 lbs. for the 1986 and subsequent model years;

WHEREAS, on January 14, 1983, the Board submitted a report to the Legislature entitled: "Report to the Legislature on the Benefits and Feasibility of a 0.4 gram per mile Oxides of Nitrogen Exhaust Emission Standard for Passenger Cars and Light Trucks";

WHEREAS, the staff has proposed amendments to Section 1960.1.5, Title 13, California Administrative Code, which would restrict the use of the existing optional 0.7 g/mi NOx exhaust emission standard for passenger cars and replace the existing optional 1.0 g/mi NOx 50,000 mile exhaust emission standard for light-duty trucks (0-3999 lbs.) and medium-duty vehicles (0-3999 lbs.) with a limited 0.7 g/mi optional standard;

WHEREAS, the staff has proposed that affected vehicle manufacturers except small volume manufacturers be required to come into compliance with the amended standards over a period of two years beginning with the 1989 model year;

WHEREAS, the Staff has proposed amendments to Section 1960.1, Title 13, California Administrative Code, which would eliminate option 1 of the 100,000 mile emission standards for the 1989 and subsequent model-years, and restrict option 2 of the 100,000 mile emission standards to diesel-powered passenger cars, light-duty trucks (0-3999 lbs.), and medium-duty vehicles (0-3999 lbs.) for the 1989 and subsequent model-years;

WHEREAS, staff has proposed a delay of two years in the compliance schedule for any manufacturer which was subject to "in lieu" standards pursuant to Section 202(b)(1)(B) of the Federal Clean Air Act or which sells not more than 3,000 new motor vehicles per model year in California, i.e., small volume manufacturers;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project having significant adverse environmental impacts be adopted as originally proposed if feasible alternatives or mitigation measures are available which would substantially reduce or avoid such impacts;

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with the provisions of Chapter 3.5 (commencing with Section 11340), Part 1, Division 3, Title 2 of the Government Code;

WHEREAS, the Board finds that:

The primary exhaust emission standards of 0.39 g/mi non-methane hydrocarbons, 7.0 g/mi carbon monoxide, and 0.4 g/mi NOx for passenger cars and 0.39 g/mi non-methane hydrocarbons, 9.0 g/mi carbon monoxide, and 0.4 g/mi NOx for light-duty trucks and medium-duty vehicles are technologically feasible and cost effective for implementation in 1989 and 1990, except for passenger cars weighing more than 5000 pounds for which compliance with the 0.4 g/mi NOx standard will be technologically feasible and cost effective in 1994;

Staging full implementation of the 0.4 g/mi NOx standard over a period of five years will provide sufficient lead time to enable all affected vehicles to comply with the 0.4 g/mi NOx standard both for certification and in-use;

Some manufacturers may require additional time after initial implementation of the 0.4 g/mi NOx standard to evaluate the durability of emission control systems and make the required changes necessary to achieve 0.4 g/mi NOx in customer use;

Some small volume manufacturers of passenger cars, light-duty trucks, and medium-duty vehicles will require up to two additional years beyond 1989 to develop or buy the technology necessary to meet a 0.4 g/mi NOx emission standard;

Use of the optional 100,000 mile emission standards effective for gasoline-powered 1983 and subsequent model-year vehicles would seriously undermine the effectiveness of the staff's proposal to restrict use of the optional 0.7 g/mi NOx standard.

Retention of option 1 of the 100,000 mile emission standards effective for diesel-powered 1983 and subsequent model-year vehicles is unnecessary because option 1 was generally intended as a gasoline-powered vehicle standard and is not presently utilized to certify diesel-powered vehicles;

As a result of amending the NOx emission standard from 0.7 to 0.4 g/mi, the statutory limit to two years/24,000 miles on warranty coverage for designated emissions control system parts will no longer be operative for vehicles certified to the 0.4 g/mi standard;

WHEREAS, the Board further finds that:

The proposed amendments will result in significant adverse environmental impacts as follows: a slight increase in ozone levels in areas of relatively low ozone levels and a slight decrease in the current rate of reduction of vehicle benzene emissions;

The proposed amendments will result in significant reductions in emissions of NOx, hydrocarbon and carbon monoxide (CO), and concomitant reductions in ozone levels in areas of highest ozone concentrations, reduced CO levels, and reductions in particulate matter, nitrogen dioxide, visibility impairment, and acid deposition;

There are no feasible mitigation measures or alternatives available which would substantially reduce the significant adverse impacts while at the same time providing the substantial overall health benefit realized by the significant reductions described above.

NOW, THEREFORE BE IT RESOLVED, that the Board hereby approves the proposed amendments to Sections 1960.1 and 1960.1.5, Title 13, California Administrative Code as set forth in Attachment A hereto.

BE IT FURTHER RESOLVED, that the Board hereby approves amendments to the "California Exhaust Emission Standards and Test Procedures for 1981 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles" as set forth in Attachment B hereto.

BE IT FURTHER RESOLVED THAT the Board directs the Executive Officer to adopt the amendments to Sections 1960.1 and 1960.1.5, Title 13, California Administrative Code, and the incorporated "California Exhaust Emission Standards and Test Procedures for 1981 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," as set forth in Attachments A and B, after making them available to the public for a period of 15 days, provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall make such modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if he determines that this is warranted.

BE IT FURTHER RESOLVED that the Board directs staff to work with the California Automotive Task Force and other interested parties in developing appropriate legislation to reduce warranty coverage on tune-up parts for light-duty vehicles to two years or 24,000 miles whichever occurs first, consistent with preserving the air pollution benefits of the Board's motor vehicle emission control program.

BE IT FURTHER RESOLVED, that the Board hereby determines that the amendments approved herein will not cause the California emission standards, in the aggregate, to be less protective of public health and welfare than applicable federal standards, will not cause the California requirements to be inconsistent with Section 202(a) of the Clean Air Act, and raise no new issues affecting previous waiver determinations of the Administrator of the Environmental Protection Agency pursuant to Section 209(b) of the Clean Air Act.

BE IT FURTHER RESOLVED that the Executive Officer shall forward the amended regulations to the Environmental Protection Agency with a request for confirmation that the amendments are within the scope of an existing waiver, pursuant to Section 209(b)(1) of the Clean Air Act.

BE IT FURTHER RESOLVED that the staff is directed to take appropriate action to credit the emission reductions provided by this action to California's commitment to reasonable extra efforts to attain the national ambient air quality standards for ozone and carbon monoxide. Credits for nitrogen oxides

Attachment A

Amend Title 13, California Administrative Code, Section 1960.1 to read as follows:

1960.1. Exhaust Emission Standards and Test Procedures - 1981 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.

(a) Unchanged

(b) Unchanged

(c) Unchanged

(d) The exhaust emissions from new 1984 ~~and subsequent~~ through 1988 model passenger cars, light-duty trucks, and medium-duty vehicles and new 1984 through 1990 model passenger cars, light-duty trucks and medium-duty vehicles produced by a small volume manufacturer, subject to registration and sold and registered in this state, shall not exceed:

1984 THROUGH 1988 ~~1984~~ EXHAUST EMISSION STANDARDS (6)
(grams per mile)

| Vehicle Type(1) | Equivalent Inertia Weight (lbs.)(2) | Durability Vehicle Basis (mi) | Non-Methane Hydro-carbons(3) | Carbon Monoxide | Oxides of Nitrogen (4) |
|--------------------|-------------------------------------|-------------------------------|------------------------------|-----------------|------------------------|
| PC | All | 50,000 | 0.39(0.41) | 7.0 | 0.4 |
| PC (5) | All | 50,000 | 0.39(0.41) | 7.0 | 0.7 |
| PC (Option 1) | All | 100,000 | 0.39(0.41) | 7.0 | 1.0 |
| PC (Option 2) | All | 100,000 | 0.46 | 8.3 | 1.0 |
| LDT,MDV | 0-3999 | 50,000 | 0.39(0.41) | 9.0 | 0.4 |
| LDT,MDV (5) | 0-3999 | 50,000 | 0.39(0.41) | 9.0 | 1.0 |
| LDT,MDV (Option 1) | 0-3999 | 100,000 | 0.39(0.41) | 9.0 | 1.0 |
| LDT,MDV (Option 2) | 0-3999 | 100,000 | 0.46 | 10.6 | 1.0 |
| LDT,MDV | 4000-5999 | 50,000 | 0.50(0.50) | 9.0 | 1.0 |
| LDT,MDV (Option 1) | 4000-5999 | 100,000 | 0.50(0.50) | 9.0 | 1.5 |
| MDV | 6000 & larger | 50,000 | 0.60(0.60) | 9.0 | 1.5 |
| MDV (Option 1) | 6000 & larger | 100,000 | 0.60(0.60) | 9.0 | 2.0 |

- (1) "PC" means passenger cars.
"LDT" means light-duty trucks.
"MDV" means medium-duty vehicles.

- (2) Equivalent inertia weights are determined under subparagraph 40 CFR 86.129-79(a).

- (3) Hydrocarbon standards in parentheses apply to total hydrocarbons.
- (4) The maximum projected emissions of oxides of nitrogen measured on the federal Highway Fuel Economy Test (HWFET; 40 CFR Part 600, Subpart B) shall be not greater than 1.33 times the applicable passenger car standards and 2.00 times the applicable light-duty truck and medium-duty vehicle standards shown in the table. Both the projected emissions and the HWFET standard shall be rounded to the nearest 0.1 gm/mi before being compared.
- (5) This set of standards for 1984 through 1988 ~~and later~~ model vehicles is optional. A manufacturer may choose to certify to these optional standards pursuant to the conditions set forth in Section 1960.15.
- (6) Diesel-powered passenger cars, light-duty trucks, and medium-duty vehicles are subject to the following particulate exhaust emission standards: 0.4 g/mi for the 1985 model year, and 0.2 g/mi for the 1986 through 1988 model years, ~~and 0.08 g/mi for the 1989 and subsequent model years.~~ The particulate compliance shall be determined on a 50,000 mile durability vehicle basis.

(e) The exhaust emissions from new 1989 and subsequent model passenger cars, light-duty trucks, and medium-duty vehicles except those produced by a small volume manufacturer, and new 1991 and subsequent model passenger cars, light-duty trucks and medium-duty vehicles produced by a small volume manufacturer, subject to registration and sold and registered in this state, shall not exceed:

1989 AND SUBSEQUENT MODEL-YEAR EXHAUST EMISSION STANDARDS (6)
(grams per mile)

| <u>Vehicle Type(1)</u> | <u>Equivalent Inertia Weight (lbs.)(2)</u> | <u>Durability Vehicle Basis (mi)</u> | <u>Non-Methane Hydrocarbons(3)</u> | <u>Carbon Monoxide</u> | <u>Oxides of Nitrogen (4)(5)</u> |
|---------------------------------|--|--------------------------------------|------------------------------------|------------------------|----------------------------------|
| PC | All | 50,000 | 0.39(0.41) | 7.0 | 0.4 |
| <u>PC(7)</u> | <u>All</u> | <u>50,000</u> | <u>0.39(0.41)</u> | <u>7.0</u> | <u>0.7</u> |
| <u>Diesel PC (Option 2)</u> | <u>All</u> | <u>100,000</u> | <u>0.46</u> | <u>8.3</u> | <u>1.0</u> |
| LDT,MDV | 0-3999 | 50,000 | 0.39(0.41) | 9.0 | 0.4 |
| <u>LDT,MDV(7)</u> | <u>0-3999</u> | <u>50,000</u> | <u>0.39(0.41)</u> | <u>9.0</u> | <u>0.7 (8)</u> |
| <u>Diesel LDT,MDV(Option 2)</u> | <u>0-3999</u> | <u>100,000</u> | <u>0.46</u> | <u>10.6</u> | <u>1.0</u> |
| LDT,MDV | 4000-5999 | 50,000 | 0.50(0.50) | 9.0 | 1.0 |
| <u>LDT,MDV(Option 1)</u> | <u>4000-5999</u> | <u>100,000</u> | <u>0.50(0.50)</u> | <u>9.0</u> | <u>1.5</u> |
| MDV | 6000 & larger | 50,000 | 0.60(0.60) | 9.0 | 1.5 |
| <u>MDV (Option 1)</u> | <u>6000 & larger</u> | <u>100,000</u> | <u>0.60(0.60)</u> | <u>9.0</u> | <u>2.0</u> |

- (1) "PC" means passenger cars.
 "LDT" means light-duty trucks.
 "MDV" means medium-duty vehicles.

- (2) Equivalent inertia weights are determined under subparagraph 40 CFR 86.129-79(a).
- (3) Hydrocarbon standards in parentheses apply to total hydrocarbons.
- (4) The maximum projected emissions of oxides of nitrogen measured on the federal Highway Fuel Economy Test (HWFET; 40 CFR Part 600, Subpart B) shall be not greater than 1.33 times the applicable passenger car standards and 2.00 times the applicable light-duty truck and medium-duty vehicle standards shown in the table. Both the projected emissions and the HWFET standard shall be rounded to the nearest 0.1 gm/mi before being compared.
- (5) The standard for in-use compliance for passenger cars, light-duty trucks and medium-duty vehicles certifying to the 0.4 g/mi NOx standard shall be 0.47 / 0.55 gm/mi NOx for 50,000 miles. If the in-use compliance level is above 0.4 gm/mi NOx but does not exceed 0.55 gm/mi NOx, and based on a review of information derived from a statistically valid and representative sample of vehicles, the Executive Officer determines that a substantial percentage of any class or category of such vehicles exhibits, prior to 50,000 miles or 5 years, whichever occurs first, an identifiable, systematic defect in a component listed in Section 1960.1.5(c)(2) which causes a significant increase in emissions above those exhibited by vehicles free of such defects and of the same class or category and having the same period of use and mileage, then the Executive Officer may invoke the enforcement authority under Sections 2112 and 2113, Title 13, California Administrative Code, to require remedial action by the vehicle manufacturer. Such remedial action shall be limited to owner notification and repair or replacement of the defective component. As used in this section, the term "defect" shall not include failures which are the result of abuse, neglect, or improper maintenance. This provision is applicable for the 1989 ~~and 1990~~ through 1993 model years only. For small volume manufacturers, this provision is applicable for the 1991 ~~and 1992~~ through 1995 model years only.
- (6) Diesel-powered passenger cars, light-duty trucks, and medium-duty vehicles are subject to a particulate exhaust emission standard of 0.08 gm/mi for the 1989 and subsequent model years. The particulate compliance shall be determined on a 50,000 mile durability vehicle basis.
- (7) This set of standards is optional. A manufacturer may choose to certify to these standards pursuant to the conditions set forth in Section 1960.1.5.
- (8) Pursuant to Section 1960.1.5(a)(1), the optional standard for 1989 model year light-duty trucks and medium-duty vehicles only is 1.0 gm/mi NOx.

(e)(f) The exhaust emissions from new 1981 and subsequent model passenger cars, light-duty trucks, and medium-duty vehicles certified to special standards authorized by Sections 1960.2, 1960.3, and 1960.4, Subchapter 1, Chapter 3, Title 13, California Administrative Code, subject to registration and sold and registered in this state, shall not exceed (1):

SPECIAL EXHAUST (10)
EMISSION STANDARDS
(grams per mile)

| Year | Vehicle Type(2) | Equivalent Inertia Weight (lbs.)(3) | Durability Vehicle Basis (mi) | Non-Methane Hydrocarbons(4) | Carbon Monoxide | Oxides of Nitrogen (5) |
|---------|-----------------|-------------------------------------|-------------------------------|-----------------------------|-----------------|------------------------|
| 1981 | PC(6) | A11 | 50,000 | 0.39(0.41) | 7.0 | 1.5 |
| | LDT,MDV (7) | 0-3999 | 50,000 | 0.39(0.41) | 9.0 | 1.5 |
| 1982(8) | PC | A11 | 50,000 | 0.39(0.41) | 7.0 | 1.0 |
| 1983(8) | PC | A11 | 50,000 | 0.39(0.41) | 7.0 | 0.7(9) |
| | LDT,MDV | 0-3999 | 50,000 | 0.39(0.41) | 9.0 | 1.0 |
| 1984(8) | PC | A11 | 50,000 | 0.39(0.41) | 7.0 | 0.7 |
| | LDT,MDV | 0-3999 | 50,000 | 0.39(0.41) | 9.0 | 0.7(9) |
| 1985(8) | LDT,MDV | 0-3999 | 50,000 | 0.39(0.41) | 9.0 | 0.7 |

(1) Subsection (e) (f) shall remain in effect until December 31, 1990, and as of that date is repealed unless a later regulation deletes or extends that date. Notwithstanding the repeal or expiration of this regulation on December 31, 1990, the provisions of the regulation as they existed prior to such repeal or expiration shall continue to be operative and effective for those events occurring prior to the repeal or expiration.

(2) "PC" means passenger cars.
"LDT" means light-duty trucks.
"MDV" means medium-duty vehicles.

(3) Equivalent inertia weights are determined under subparagraph 40 CFR 86.129-79(a).

(4) Hydrocarbon standards in parentheses apply to total hydrocarbons.

(5) The maximum projected emissions of oxides of nitrogen measured on the federal Highway Fuel Economy Test (HWFET; 40 CFR Part 600, Subpart B) shall be no greater than 1.33 times the applicable passenger car standards and 2.00 times the applicable light-duty truck and medium-duty vehicle standards shown in the table. Both the projected emissions and the HWFET standard shall be rounded to the nearest 0.1 gm/mi before being compared.

- (6) For vehicles certified to special standards authorized by Section 1960.2, Article 2, Subchapter 1, Chapter 3, Title 13, California Administrative Code.
- (7) For vehicles certified to special standards authorized by Section 1960.3, Article 2, Subchapter 1, Chapter 3, Title 13, California Administrative Code.
- (8) For vehicles certified to special standards authorized by Section 1960.4, Article 2, Subchapter 1, Chapter 3, Title 13, California Administrative Code. Special standards revert to "1983 and subsequent" standards for 1985 and subsequent passenger cars and 1986 and subsequent LDTs and MDVs.
- (9) The Executive Officer may grant limited relief from the 1983 passenger car and 1984 LDT and MDV special NOx standard to a manufacturer who exceeds the standard because of unforeseen technical problems.
- (10) Diesel-powered passenger cars, light-duty trucks, and medium-duty vehicles are subject to the following particulate exhaust emission standards: 0.4 g/mi for the 1985 model year, 0.2 g/mi for the 1986 through 1988 model years, and 0.08 g/mi for the 1989 and subsequent model years. The particulate compliance shall be determined on a 50,000 mile durability vehicle basis.

~~(f)~~ (g) For Option 1 the hydrocarbon and carbon monoxide compliance shall be determined on a 50,000 mile durability vehicle basis. For Option 2 the hydrocarbon and carbon monoxide compliance shall be determined on a 100,000 mile durability vehicle basis.

~~(g) For Options 1 and 2 the particulate compliance shall be determined on a 50,000-mile durability vehicle basis.~~

(h) The test procedures for determining compliance with these standards are set forth in "California Exhaust Emission Standards and Test Procedures for 1981 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles", adopted by the State Board on November 23, 1976, as last amended October 23, 1985, _____.

(i) With respect to any new vehicle required to comply with the standards set forth in paragraphs (a) through ~~(g)~~ (f), the manufacturer's written maintenance instructions for in-use vehicles shall not require scheduled maintenance more frequently than or beyond the scope of maintenance permitted under the test procedures referenced in paragraph (h) above. Any failure to perform scheduled maintenance shall not excuse an emissions violation unless the failure is related to or causative of the violation.

(j) Any 1982, 1983, and 1984 model year vehicle required to comply with the standards set forth in paragraphs (b), (c), (d), and ~~(e)~~ (f) which is subject to a standard set by federal law or regulation controlling emissions of particulate matter must conform to such standard.

(k) For purposes of this section and Section 1960.1.5, "small volume manufacturer" is any vehicle manufacturer which was subject to "in lieu" standards pursuant to Section 202(b)(1)(B) of the Federal Clean Air Act (42 U.S.C. Section 7521(b)(1)(B), as amended November 16, 1977) or a vehicle manufacturer with California sales not exceeding 3,000 new motor vehicles per model year based on previous model-year sales; however, for manufacturers certifying for the first time in California, model year sales shall be based on projected California sales.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43101 and 43104 Health and Safety Code, Reference: Sections 39002, 39003, ~~43000~~, 43013, 43100, 43101, 43101.5, 43102, 43104, 43106 and 43204, Health and Safety Code.

Amend Title 13, California Administrative Code, Section 1960.1.5, Subsection (a) to read as follows:

1960.1.5. Optional NOx Standard for 1983 and Later Model Passenger Cars, and Light-Duty Trucks and Medium-Duty Vehicles Less Than 4000 lbs. Equivalent Inertia Weight (EIW).

(a)(1) Notwithstanding any other provision of this chapter, a vehicle manufacturer may choose to certify 1983 and later model vehicles to optional NOx standards as follows:

(A) Passenger cars - 0.7 gm/mile - 1983 through 1988 and subsequent model years.

LDT, MDV 0-3999 pounds EIW - 1.0 gm/mile - 1983 through 1988 and subsequent model years.

(B) For the 1989 model year, each manufacturer may certify no more than 50 percent of its combined projected California model-year sales of passenger cars, light-duty trucks (0-3999 pounds EIW), and medium-duty vehicles (0-3999 pounds EIW) engine/families to the optional NOx standard as follows:

Passenger cars - 0.7 gm/mi

LDT, MDV 0-3999 pounds EIW - 1.0 gm/mi

(C) 1989 and subsequent through 1993 model year passenger cars weighing more than 5000 pounds EIW may be certified to the 0.7 gm/mile NOx standard.

(D) For the 1990 and later through 1993 model years, a vehicle manufacturer may certify passenger cars, light-duty trucks (0-3999 lbs. EIW), and medium-duty vehicles (0-3999 lbs. EIW) to the optional 0.7 gm/mi NOx standard subject to the following limitations:

For each model year, the total number of passenger cars (0-5000 pounds EIW) each manufacturer may certify at 0.7 gm/mi NOx shall be limited to a maximum of 10 percent of the total previous California model-year sales of these vehicles.

For each model year, the total number of light-duty trucks (0-3999 pounds EIW) and medium-duty vehicles (0-3999 pounds EIW) each manufacturer may certify at 0.7 gm/mi NOx shall be limited to a maximum of 15 percent of the combined total previous California model-year sales of these vehicles.

For manufacturers certifying for the first time in California, "previous California model-year sales" shall mean projected California model-year sales.

(2) Notwithstanding any other provisions of this chapter, a small volume manufacturer may certify 1989 and later model vehicles to optional NOx standards as follows:

(A) Passenger cars - 0.7 gm/mile - 1989 and 1990 model years.

LDT, MDV 0-3999 pounds EIW - 1.0 gm/mile - 1989 and 1990 model years.

(B) For the 1991 model year, each small volume manufacturer may certify no more than 50 percent of its ~~combined~~ projected California model-year sales of passenger cars, light-duty trucks (0-3999 pounds EIW), and medium-duty vehicles (0-3999 pounds EIW) ~~engine/families~~ to the optional NOx standards as follows:

Passenger cars - 0.7 gm/mile
LDT, MDV 0-3999 pounds EIW - 1.0 gm/mile

(C) For the 1992 ~~and later~~ through 1995 model years, each small volume manufacturer may certify passenger cars, light-duty trucks (0-3999 lbs. EIW), and medium-duty vehicles (0-3999 lbs. EIW) to the optional 0.7 gm/mi NOx standard subject to the following limitations:

For each model year, the total number of passenger cars (0-5000 pounds EIW) each manufacturer may certify at 0.7 gm/mi NOx shall be limited to a maximum of ~~8~~ 10 percent of the total previous California model-year sales of these vehicles.

For each model year, the total number of light-duty trucks (0-3999 pounds EIW) and medium-duty vehicles (0-3999 pounds EIW) each manufacturer may certify at 0.7 gm/mi NOx shall be limited to a maximum of ~~10~~ 15 percent of the combined total previous California model-year sales of these vehicles.

For manufacturers certifying for the first time in California, "previous California model-year sales" shall mean projected California model-year sales.

(b) Unchanged

(c) Unchanged

(d) Unchanged

Attachment B

State of California
AIR RESOURCES BOARD

CALIFORNIA EXHAUST EMISSION
STANDARDS AND TEST PROCEDURES
FOR 1981 AND SUBSEQUENT MODEL
PASSENGER CARS, LIGHT-DUTY
TRUCKS, AND MEDIUM-DUTY VEHICLES

Adopted: November 23, 1976
Adopted: December 14, 1976
Amended: May 26, 1977
Amended: June 8, 1977
Amended: June 22, 1977
Amended: September 20, 1977
Amended: January 15, 1978
Amended: March 1, 1978
Amended: April 10, 1978
Amended: May 24, 1978
Amended: February 9, 1979
Amended: May 22, 1979
Amended: March 5, 1980
Amended: March 26, 1980
Amended: August 27, 1980
Amended: August 28, 1980
Amended: December 2, 1980
Amended: May 20, 1981
Amended: October 27, 1981
Amended: November 19, 1981
Amended: July 1, 1982
Amended: August 26, 1982
Amended: March 9, 1983
Amended: January 5, 1984
Amended: October 2, 1985
Amended:

Amend California Exhaust Emission Standards and Test Procedures for 1981 and Subsequent Model Passenger Cars, Light-duty trucks, and medium-duty vehicles, Paragraph 4, Subsections (d), (e), and (f) to read as follows:

(d) The exhaust emissions from new 1984 ~~and-subsequent~~ through 1988 model passenger cars, light-duty trucks, and medium-duty vehicles and new 1984 through 1990 model passenger cars, light-duty trucks and medium-duty vehicles produced by a small volume manufacturer, subject to registration and sold and registered in this state, shall not exceed:

1984 THROUGH 1988 ~~AND-SUBSEQUENT~~ EXHAUST EMISSION STANDARDS (6)(7)
(grams per mile)

| Vehicle Type(1) | Equivalent Inertia Weight (lbs.)(2) | Durability Vehicle Basis (mi) | Non-Methane Hydro-carbons(3) | Carbon Monoxide | Oxides of Nitrogen (4) |
|--------------------|-------------------------------------|-------------------------------|------------------------------|-----------------|------------------------|
| PC | All | 50,000 | 0.39(0.41) | 7.0 | 0.4 |
| PC (5) | All | 50,000 | 0.39(0.41) | 7.0 | 0.7 |
| PC (Option 1) | All | 100,000 | 0.39(0.41) | 7.0 | 1.0 |
| PC (Option 2) | All | 100,000 | 0.46 | 8.3 | 1.0 |
| LDT,MDV | 0-3999 | 50,000 | 0.39(0.41) | 9.0 | 0.4 |
| LDT,MDV (5) | 0-3999 | 50,000 | 0.39(0.41) | 9.0 | 1.0 |
| LDT,MDV (Option 1) | 0-3999 | 100,000 | 0.39(0.41) | 9.0 | 1.0 |
| LDT,MDV (Option 2) | 0-3999 | 100,000 | 0.46 | 10.6 | 1.0 |
| LDT,MDV | 4000-5999 | 50,000 | 0.50(0.50) | 9.0 | 1.0 |
| LDT,MDV (Option 1) | 4000-5999 | 100,000 | 0.50(0.50) | 9.0 | 1.5 |
| MDV | 6000 & larger | 50,000 | 0.60(0.60) | 9.0 | 1.5 |
| MDV (Option 1) | 6000 & larger | 100,000 | 0.60(0.60) | 9.0 | 2.0 |

- (1) "PC" means passenger cars.
"LDT" means light-duty trucks.
"MDV" means medium-duty vehicles.
- (2) Equivalent inertia weights are determined under subparagraph 40 CFR 86.129-79(a).
- (3) Hydrocarbon standards in parentheses apply to total hydrocarbons.
- (4) The maximum projected emissions of oxides of nitrogen measured on the federal Highway Fuel Economy Test (HWFET; 40 CFR Part 600, Subpart B) shall be not greater than 1.33 times the applicable passenger car standards and 2.00 times the applicable light-duty truck and medium-duty vehicle standards shown in the table. Both the projected emissions and the HWFET standard shall be rounded to the nearest 0.1 gm/mi before being compared.

- (5) This set of standards for 1984 through 1988 and later model vehicles is optional. A manufacturer may choose to certify to these optional standards pursuant to the conditions set forth in Section 1960.15.
- (6) Diesel-powered passenger cars, light-duty trucks, and medium-duty vehicles are subject to the following particulate exhaust emission standards: 0.4 g/mi for the 1985 model year, and 0.2 g/mi for the 1986 through 1988 model years, ~~and 0.08 g/mi for the 1989 and subsequent model years.~~ The particulate compliance shall be determined on a 50,000 mile durability vehicle basis.
- (7) For gaseous-fueled vehicles the calculation procedures provided in the appendix shall be used for determining emissions and fuel economy.

(e) The exhaust emissions from new 1989 and subsequent model passenger cars, light-duty trucks, and medium-duty vehicles except those produced by a small volume manufacturer, and new 1991 and subsequent model passenger cars, light-duty trucks and medium-duty vehicles produced by a small volume manufacturer, subject to registration and sold and registered in this state, shall not exceed:

1989 AND SUBSEQUENT MODEL YEAR EXHAUST EMISSION STANDARDS (6)(8)(7)
(grams per mile)

| <u>Vehicle Type(1)</u> | <u>Equivalent Inertia Weight (lbs.)(2)</u> | <u>Durability Vehicle Basis (mi)</u> | <u>Non-Methane Hydrocarbons(3)</u> | <u>Carbon Monoxide</u> | <u>Oxides of Nitrogen (4)(5)</u> |
|---------------------------------|--|--------------------------------------|------------------------------------|------------------------|----------------------------------|
| PC | All | 50,000 | 0.39(0.41) | 7.0 | 0.4 |
| <u>PC(7)(8)</u> | <u>All</u> | <u>50,000</u> | <u>0.39(0.41)</u> | <u>7.0</u> | <u>0.7</u> |
| <u>Diesel PC (Option 2)</u> | <u>All</u> | <u>100,000</u> | <u>0.46</u> | <u>8.3</u> | <u>1.0</u> |
| LDT,MDV | 0-3999 | 50,000 | 0.39(0.41) | 9.0 | 0.4 |
| <u>LDT,MDV(7)(8)</u> | <u>0-3999</u> | <u>50,000</u> | <u>0.39(0.41)</u> | <u>9.0</u> | <u>0.7 (9)</u> |
| <u>Diesel LDT,MDV(Option 2)</u> | <u>0-3999</u> | <u>100,000</u> | <u>0.46</u> | <u>10.6</u> | <u>1.0</u> |
| LDT,MDV | 4000-5999 | 50,000 | 0.50(0.50) | 9.0 | 1.0 |
| <u>LDT,MDV(Option 1)</u> | <u>4000-5999</u> | <u>100,000</u> | <u>0.50(0.50)</u> | <u>9.0</u> | <u>1.5</u> |
| MDV | 6000 & larger | 50,000 | 0.60(0.60) | 9.0 | 1.5 |
| <u>MDV (Option 1)</u> | <u>6000 & larger</u> | <u>100,000</u> | <u>0.60(0.60)</u> | <u>9.0</u> | <u>2.0</u> |

- (1) "PC" means passenger cars.
"LDT" means light-duty trucks.
"MDV" means medium-duty vehicles.

- (2) Equivalent inertia weights are determined under subparagraph 40 CFR 86.129-79(a).

- (3) Hydrocarbon standards in parentheses apply to total hydrocarbons.
- (4) The maximum projected emissions of oxides of nitrogen measured on the federal Highway Fuel Economy Test (HWFET; 40 CFR Part 600, Subpart B) shall be not greater than 1.33 times the applicable passenger car standards and 2.00 times the applicable light-duty truck and medium-duty vehicle standards shown in the table. Both the projected emissions and the HWFET standard shall be rounded to the nearest 0.1 gm/mi before being compared.
- (5) The standard for in-use compliance for passenger cars, light-duty trucks and medium-duty vehicles certifying to the 0.4 g/mi NOx standard shall be 0.55 gm/mi NOx for 50,000 miles. If the in-use compliance level is above 0.4 gm/mi NOx but does not exceed 0.55 gm/mi NOx, and based on a review of information derived from a statistically valid and representative sample of vehicles, the Executive Officer determines that a substantial percentage of any class or category of such vehicles exhibits, prior to 50,000 miles or 5 years, whichever occurs first, an identifiable, systematic defect in a component listed in Section 1960.1.5(c)(2) which causes a significant increase in emissions above those exhibited by vehicles free of such defects and of the same class or category and having the same period of use and mileage, then the Executive Officer may invoke the enforcement authority under Sections 2112 and 2113, Title 13, California Administrative Code, to require remedial action by the vehicle manufacturer. Such remedial action shall be limited to owner notification and repair or replacement of the defective component. As used in this section, the term "defect" shall not include failures which are the result of abuse, neglect, or improper maintenance. This provision is applicable for the 1989 and 1990 through 1993 model years only. For small volume manufacturers, this provision is applicable to the 1991 and 1992 through 1995 model years only.
- (6) Diesel-powered passenger cars, light-duty trucks, and medium-duty vehicles are subject to a particulate exhaust emission standard of 0.08 g/mi for the 1989 and subsequent model years. The particulate compliance shall be determined on a 50,000 mile durability vehicle basis.
- (7) Τηλς/έκτ/ότ/ετάνδάρτε/λε/όρτιόηαλ//Α/μάρνφάκτύτερ/μάρ/ετρόσε/τό/εετλφ/τό/εηέσε/ετάνδάρτε/όύτέμάρ/τό/εηε/εοηάετλόνε/έκτ/όρτελ/ην/έεετλόν/1989/1991
- ~~(8)~~ For gaseous-fueled vehicles the calculation procedures provided in the appendix shall be used for determining emissions and fuel economy.
- (8) This set of standards is optional. A manufacturer may choose to certify to these standards pursuant to the conditions set forth in Section 1960.1.5.
- (9) Pursuant to Section 1960.1.5(a)(1), the optional standard for 1989 model year light-duty trucks and medium-duty vehicles only is 1.0 gm/mi NOx.

{e}{f} The exhaust emissions from new 1981 and subsequent model passenger cars, light-duty trucks, and medium-duty vehicles certified to special standards authorized by Sections 1960.2, 1960.3, and 1960.4, Subchapter 1, Chapter 3, Title 13, California Administrative Code, subject to registration and sold and registered in this state, shall not exceed (1):

SPECIAL EXHAUST (10)(11)
EMISSION STANDARDS
(grams per mile)

| Year | Vehicle Type(2) | Equivalent Inertia Weight (lbs.)(3) | Durability Vehicle Basis (mi) | Non-Methane Hydrocarbons(4) | Carbon Monoxide | Oxides of Nitrogen (5) |
|---------|-----------------|-------------------------------------|-------------------------------|-----------------------------|-----------------|------------------------|
| 1981 | PC(6) | A11 | 50,000 | 0.39(0.41) | 7.0 | 1.5 |
| | LDT,MDV (7) | 0-3999 | 50,000 | 0.39(0.41) | 9.0 | 1.5 |
| 1982(8) | PC | A11 | 50,000 | 0.39(0.41) | 7.0 | 1.0 |
| 1983(8) | PC | A11 | 50,000 | 0.39(0.41) | 7.0 | 0.7(9) |
| | LDT,MDV | 0-3999 | 50,000 | 0.39(0.41) | 9.0 | 1.0 |
| 1984(8) | PC | A11 | 50,000 | 0.39(0.41) | 7.0 | 0.7 |
| | LDT,MDV | 0-3999 | 50,000 | 0.39(0.41) | 9.0 | 0.7(9) |
| 1985(8) | LDT,MDV | 0-3999 | 50,000 | 0.39(0.41) | 9.0 | 0.7 |

(1) Subsection {e} {f} shall remain in effect until December 31, 1990, and as of that date is repealed unless a later regulation deletes or extends that date. Notwithstanding the repeal or expiration of this regulation on December 31, 1990, the provisions of the regulation as they existed prior to such repeal or expiration shall continue to be operative and effective for those events occurring prior to the repeal or expiration.

(2) "PC" means passenger cars.
"LDT" means light-duty trucks.
"MDV" means medium-duty vehicles.

(3) Equivalent inertia weights are determined under subparagraph 40 CFR 86.129-79(a).

(4) Hydrocarbon standards in parentheses apply to total hydrocarbons.

(5) The maximum projected emissions of oxides of nitrogen measured on the federal Highway Fuel Economy Test (HWFET; 40 CFR Part 600, Subpart B) shall be no greater than 1.33 times the applicable passenger car standards and 2.00 times the applicable light-duty truck and medium-duty vehicle standards shown in the table. Both the projected emissions and the HWFET standard shall be rounded to the nearest 0.1 gm/mi before being compared.

- (6) For vehicles certified to special standards authorized by Section 1960.2, Article 2, Subchapter 1, Chapter 3, Title 13, California Administrative Code.
- (7) For vehicles certified to special standards authorized by Section 1960.3, Article 2, Subchapter 1, Chapter 3, Title 13, California Administrative Code.
- (8) For vehicles certified to special standards authorized by Section 1960.4, Article 2, Subchapter 1, Chapter 3, Title 13, California Administrative Code. Special standards revert to "1983 and subsequent" standards for 1985 and subsequent passenger cars and 1986 and subsequent LDTs and MDVs.
- (9) The Executive Officer may grant limited relief from the 1983 passenger car and 1984 LDT and MDV special NOx standard to a manufacturer who exceeds the standard because of unforeseen technical problems.
- (10) Diesel-powered passenger cars, light-duty trucks, and medium-duty vehicles are subject to the following particulate exhaust emission standards: 0.4 g/mi for the 1985 model year, 0.2 g/mi for the 1986 through 1988 model years, and 0.08 g/mi for the 1989 and subsequent model years. The particulate compliance shall be determined on a 50,000 mile durability vehicle basis.
- (11) For gaseous-fueled vehicles the calculation procedures provided in the appendix shall be used for determining emissions and fuel economy.

Memorandum

To : Gordon Van Vleck
Secretary
Resources Agency

Date : August 27, 1986

Subject: Filing of Notice
of Decisions of
the Air Resources
Board

Harold Holmes
From : Harold Holmes
Board Secretary
Air Resources Board

Pursuant to Title 17, Section 60007 (b), and in compliance with Air Resources Board certification under Section 21080.5 of the Public Resources Code, the Air Resources Board hereby forwards for posting the attached notice of decisions and response to environmental comments raised during the comment period.

ATTACHMENTS

85-77
85-78
85-80
86-4
86-25
86-43
86-44
86-45