

State of California
AIR RESOURCES BOARD

Resolution 97-44

December 11, 1997

Agenda Item No.: 97-10-2

WHEREAS, sections 39600 and 39601 of the Health and Safety Code authorize the Air Resources Board (the Board or ARB) to adopt standards, rules and regulations and to do such acts as may be 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 sections 39002 and 39003 of the Health and Safety Code charge the Board with the responsibility of controlling air pollution from motor vehicles;

WHEREAS, in section 43000.5 of the Health and Safety Code, the Legislature has declared that the Board should take immediate action to implement programs of across-the-board reductions in vehicle emissions and smoke, including smoke from heavy-duty diesel vehicles;

WHEREAS, section 43013 of the Health and Safety Code authorizes the Board to adopt motor vehicle emission standards and in-use performance standards which it finds to be necessary, cost-effective, and technologically feasible;

WHEREAS, section 43018 of the Health and Safety Code directs the Board to endeavor to achieve the maximum degree of emission reduction possible from vehicular and other mobile sources in order to accomplish the attainment of state ambient air quality standards at the earliest practicable date;

WHEREAS, the Legislature in 1988 enacted section 44011.6 of the Health and Safety Code, which directed the Board to develop a test procedure for the detection of excessive smoke emissions from heavy-duty diesel motor vehicles;

WHEREAS, section 44011.6 as enacted in 1988 further directed the Board to prohibit, by regulation, the use of heavy-duty vehicles which are determined to have excessive smoke emissions or other emissions-related defects and to commence inspecting heavy-duty motor vehicles;

WHEREAS, pursuant to section 44011.6 of the Health and Safety Code, the Board following a November 1990 hearing adopted sections 2180 through 2187, title 13, California Code of

Regulations; these regulations established the California heavy-duty vehicle inspection program (the HDVIP, or roadside program) and specified a test procedure for measuring the opacity of smoke from diesel engines that used an electronic smokemeter and was based on the Society of Automotive Engineers (SAE) SAE J1243 procedure;

WHEREAS, the HDVIP regulations were actively enforced by staff from November 1991 until October 15, 1993, when the ARB temporarily suspended enforcement of the roadside program and redirected staff to work on reformulated fuels issues; during the November 1991 to October 1993 period the failure rate of heavy-duty vehicles with excessive smoke was reduced from 34 percent to 21 percent;

WHEREAS, in the fall of 1993 the Legislature enacted Assembly Bill (AB) 584 (Stats. 1993, ch. 578, Cortese), which amended section 44011.6 of the Health and Safety Code to require that the test procedures used in the roadside program produce consistent and repeatable results, stating that this requirement is satisfied by the adoption of the SAE J1667 test procedure then under development; AB 584 further required that the program produce no false failures, or ensure that any false failures be remedied without penalty to the vehicle owner;

WHEREAS, the ARB postponed resumption of mandatory HDVIP inspections pending the completion of SAE J1667 and the development of mechanisms for assuring compliance with the AB 584 mandates;

WHEREAS, the final SAE J1667 was issued in February 1996, following a multi-year development process in which it was ultimately approved unanimously by an SAE task group which included an ARB representative as well as representatives of industry, academia and other governmental agencies;

WHEREAS, in order to further evaluate the SAE J1667 test procedure and to identify appropriate opacity standards using the new test procedure, during 1996 and 1997 the staff conducted a Random Truck Opacity Survey involving opacity tests on about 1000 heavy-duty vehicles, and a 71-vehicle Truck Repair Study;

WHEREAS, the Legislature in 1990 enacted section 43701(a) of the Health and Safety Code, directing the Board to adopt regulations which require that owners or operators of heavy-duty diesel motor vehicles perform regular inspections of their vehicles for excessive smoke emissions;

WHEREAS, section 43701(a) of the Health and Safety Code requires that the Board, in adopting the periodic smoke inspection regulations, specify the inspection procedure, the frequency of inspections, the emission standards for smoke, and the actions the heavy-duty diesel motor vehicle owner or operator is required to take to remedy excessive smoke emissions;

WHEREAS, pursuant to section 43701(a) of the Health and Safety Code, following a December 1992 hearing the Board adopted sections 2190 through 2194, title 13, California Code of Regulations, which established a periodic smoke self-inspection program (the PSIP, or fleet program) for heavy-duty diesel-powered vehicle fleets, to be implemented starting January 1, 1995; the operative date was subsequently postponed to January 1, 1996 and since that time the ARB has administered the program on a voluntary basis pending adoption of the SAE J1667 procedure;

WHEREAS, the staff has proposed regulatory amendments which would make a number of changes to the HDVIP and PSIP regulations, including: (i) designation of SAE J1667, as issued February 1996, as the test procedure for determining smoke opacity under the roadside and fleet smoke inspection programs; (ii) retention of the existing opacity standards of 55 percent for pre-1991 engines and 40 percent for 1991 and newer engines, as measured by the new test procedure; (iii) establishment of a Notice of Violation mechanism for pre-1991 engines whose smoke opacities exceed the 55 percent standard, but do not exceed an opacity of 69 percent; the owner would have 45 days without penalty to bring the vehicle into compliance with the 55 percent standard before a citation is issued; (iv) retention of exemptions allowing technologically less stringent standards for specific engine families based on data submitted by the engine manufacturers, and "grandfather in" exemptions of engine families issued under the existing regulations; and (v) requiring explicitly that a demonstration of correction issued for a vehicle failing a roadside test/inspection must include evidence that the vehicle has passed a post-repair test/inspection;

WHEREAS, the amendments proposed by staff to the fleet program regulations would institute a 15-month phase-in starting July 1, 1998, allow the older (SAE J1243) smokemeters to be used in fleet testing until July 1, 1999, and exempt the newest four model years of heavy-duty engines from the fleet inspection requirements;

WHEREAS, the staff proposal consists of the amendments to sections 2180-2194, title 13, California Code of Regulations, set forth in Attachment A hereto;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project which may have significant adverse environmental impacts be adopted as originally proposed if feasible alternatives or mitigation measures are available to reduce or eliminate 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 has considered the effect of the proposed amendments on the economy of the state;

WHEREAS, the Board finds that:

Excessive smoke emissions from heavy-duty diesel motor vehicles contribute significantly to the serious air pollution problem in the state;

Particulates from the excessive smoke emissions of heavy-duty diesel motor vehicles are a significant source of air contaminants;

The smoke testing procedures of SAE J1667 produce consistent and repeatable results and satisfy the requirements of Health and Safety Code section 44011.6; it is therefore appropriate to designate SAE J1667 as the test method for determining compliance with the smoke opacity standards of the HDVIP and the PSIP;

Based on data from the Truck Repair Study, retention of the existing diesel smoke opacity standards of 55 percent for pre-1991 engines and 40 percent for 1991 and newer engines when measured by the new SAE J1667 test procedure, in conjunction with retention of the exemption mechanism allowing technologically less stringent standards for specific engine families based on data submitted by the engine manufacturers, is designed to ensure that no engine will fail the standards when the engine is in good operating condition and is adjusted to the manufacturer's specifications, and to further ensure that there will be few if any false failures and that any such false failures will be remedied without penalty to the vehicle owner;

Any heavy-duty diesel vehicle that exceeds the opacity standards approved herein constitutes a vehicle that emits excessive smoke;

The Notice of Violation mechanism proposed by staff for vehicles with pre-1991 model-year engines with measured opacities exceeding 55 percent but not exceeding 69 percent provides at this time a reasonable accommodation for less culpable vehicle owners;

Explicitly requiring that a vehicle failing a roadside test/inspection must subsequently be shown to have passed a post-repair test/inspection is necessary and appropriate to assure that such vehicles have been sufficiently repaired to meet the applicable requirement;

The amendments approved herein to the fleet program regulations are necessary and appropriate to implement the mandates of section 43701(a) of the Health and Safety Code;

The staff's proposed modification to the original proposal, excluding heavy-duty vehicles employed exclusively for personal uses from the PSIP requirements, is appropriate because the intent of the PSIP is to focus on vehicles used commercially or by public agencies;

WHEREAS, the Board further finds that:

Compared to having no heavy-duty inspection programs, the roadside and fleet programs with the amendments approved herein are expected to achieve the following emission reductions in 1999: 6.37 tons per day (tpd) reactive organic gases (ROG), 12.24 tpd oxides of nitrogen (NO_x), and 5.24 tpd fine particles designated as PM₁₀, as well as a 29 percent reduction in heavy-duty vehicles with excessive smoke;

The above emission benefits are slightly less than the emission benefits that would be realized under the programs as they are now contained in the California Code of Regulations; compared to the existing regulations, the amendments approved herein are estimated to lessen the 1999 emission reductions by 1.34 tpd ROG, 2.47 tpd NO_x, and 1.06 tpd PM₁₀, as well as 12.9 percent fewer excessively smoking vehicles eliminated;

The lessening of emission reductions when compared to the roadside and fleet programs presently in the California Code of Regulations is a significant adverse environmental impact which is necessitated by the overriding consideration that the amendments are needed to assure that the roadside and fleet programs comply with the statutory requirements enacted by AB 508;

No significant non-air quality environmental impacts from the amendments approved herein have been identified;

The baseline inventory for California's 1994 State Implementation Plan (SIP) contains projections for the HDVIP emission benefits but does not include projections of emission reductions attributable to the PSIP; the PSIP impacts a significantly larger segment of the heavy-duty diesel vehicle fleet than the HDVIP, and the two programs combined will result in greater emission reductions for the years 1999 and 2010 than were accounted for in the SIP baseline;

The cost-effectiveness of the combined reduction in emissions of ROG, NO_x and PM₁₀ resulting from the HDVIP and PSIP regulations with the amendments approved herein is estimated to be \$1.12 per pound in 1999 and \$1.05 per pound in 2010; these estimates compare favorably to alternative emission control programs that typically cost between \$2.50 and \$5.00 per pound of emissions reduced.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby approves the amendments to sections 2180 through 2194, title 13, California Code of Regulations, as set forth in Attachment A hereto, with the modifications identified in Attachment B.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to incorporate into the approved amendments the modifications described in Attachment B hereto, with such other

conforming modifications as may be appropriate, and then to adopt the modified amendments, after making the modified regulatory language available for public comment for a period of 15 days, provided that the Executive Officer shall consider such written comments regarding the modified text 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 Executive Officer is directed to evaluate the efficacy of the Notice of Violation mechanism for pre-1991 model-year engines, after the mechanism has been in place for one year, and shall report to the Board by December 31, 1999 on the results of enforcing the mechanism with a recommendation whether the regulations should be amended to require that citations be issued to all vehicles with pre-1991 engines whose test opacity exceeds 55 percent.

I hereby certify that the above is a true and correct copy of Resolution 97-44, as adopted by the Air Resources Board.

Pat Hutchens, Clerk of the Board

Resolution 97-44

December 11, 1997

Identification of Attachments to the Resolution

Attachment A: Proposed amendments to sections 2180 through 2194, title 13, California Code of Regulations, as set forth in Attachment A to the Staff Report.

Attachment B: Staff's Suggested Changes to the Original Proposal, distributed at the hearing on December 11, 1997.

Attachment B

PUBLIC HEARING TO CONSIDER ADOPTION OF REGULATORY AMENDMENTS TO
THE CALIFORNIA HEAVY-DUTY VEHICLE INSPECTION PROGRAM AND PERIODIC
SMOKE INSPECTION PROGRAM

Presented at the December 11, 1997 Public Hearing

Staff's Suggested Modifications to the Original Proposal

The text of the originally proposed amendments is shown in *italics* to indicate additions and ~~strikeout~~ to show deletions. Modifications to the originally proposed amendments are shown in **bold underline** to indicate deletions and ~~bold-strikeout~~ to show deletions.

Modify section 2190 (b) to read as follows:

§ 2190. *Vehicles Subject to the Periodic Smoke Inspection Requirements*

These regulations shall be applicable, effective ~~January 1, 1996~~ *July 1, 1998*, as follows:

- (a) Except as provided in subsections (b), (c), (d), (e) and (f), the requirements of this ~~subchapter~~ *chapter* apply to all heavy-duty diesel-powered vehicles with gross vehicle weight ratings of 6,001 pounds or more which operate on the streets or highways within the State of California.
- (b) Heavy-duty diesel-powered vehicles which are not part of a fleet (as defined in section 2191(a)) **or are employed exclusively for personal use** are excluded from the requirements of this ~~subchapter~~ *chapter*.

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