

State of California
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider Adoption of and Amendments to Regulations Regarding Reformulated Gasoline: Phase I Gasoline Specifications (Deposit Control Additives and Lead)

Agenda Item No.: 90-15-1

Public Hearing Date: September 28, 1990

Issuing Authority: Air Resources Board

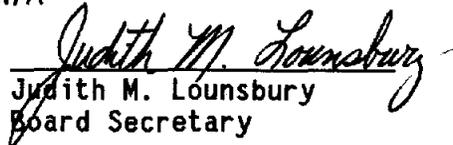
Comment: As originally proposed, this rulemaking included proposed regulations establishing several new standards for motor vehicle gasoline--a more stringent Reid vapor pressure ("RVP") standard of 7.8 pounds per square inch (psi) during the RVP season, elimination of lead in all motor vehicle gasoline except that used in construction equipment and implements of husbandry, and requirements for deposit control additives which would prevent and reduce deposits in engine components. Collectively, these constitute the ARB's "Phase I Specifications for Reformulated Gasoline."

In order to expedite the effective date of the RVP regulations, the Executive Officer adopted them in Executive Order G-608 prior to adoption of the remaining regulatory actions. The RVP regulations were approved by the Office of Administrative Law on May 6, 1991. This Response covers the remaining regulatory actions pertaining to deposit control additives in motor vehicle gasoline (adoption of Title 13, California Code of Regulations, section 2257) and to the lead content of gasoline (amendments to 13 C.C.R. sections 2252, 2253.2 and 2254, and adoption of 13 C.C.R. section 2253.4). These regulatory actions were adopted by Executive Order G-626.

No comments were received identifying any significant environmental issues pertaining to the deposit control additives or lead regulations. The staff report identified no adverse environmental effects.

Response: N/A

Certified:


Judith M. Lounsbury
Board Secretary

Office of the Secretary

Date:

5/30/91

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RESOURCES DIVISION

State of California
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider Adoption of and Amendments to Regulations
Regarding Reformulated Gasoline: Phase I Gasoline Specifications

Agenda Item No.: 90-15-1

Public Hearing Date: September 27, 1990

Issuing Authority: Air Resources Board

Comment: As originally proposed, this rulemaking included proposed regulations establishing several new standards for motor vehicle gasoline--a more stringent Reid vapor pressure ("RVP") standard of 7.8 pounds per square inch (psi) during the RVP season, elimination of lead in all motor vehicle gasoline except that used in construction equipment and implements of husbandry, and requirements for deposit control additives which would prevent and reduce deposits in engine components. Collectively, these constitute the ARB's "Phase 1 Specifications for Reformulated Gasoline."

In order to expedite the effective date of the RVP regulations, the Executive Officer adopted them in Executive Order G-608 prior to adoption of the remaining regulatory actions. This Response covers only the regulatory actions pertaining to gasoline RVP: amendments to section 2251, and adoption of sections 2251.5 and 2262, Title 13, California Code of Regulations (the "RVP regulations").

No comments were received identifying any significant environmental issues pertaining to the RVP regulations. The staff report identified no adverse environmental effects.

Response: N/A

Certified:

Patricia Hitchcock for
Judith M. Lounsbury
Board Secretary

Date:

3/22/91

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MAY 7 1991

RESOURCES AGENCY OF CALIFORNIA

State of California
AIR RESOURCES BOARD

Resolution 90-59

September 28, 1990

Agenda Item No: 90-15-1

WHEREAS, Health and Safety Code sections 39600 and 39601 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, Health and Safety Code section 43018(a), enacted by the California Clean Air Act of 1988, 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 the state ambient air quality standards at the earliest practicable date;

WHEREAS, Health and Safety Code section 43018(b) directs the Board no later than January 1, 1992 to take whatever actions are necessary, cost-effective, and technologically feasible in order to achieve, by December 31, 2000, a reduction of reactive organic gases (ROG) of at least 55 percent and a 15 percent reduction in the emissions of oxides of nitrogen (NOx) from motor vehicles, and the maximum feasible reductions in particulates (PM), carbon monoxide (CO), and toxic air contaminants from vehicular sources;

WHEREAS, Health and Safety Code section 43018(c) provides that in carrying out section 43018, the Board shall adopt standards and regulations which will result in the most cost-effective combination of control measures on all classes of motor vehicles and motor vehicle fuel, including but not limited to specification of vehicular fuel composition;

WHEREAS, Health and Safety Code section 43018(d) directs the Board to adopt a schedule in which (i) workshops on the adoption of regulations governing Reid vapor pressure (RVP) are held not later than January 31, 1990 and a hearing to adopt an RVP regulation is held not later than November 15, 1990, and (ii) workshops on the adoption of regulations governing detergent content shall be held not later than January 31, 1991 and a hearing to consider adoption of a regulation on detergent content is held not later than November 15, 1991;

WHEREAS, Health and Safety Code section 43830 directs the Board to establish, by regulation, maximum standards for the volatility of gasoline at nine pounds per square inch (psi) RVP as determined by the American Society of Testing and Materials (ASTM) Test D 323-58 or by an appropriate test determined by the Board, giving full consideration to topography and climatic conditions, provided that until October 1, 1993, any blend of gasoline of at least 10 percent ethyl alcohol shall not result in a violation of any RVP regulation of the Board unless the gasoline in the blend exceeds the maximum standard in the regulation;

WHEREAS, Chapter 932 of Statutes 1990 (Assembly Bill 3555, Sher), effective January 1, 1991, amends Health and Safety Code section 43830 to direct the Board to adopt a gasoline RVP standard of nine psi or less;

WHEREAS, the Board has previously adopted: (i) Title 13, California Code of Regulations (CCR), section 2251, which limits the RVP of motor vehicle gasoline to 9 psi in specified smog season summer months in specified air basins; (ii) 13 CCR section 2253, which imposes a quarterly average lead content standard for leaded gasoline of 0.8 gm/gal (with a per batch limit of 0.8 gm/gal for regular gasoline and 1.1 gm/gal for premium with provisions for offsetting), and prohibits the sale of gasoline represented as unleaded which has a lead content exceeding 0.05 gm/gal, which has had lead purposefully added to it, or which has a phosphorus content exceeding 0.005 gm/gal; (iii) 13 CCR section 2254, which prohibits adding manganese or manganese compounds in unleaded gasoline, and (iv) 13 CCR section 2252, which limits the sulfur content of unleaded gasoline to 300 parts per million (ppm);

WHEREAS, the Board's staff has conducted several workshops regarding regulations for reformulated gasoline and has developed a program for the establishment of reformulated gasoline regulations in two phases, Phase 1 involving specifications for lower RVP, deposit control additives, and lead content, and Phase 2 involving more comprehensive regulations planned to be proposed for consideration by the Board at a September, 1991 hearing;

WHEREAS, the Board's staff has conducted multiple workshops, before and after January 31, 1990, regarding the proposed Phase 1 reformulated gasoline specifications;

WHEREAS, the staff has proposed the adoption and amendment of regulations which would, starting January 1, 1992:

Limit the RVP of motor vehicle gasoline sold during the RVP season to 7.8 psi; maintain the existing RVP control periods except for adding May to the San Diego Air Basin control period, including the Northeast Plateau Air Basin, and starting the periods a month earlier for gasoline being transferred from a refinery or import facility; define gasoline to include mixtures of alcohol with more than 50 percent fuel commonly or commercially known or sold as gasoline and alcohol, and exempt gasoline containing at least 10 percent ethanol from the RVP limit as long as the base gasoline meets the 7.8 psi standard and Health and Safety Code section 43830 provides for such treatment; identify optional test methods for determining RVP; during the first two years, authorize variances which allow a RVP as high as 9 psi if specified findings are made; and clarify the applicability of the limits to sales during the start and end of the RVP season;

Require the use of deposit control additives in motor vehicle gasoline by mandating that gasoline be certified to meet specified performance criteria for reducing and preventing deposits on port fuel injectors, carburetors, and intake valves when tested in accordance with specified test procedures, or by alternative test procedures where appropriate; and

Prohibit the sale of gasoline to which lead has been purposefully added, or which has a lead content exceeding 0.05 g/gal, for use in any motor vehicles except farm equipment and special construction equipment; and prohibit starting January 1, 1994 the sale of motor vehicle gasoline not represented as unleaded, except that used in farm equipment and special construction equipment;

WHEREAS, the proposal would be effected by the adoption of Title 13, California Code of Regulations, sections 2251.5, 2253.4, and 2257, and by amendments to sections, 2251, 2252, 2253.2, and 2254, as set forth in Attachments A, B, and C;

WHEREAS, the California Environmental Quality Act and Board regulations require that an action not be adopted as proposed where it will have significant adverse environmental impacts and alternatives or feasible mitigation measures to the proposed action 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:

It is appropriate for reformulated gasoline regulations to be considered in two phases; the regulations approved herein can be implemented in the 1992 timeframe and are supported by adequate data to project expected emissions reductions and the associated energy, economic, and environmental impacts; more comprehensive regulations can be more effectively defined after consideration of the results of the substantial body of testing and data collection occurring at the present time;

The state and national health-based ambient air quality standards for ozone, carbon monoxide (CO), and PM10 are regularly and significantly exceeded in many areas of California, most severely in the South Coast Air Basin;

Motor vehicles contribute more than half the emissions in California of reactive organic gases (ROG) and oxides of nitrogen (NOx), the precursors of ozone formation;

Reducing the RVP of gasoline used in motor vehicles reduces ROG evaporative emissions from the vehicles; the new RVP regulation approved herein is expected to reduce statewide ROG emissions from motor vehicles by approximately 80 tons per day in 1992;

Based on currently available information, limiting the RVP of gasoline to 7.8 psi during the RVP control periods when evaporative emissions are highest and climatological conditions are most conducive to ozone formation will result in a favorable combination of vehicular emission reductions and minimal impacts on vehicle performance, and such limits can be achieved in the short-term, by January 1, 1992;

The modifications, set forth in Attachment D hereto, to the originally proposed text of the RVP regulations are necessary and appropriate to provide additional flexibility in meeting the requirements and determining compliance; the adoption of the automated test method for optional use in the new and existing RVP regulations will enable the use of accurate and easy-to-use instruments which produce results equivalent to those achieved with ASTM Method D 323-58;

The use of deposit control additives in gasoline can reduce motor vehicle emissions of hydrocarbons, CO and NOx;

The deposit control additives regulation approved herein will assure that appropriate deposit control additives are present in gasoline in concentrations sufficient to effectively reduce and prevent deposits in port fuel injectors, carburetors, and intake valves;

The deposit control additives regulation approved herein is conservatively estimated to result in 1992 in statewide emission reductions of about 3 tons per day of hydrocarbons, about 30 tons per day of CO, and about 2 tons per day of NOx, and is also expected to result in motor vehicle performance benefits including maintaining vehicle fuel economy, engine power output, and engine driveability;

The modifications, set forth in Attachment D hereto, to the proposed deposit control additives regulation are appropriate to streamline the certification process; present data indicates that the port fuel injector cleanliness test is likely sufficient to demonstrate adequate performance in preventing and reducing carburetor deposits;

The use of lead in motor vehicle gasoline results in vehicular emissions of lead and of ethylene dichloride (EDC) and ethylene dibromide (EDB), which are used in conjunction with lead in gasoline; the adverse health effects of leaded gasoline are well known and lead exposure affects key enzymes in the production of red blood cells and can cause damage to the central nervous system; EDC and EDB have been identified by the Board as toxic air contaminants;

The regulation approved herein prohibiting the use of lead in most motor vehicle gasoline is expected to reduce statewide emissions of lead, EDC and EDB by approximately 1 ton per day each in 1992;

It is necessary to provide for exemptions in the lead regulations for farm equipment and special construction equipment because such vehicles could suffer valve-seat damage when operated on unleaded gasoline under certain conditions;

The regulations approved herein prohibiting the sale of most motor vehicle gasoline not represented as unleaded starting January 1, 1994, and amending the current sulfur, phosphorus, and manganese restrictions on unleaded gasoline so that they apply to gasoline represented as unleaded, are expected to reduce statewide

emissions of sulfur oxides by about 5 tons per day in 1994, and to assure minimal emissions of phosphorus and manganese from motor vehicles;

The regulations approved herein are technologically feasible within the applicable timeframes; the provisions regarding gasoline represented as unleaded will allow refiners two additional years to comply with the sulfur content limit of 300 ppm for unleaded gasoline;

The RVP regulation approved herein has an estimated cost-effectiveness of \$1.10 to \$1.90 per pound of volatile organic compounds reduced, the deposit control additives regulation approved herein has an estimated cost-effectiveness of \$0.50 per pound of criteria pollutant reduced, and the regulatory actions pertaining to lead in gasoline have an estimated cost-effectiveness of \$2.00 per pound of pollutant reduced; these cost-effectiveness ratios are within the range of other control measures adopted to reduce emissions of these pollutants and expected to be reasonably necessary to achieve the ambient air quality standards in California;

The regulations approved herein are necessary and appropriate to attain and maintain the state and national ambient air quality standards identified above and to reduce exposures to toxic air contaminants;

The economic impacts of the regulations approved herein are warranted in light of the public health benefits associated with the regulations; and

The RVP and deposit control additive regulations are not expected to have any significant adverse environmental impacts; the proposed lead regulations may result in significant adverse environmental impacts resulting from slight emission increases at those refineries that need additional processing equipment to enable compliance; the permit requirements of the air pollution control districts are expected substantially to mitigate such impacts; to the extent such impacts are not fully mitigated they would be outweighed by the greater overall emissions reductions resulting from the approved regulations.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby approves the adoption of Title 13, California Code of Regulations, sections 2251.5, 2253.4, and 2257, and the amendments to sections, 2251, 2252, 2253.2, and 2254, as set forth in Attachments A, B, and C hereto, with the modifications set forth in Attachment D hereto including the adoption of Title 13, California Code of Regulations, section 2262.

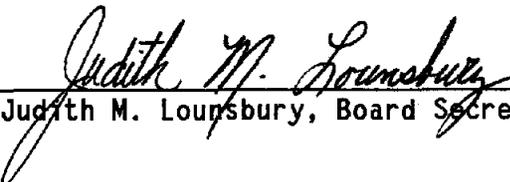
BE IT FURTHER RESOLVED that the Board directs the Executive Officer to adopt the regulatory changes set forth in Attachments A, B and C, with the modifications set forth in Attachment D, after making them available to the public for a period of fifteen days, with such further modifications as may be appropriate in light of written comments submitted, provided that the

Executive Officer shall present the regulations to the Board for further consideration if the Executive Officer determines that this is warranted in light of supplemental written comments received.

BE IT FURTHER RESOLVED that the Board endorses the program for the development of Phase 2 reformulated gasoline regulations which would define the "cleanest" possible gasoline to achieve maximum reductions in ozone-forming potential and emissions of criteria and toxic air contaminants at the lowest cost to the consumer; the Board urges the oil industry to cooperate fully with the Board's staff in the joint cooperative program to collect information on the properties of gasoline produced for sale in California; and the Board directs the Executive Officer to continue developing a comprehensive regulatory proposal for Phase 2 reformulated gasoline with appropriate public input, and to schedule a public hearing in September, 1991 for the Board to consider the adoption of such regulations with an ultimate implementation date targeted for the 1995-1996 time period.

BE IT FURTHER RESOLVED, that the Board directs the Executive Officer to work with industry in further analyzing the need for a carburetor cleanliness test as an effective indicator of deposit control additive effectiveness; the Executive Officer is directed to propose the addition of a carburetor cleanliness test to the deposit control additive certification procedures if new data indicate such a separate test is necessary to demonstrate adequate performance in preventing and reducing carburetor deposits.

I hereby certify that the above is a true and correct copy of Resolution 90-59, as adopted by the Air Resources Board.


Judith M. Lounsbury, Board Secretary