State of California
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Notice of Public Hearing to Consider Amendments to Regulations Regarding Exhaust Emission Standards, Certification and Compliance Test Procedures, and Durability Requirements Applicable to Light-Duty Trucks and Medium-Duty and Light Heavy-Duty Vehicles and Engines

Agenda Item No.: 90-6-1

Public Hearing Date: June 14, 1990

Issuing Authority: Air Resources Board

Comment: No comments were received identifying any significant environmental issues pertaining to this item. The staff report identified no adverse environmental effects.

Response: N/A

Certified: Judith M. Lowenstein
Board Secretary

Date: 4/16/91

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State of California
AIR RESOURCES BOARD

Resolution 90-35

June 14, 1990

Agenda Item No.: 90-6-1

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 Board with the responsibility for systematically attacking the serious air pollution problem caused by motor vehicles;

WHEREAS, in Section 43000.5 of the Health and Safety Code, enacted as part of the California Clean Air Act of 1988 (Stats. 1988, ch. 1568) the Legislature has further declared that while significant reductions in vehicle emissions have been achieved in recent years, continued growth in population and vehicle miles traveled throughout the state have the potential not only to prevent attainment of the state standards, but in some cases to result in worsening of air quality;

WHEREAS, in Section 43000.5 of the Health and Safety Code, the Legislature has further declared that the attainment and maintenance of the state air quality standards will necessitate the achievement of substantial reductions in new vehicle emissions and substantial improvements in the durability of vehicle emissions systems;

WHEREAS, Sections 43013, 43101 and 43104 of the Health and Safety Code authorize the Board to adopt emission standards and test procedures applicable to new motor vehicles which it finds to be necessary, cost-effective, and technologically feasible;

WHEREAS, Section 43018 of the Health and Safety Code, enacted as part of the California Clean Air Act of 1988, directs that the Board endeavor to achieve the maximum degree of emission reduction possible from motor vehicles to accomplish the attainment of the state standards at the earliest practicable date;

WHEREAS, Section 43018 of the Health and Safety Code further directs the Board to take whatever actions are necessary, cost-effective, and technologically feasible in order to achieve, no later than December 31, 2000, a reduction in the actual emissions of reactive organic gases and oxides of nitrogen of 55% and 15%, respectively, from motor vehicles based

on emissions in 1987, and to achieve the maximum feasible reductions in particulates, carbon monoxide, and toxic air contaminants from vehicular sources;

WHEREAS, Section 43018 of the Health and Safety Code further directs the Board to achieve the specified emission reductions by requiring the most cost-effective combination of control measures for motor vehicles and motor vehicle fuels, and for this purpose specifically requires the Board to consider, no later than November 15, 1990, the adoption of regulations governing standards for heavy-duty and medium-duty vehicle emissions;

WHEREAS, the staff has proposed an amendment to Section 1900, Title 13, California Code of Regulations, to redefine MDVs as any motor vehicle having a gross vehicle weight rating (GVWR) from 6,001 lbs. to 14,000 lbs.;

WHEREAS, the Board has adopted "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," (hereinafter "MDV Emission Standards and Test Procedures") incorporated by reference in Section 1960.1, Title 13, California Code of Regulations;

WHEREAS, the Board has adopted "California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles" and "California Exhaust Emission Standards and Test Procedures for 1987 Model Heavy-Duty Otto-Cycle Engines and Vehicles" (hereinafter "Heavy-Duty Emission Standards and Test Procedures") incorporated by reference in Section 1956.8, Title 13, California Code of Regulations;

WHEREAS, the MDV Emission Standards and Test Procedures currently specify chassis test procedures for vehicles with a GVWR of 8,500 lbs. or less, and the Heavy-Duty Emission Standards and Test Procedures currently specify engine test procedures for vehicles greater than 8,500 lbs., GVWR;

WHEREAS, the staff has proposed amendments to the MDV Emission Standards and Test Procedures and Heavy-Duty Emission Standards and Test Procedures to require chassis test procedures at a test weight equivalent to the average of the curb weight and the GVWR for all vehicles from 6,001 to 14,000 lbs., GVWR, except diesel vehicles and incomplete vehicles from 8501 to 14,000 lbs., GVWR, which are allowed to comply with optional engine test procedures;

WHEREAS, the MDV Emission Standards and Test Procedures currently specify 50,000 mile exhaust emission standards of 0.39 grams per mile (g/mi) non-methane hydrocarbon (NMHC), 9.0 g/mi carbon monoxide (CO), and 0.4 g/mi oxides of nitrogen (NOx) for MDVs with a loaded vehicle weight (LVW) from 0-3750 lbs., 0.50 g/mi NMHC, 9.0 g/mi CO, and 1.0 g/mi NOx for MDVs from 3751-5750 lbs. LVW, and 0.60 g/mi NMHC, 9.0 g/mi CO, and 1.5 g/mi NOx for MDVs from 5751 lbs. LVW and larger;

WHEREAS, the MDV Emission Standards and Test Procedures currently specify a 50,000 mile particulate standard of 0.08 g/mi for diesel MDVs;

WHEREAS, the staff has proposed amendments to the exhaust emission standards to lower the 50,000 mile emission standards for MDVs to 0.25 g/mi NMHC and 3.4 g/mi CO and 0.4 g/mi NOx from 0-3750 lbs., 0.32 g/mi NMHC and 4.4 g/mi CO and 0.7 g/mi NOx from 3751-5750 lbs., 0.39 g/mi NMHC and 5.0 g/mi CO and 1.1 g/mi NOx from 5751-8500 lbs., 0.46 g/mi NMHC and 5.5 g/mi CO and 1.3 g/mi NOx from 8501-10,000 lbs., and 0.60 g/mi NMHC and 7.0 g/mi CO and 2.0 g/mi NOx from 10,001-14,000 lbs.;

WHEREAS, the staff has proposed amendments to the exhaust emission standards to implement 120,000 mile exhaust emission standards for MDVs of 0.36 g/mi NMHC and 5.0 g/mi CO and 0.55 g/mi NOx from 0-3750 lbs., 0.46 g/mi NMHC and 6.4 g/mi CO and 0.98 g/mi NOx from 3751-5750 lbs., 0.56 g/mi NMHC and 7.3 g/mi CO and 1.53 g/mi NOx from 5751-8500 lbs., 0.66 g/mi NMHC and 8.1 g/mi CO and 1.81 g/mi NOx from 8501-10,000 lbs., and 0.86 g/mi NMHC and 10.3 g/mi CO and 2.77 g/mi NOx from 10,001-14,000 lbs.;

WHEREAS, the staff has proposed amendments to the exhaust emission standards to implement 120,000 mile particulate standards for diesel vehicles of 0.08 g/mi from 0-3750 lbs., 0.10 g/mi from 3751-5750 lbs., 0.12 g/mi from 5751-8500 lbs, 0.12 g/mi from 8501-10,000 lbs., and 0.12 g/mi from 10,001-14,000 lbs.;

WHEREAS, the staff has proposed that the 120,000 mile emission standards shall apply to all chassis-certified diesel MDVs and that the 50,000 mile and 120,000 mile emission standards shall apply to all other chassis-certified MDVs, including gasoline, methanol, and gaseous-fueled vehicles;

WHEREAS, the Heavy-Duty Emission Standards and Test Procedures currently specify 110,000 mile emission standards of 1.1 grams per brake horsepower hour (g/bhp-hr) NMHC, 14.4 g/bhp-hr CO, and 5.0 g/bhp-hr NOx for gasoline-powered engines and 1.3 g/bhp-hr NMHC, 15.5 g/bhp-hr CO, 5.0 g/bhp-hr NOx, and 0.10 g/bhp-hr particulate for diesel-powered vehicles in the 1995 model-year;

WHEREAS, the staff has proposed amendments to the exhaust emission standards of the optional engine test procedures to require 120,000 mile emission standards of 3.9 g/bhp-hr HC + NOx and 14.4 g/bhp-hr CO for all engines and an additional particulate standard of 0.10 g/bhp-hr for diesel engines;

WHEREAS, the staff has proposed that the more stringent standards be phased-in over a two year period beginning with the 1995 model year, and that during the first two years of certification to the new standards manufacturers would be subject to less stringent in-use compliance standards;

WHEREAS, the staff has proposed amendments to Section 2139, Title 13, California Code of Regulations, to give manufacturers certifying diesel engines or engines used in incomplete vehicles a choice of three options to conduct in-use compliance testing of engine-certified vehicles;

WHEREAS, the first proposed option would allow engine testing as long as manufacturers conduct the in-use compliance testing at their expense, with ARB staff oversight; the second proposed option would allow manufacturers the option to develop "correlation factors" which would permit the use of chassis testing procedures to determine the in-use compliance of engine-certified vehicles; and the third proposed option would allow manufacturers to use chassis test data and correlation factors as a screening process with compliance to be determined by engine testing;

WHEREAS, the staff has proposed amendments to the Board's on-board diagnostic controls (OBD) contained in Section 1968.1, Title 13, California Code of Regulations, which would require manufacturers to use the applicable certification test procedure, whether chassis or engine based, in order to comply with OBD requirements;

WHEREAS, the staff has proposed amendments to Section 2112, Title 13, California Code of Regulations, to provide that the in-use compliance period for MDVs subject to the 120,000 mile exhaust emission standards is 11 years or 120,000 miles, whichever occurs first;

WHEREAS, the staff has proposed amendments to the NOx exhaust emission standard for light duty trucks from 3751-5750 pounds, loaded vehicle weight, to reduce the current NOx standard of 1.0 g/mi to 0.7 g/mi, in order to provide consistency with the proposed MDV exhaust emission standards;

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 proposed exhaust emission standards are necessary to achieve the maximum reduction in emissions from motor vehicles in order to attain state ambient air quality standards at the earliest practicable date;
>
> The proposed NMHC standards are necessary to achieve, by December 31, 2000, a reduction in the actual emissions of reactive organic gases and oxides of nitrogen of 55% and 15%, respectively, from motor vehicles based on emissions in 1987, and to achieve the maximum feasible reductions in particulates, carbon monoxide, and toxic air contaminants from vehicular sources;
>
> The light-duty chassis test procedures are the appropriate emission test procedures for MDVs from 6,001 to 14,000 lbs. GVWR

due to the use of these vehicles in a duty similar to commuter vehicles;

Conducting emission testing of MDVs at a loaded condition is necessary because these vehicles are currently tested under lightly loaded conditions which are not representative of the significant loads MDVs can carry;

Extended durability requirements of 120,000 miles are necessary for MDVs to ensure proper durability of the emission control system throughout the useful life.

Optional engine test procedures for diesel engines and engines in incomplete vehicles provide a valid alternative to the chassis test procedures for the two largest commercial usage categories;

Optional engine test procedures for diesel engines and engines used in incomplete vehicles need to be combined with an in-use compliance testing program conducted by the manufacturer since no practical method of in-use compliance testing engine-certified vehicles currently exists;

Full implementation of the proposed standards and test procedures over a period of two years beginning in the 1995 model year will provide sufficient lead time to enable manufacturers to comply with the more stringent standards and will allow manufacturers to spread the costs of recertifying vehicles to the new standards over the phase-in period;

The proposed OBD requirements provide an important emission control strategy and are necessary to provide consistency for all MDVs, whether certified by chassis test procedures or optional engine test procedures;

The proposed in-use compliance periods are necessary to provide consistency with Health and Safety Code Sections 43105 and 43106;

The proposed NMHC, CO, NOx, and particulate standards for MDVs, LHDVs, and light-duty trucks are technologically feasible and cost effective, and together with existing and anticipated standards and regulations for all classes of motor vehicles and for motor vehicle fuels, reflect the most cost-effective combination of control measures to reduce air pollution caused by motor vehicles;

WHEREAS, the Board further finds that:

The proposed amendments will result in reductions of ambient levels of ozone as a result of reductions in emissions of HC and NOx, and of CO and particulates, both as an effect of the lower standards and the increased emission control system durability;

There will be no significant adverse environmental impacts as a result of the adoption of the proposed amendments;

NOW, THEREFORE BE IT RESOLVED, that the Board hereby approves the proposed amendments to Sections 1900, 1956.8, 1960.1, 1968.1, 2061, 2112, and 2139, Title 13, California Code of Regulations, and the incorporated documents, as set forth in Attachment A hereto.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to adopt Sections 1900, 1956.8, 1960.1, 1968.1, 2061, 2112, and 2139, Title 13, California Code of Regulations, and the incorporated documents, as set forth in Attachment A, 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 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 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 will not raise 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 a waiver or for confirmation that the amendments are within the scope of an existing waiver, as appropriate, pursuant to Section 209(b)(1) of the Clean Air Act.

I hereby certify that the above is a true and correct copy of Resolution 90-35, as adopted by the Air Resources Board.

Patricia Hutchens for

Judith M. Lounsbury, Board Secretary