

RESOLUTIONS

No.	Item	Staff	Hearing Scheduled	Date Adopted	+ EIS to Resources
81-1	Exhaust Emissions Standards for 1984 (+) heavy duty engines	MSCD Sommer- field	1/21/81	1/21/81	4/6/81
81-2	Source tisting fees and requirements	Jordan A& F	3/22/81	5/21/81	6/11/81
81-3	U.C. Riverside, \$72,344, Research Fumigation Chambers	Laura Research	Mail Ballot	1/6/81	N/A
81-4	Research \$249,993 AI Organic compound emissions	Laura Research	Mail Ballot	1/30/81	N/A
81-5	Suggested Control Measure Electric Utility Gas Turbines	Reese SSCD	1/21/81	3/25/81	N/A
81-6	Research, \$99,505 SAI, Asbestos emissions	Laura Research	Mail Ballot	1/30/81	N/A
81-7	Research \$84,982 System control Inc., Vehicle emissions control systems	" "	" "	1/30/81	N/A
81-8	Research, \$154,339 UC Riverside, hydrocarbon reactivities	" "	" "	1/30/81	N/A
81-9	Research, \$68,018 UC So. Cal. Health hazards of NO2 inhalation	" "	" "	1/30/81	N/A
81-10	Ambient Air Quality Stadard for Ozone Mountain Counties Basin portion of Es Dorado & Mid-Portion of Placer Co., SIP	Randolph	3/26/81	3/26/81	4/6/81
81-11	Changes to Exhaust Emission Standards for 1983 & Subsequent model Passenger, Lt.Duty &Med Duty vehicles (4NOx)	Rafael Susno- witz	5/20/81	5/20/81	6/22/81
81-12	VOID	-----	-----	-----	-----
81-13	Photochemically Reactive compound Emissions from Oil & Natural Gas Prod. Operations	Metzger	5/20/81	6/25/81	7/2/81
81-14	Price Waterhouse Research \$64,110, review & analysis, cost accounting	"	Mail Ballot 3/26/81	3/26/81	N/A
81-15	Research Custom Engineering \$71,022, aftermarket parts	" "	Mail bollot 3/26/81	3/26/81	N/A
81-16	Research, UC Irvine \$103,425 particles in childrens lungs	" "	3/26/81	3/26/81	N/A

RESOLUTIONS

No.	Item	Staff	Hearing Scheduled	Date Adopted	+ EIS Resour
81-17	Research, Uc Irvine \$100,000 exercise on Lung injury	Research	3/26/81	Mail Ballot 3/26/81	N/A
81-18	Research Dept Health Services \$82,650, mutagens/carcinogens & Community Air	" "	" "	" "	" "
81-19	Research, UC Berkeley \$129,750, effects of acid rain on plants	" "	" "	" "	" "
81-20	Research UC Riverside \$141,318 effects of SO2 on forest vegetation	" "	" "	" "	" "
81-21	Research, UC Riverside \$144,816, atmospheric mutagens in SC Air Basin	" "	" "	" "	" "
81-22	Research, USC \$58,792, correlative & sensitive discriminants	" "	" "	" "	" "
81-23	Research, UC Riverside \$154,366, chemical consequences of air quality standards	" "	" "	" "	" "
81-24	Research, MRI \$100,731, & CIT, \$71,958, cloud water chemistry	" "	" "	" "	" "
81-25	Research, MRI \$100,731, & CIT, \$76,958, cloud water chemistry	" "	" "	" "	" "
81-26	Research, Olson Labs \$91,676, deterioration of emission control systems	" "	" "	" "	" "
81-27	Research, UCLA \$200,000, change in lung function & exposure to oxidant	" "	" "	" "	" "
81-28	Research, \$249,958, Cal Tech & Meteorological Research, Inc. So. East Desert Transport Study	" "	" "	5/4/81	N/A
81-29	Research (rescinding 81-7)				
81-30	Honoring Dr. Evans on her retirement from the Board	EO	3/26/81	3/26/81	N/A
81-31	PCB Disposal	Morgester	3/25/81	Not adopted	
81-32	VOID _____	_____	_____	_____	_____

RESOLUTIONS

No.	Item	Staff	Hearing Scheduled	Date Adopted	+ EIS to Resources
81-33	SCM-Pumps and compressors	Lovelace SSCD	5/20/81	5/21/81	8/21/81
81-34	Subvention Program	RPD	4/23/81	4/23/81	6/2281
81-35	Research \$199,903 Sci Applications Inc. Hazardous and Toxic waste materials	Research	4/23/81	4/23/81	N/A
81-36	Research, Systems Control Inc. \$119,288, Electronic Auto Emissions Study	Research	4/22/81	4/23/81	N/A
81-37	Geothermal	George Lew	4/22/81	4/23/81	5/28/81
81-38	Particulate Matter Offset Revision of Guidelines, Kern Co. 210.1	Effa	5/4/81	5/4/81	N/A
81-39	Lake Tahoe Redesignation-Lead Agency	Randolph	5/4/81	5/4/81	N/A
81-40	Secretaries" Week Board Secretary	Nichols	4/23/81	4/23/81	N/A
81-41	Research \$66,044 UCRiverside Air Pollution effects on Crops	Betty Redo Research	6/24/81	6/24/21	N/A
81-42	Suggested Control Measure BACT-Coal-Fired Power Plants	Goodley	6/24/81	6/24/81	N/A
81-43	Vapor Recovery Task Force-Recognititon	Trenck	6/24/81	6/25/81	N/A
81-44	Dedication to Frank Perry	Nichols	6/25/81	6/25/81	N/A
81-45	VOID				
81-46	Reaffirming 1984 Heavy D uty Exhaust Emission Standards	Heinen MSCD	9/23/81	9/24/81	10/7/81
81-47	Sulfur Content in Diesel Fuel	Goodley/ Holmes	7/29/81	7/30/81	8/19/81
81-48	Research \$79,757 AIHL (Health Services) 1 year Acid Deposition	Research Storey	7/29/81	7/29/81	N/A

RESOLUTIONS

No.	Item	Staff	Hearing Scheduled	Date Adopted	+ EIS Resources
81-49	Research \$100,372 UC Davis- 18 Months; Inhalation of Oxidant	Research Storey	7/29/81	7/29/81	N/A
81-50	Research \$9,168, rebuild facility chambers U.C. Riverside, Augmentation-	Research Storey	7/29/81	7/29/81	
81-51	Departure of Tom Austin	Nichols	7/30/81	7/30/81	N/A
81-52	Departure of Gary Rebenstein	" "	" "	" "	" "
81-53	RAPID TRANSIT DISTRICT petition	Jennings	8/26/81	8/26/81	N/A
81-54	NSR/PSD Proposed Model Rule Process	Venturini	" "	" "	" "
81-55	Citizen" Advisory committee	Trenck	8/26/81	9/24/81	N/A
81-56	UC Santa Barbara \$167,030 Reponed to Oxidants	Storey Research	9/23/81	9/24/81	N/A
81-57	UC Davis \$115,531 Effects of SO2 and ozone on crops	" "	" "	" "	" "
81-58	Cal Tech \$321,561, (3 year) Carbon particle air quality in So coast air basin	" "	" "	" "	" "
81-59	Exemption from 1984 Heavy Duty Exhaust Standards for Small Volume Vehicle Mfgs, when no suitable Cal. Engine available	Berman Legal	9/24/81	9/24/81	10/7/81
81-60	Gasoline cargo tanks	Jackson Enforce- ment	11.18/81	11/18/81	12/10/81
81-61	ARB Administrative Procddures CAC Sec. 60000-60023 and 93000-93003	Legal Krinsk	9/24/81	9/24/81	N/A
81-62	Research: AIHL \$170,284 Visibility Reduction	Research Storey	10/22/81	10/2281	N/A
81-63	Research: SAI \$110,788 Vinyl Chloride	" "	" "	" "	" "
81-64	Suggested control Measure NOx from Cement Kilns	Loscutoff SSCD	10/21/81	10/22/81	" "



Attachment A

Amend Section 1956.7, Article 2, Subchapter 1, Chapter 3 of Title 13, California Administrative Code as follows:

1956.7. Exhaust Emission Standards and Test Procedures--1981 and Subsequent Model Heavy-Duty Engines and Vehicles.

(a) The exhaust emissions from new 1981 and subsequent model heavy-duty engines, except engines used in medium-duty vehicles, shall not exceed:

<u>Primary Exhaust Emission Standards</u> (grams per brake horsepower hour)			
<u>Model Year</u>	<u>Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Hydrocarbons plus Oxides of Nitrogen (NO<sub>2</sub>)</u>
1981-1983	1.0	25	6.0
OR*	-	25	5
1984 and subsequent	0.5	25	4.5

\*The two sets of standards for each model year are alternatives. A manufacturer has the option for each engine family of showing compliance with either set. Separate deterioration factors shall be established, where applicable, for HC, CO, NOx and/or the combined emissions of HC and NOx.

The following optional exhaust emission standards are applicable to engines tested pursuant to the optional federal test procedures and regulations for 1984 and subsequent model heavy-duty engines. These standards replace the federal standards in CFR Sections 86.084-10, 86.084.11, and 86.085-11 for hydrocarbons, carbon monoxide and oxides of nitrogen, only.\*\*

<u>Optional Exhaust Emission Standards</u> (grams per brake-horsepower-hour)			
<u>Model Year</u>	<u>Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Oxides of Nitrogen</u>
<u>1984 and Subsequent</u>	<u>1.3</u>	<u>15.5</u>	<u>5.1</u>

\*\*The federal 13-mode optional standards for 1984 model year diesel-powered engines do not apply.

(b) The test procedures for determining compliance with 1981 standards are set forth in the "California Exhaust Emission Standards and Test Procedures for 1981 Model Heavy-Duty Engines and Vehicles," adopted April 23, 1980.

(c) The test procedures for determining compliance with standards applicable to 1982 and subsequent are set forth in the "California Exhaust Emission Standards and Test Procedures for 1982 and Subsequent Model Heavy-Duty Engines and Vehicles", adopted October 5, 1976, as last amended January 21, 1981.

(d) A manufacturer may elect to certify heavy-duty vehicles of less than 10,000 pounds maximum gross vehicle weight rating as medium-duty vehicles under Section 1960.1 of this Chapter, in which event heavy-duty emission standards and test procedures shall not apply.

Attachment B

State of California  
AIR RESOURCES BOARD

Note: These procedures are printed in a style to indicate the adopted changes. New text is underlined and deleted portions are noted.

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES  
FOR 1982 AND SUBSEQUENT MODEL  
HEAVY-DUTY ENGINES AND VEHICLES

Adopted: October 5, 1976  
Amended: November 21, 1977  
Amended: March 1, 1978  
Amended: May 24, 1978  
Amended: April 23, 1980  
Amended: May 22, 1980  
Amended: January 21, 1981

State of California  
AIR RESOURCES BOARD

Resolution 81-1

January 21, 1981

Agenda Item No.: 81-1-1

WHEREAS, Section 39601 of the Health and Safety Code authorizes the Air Resources 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, Sections 43101 and 43104 of the Health and Safety Code authorize the Board to adopt vehicle emission standards and test procedures in order to control or eliminate air pollution caused by motor vehicles;

WHEREAS, the Environmental Protection Agency (EPA) recently promulgated new heavy-duty engine gaseous emission regulations to be implemented commencing in 1984 based upon transient cycle test procedures;

WHEREAS, the Air Resources Board at the May 1980 public hearing elected to extend the current California heavy-duty engine standards one additional year (1983) in order to reduce the manufacturers' certification burden during the facilities changeover necessary to comply with the new federal heavy-duty emissions control regulations;

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

WHEREAS, the Board finds that adopting the federal "Gaseous Emission Regulations for 1984 and Later Model Year Heavy-Duty Engines" as an optional test procedure for California would provide manufacturers with the flexibility needed to implement the federal heavy-duty program thus providing a significant economic benefit while maintaining the stringency of the California exhaust emission standards for 1984 and beyond;

WHEREAS, the Board finds that the federal hydrocarbon and carbon monoxide exhaust emission standards for 1984 and later model year heavy-duty engines based upon the transient cycle test procedure are at least as stringent as the applicable California hydrocarbon and carbon monoxide standards based upon the steady-state test procedures;

WHEREAS, the Board finds the proposed California optional oxides of nitrogen standard for the 1984 and subsequent model year heavy-duty engines based upon the federal transient cycle is equivalent to the current steady-state NOx standard for 1984;

WHEREAS, EPA is likely to promulgate subsequent amendments to the federal "Gaseous Emission Regulations for 1984 and Later Model Year Heavy-Duty Engines";

WHEREAS, the Board finds that adopting the federal heavy-duty transient cycle test procedures and regulations for 1984 and later as an option would have no adverse impact on air quality, and therefore no mitigation of environmental effects is required; and,

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; .

NOW, THEREFORE BE IT RESOLVED, that the Board hereby amends Section 1956.7, Article 2, Subchapter 1, Chapter 3 of Title 13, California Administrative Code, as set forth in Attachment A hereto;

BE IT FURTHER RESOLVED, that the Board hereby adopts the "California Exhaust Emission Standards and Test Procedures for 1982 and Subsequent Model Heavy-Duty Engines and Vehicles," adopted October 5, 1976, amended May 22, 1980, and as last amended January 21, 1981, as set forth in Attachment B hereto;

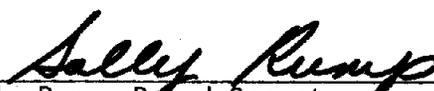
BE IT FURTHER RESOLVED, that the Board hereby determines that the exhaust emission standards adopted herein are, in the aggregate, at least as protective of public health and welfare as applicable federal standards;

BE IT FURTHER RESOLVED, that the Board hereby delegates to the Executive Officer the authority to adopt amendments to the "California Exhaust Emission Standards and Test Procedures for 1982 and Subsequent Model Heavy-Duty Engines and Vehicles," adopted October 5, 1976, amended May 22, 1980, and as last amended January 21, 1981, as set forth in Attachment B hereto, to conform to subsequent amendments to the federal "Gaseous Emission Regulations for 1984 and Later Model Year Heavy-Duty Engines" promulgated by EPA, and directs the Executive Officer to bring to the attention of the Board any EPA amendments which bear upon the overall stringency of the standards.

BE IT FURTHER RESOLVED, that the Board hereby directs the Executive Officer to evaluate the technological and economic feasibility of the Board's standards for 1984 and subsequent model year heavy-duty engines and vehicles contained in Title 13, California Administrative Code, Section 1956.7, and to report his findings and recommendations to the Board.

BE IT FURTHER RESOLVED, that the Board hereby directs the Executive Officer to advise EPA of the Board's intent that, to the extent that EPA enforces the Board's standards and test procedures for heavy-duty engines and vehicles contained in Title 13, California Administrative Code, Section 1956.7 rather than EPA's regulations, EPA enforce only those standards and test procedures actually contained in Section 1956.7.

I certify that the above is a true and correct copy of Resolution 81-1, as adopted by the Air Resources Board.

  
Sally Rump, Board Secretary

CALIFORNIA EXHAUST EMISSION STANDARDS  
AND TEST PROCEDURES FOR 1982  
AND SUBSEQUENT MODEL  
HEAVY-DUTY ENGINES AND VEHICLES

The provisions of Subparts A and D, Part 86, Title 40, Code of Federal Regulations, as they pertain to heavy-duty engines and vehicles, and as they existed on April 15, 1977 are hereby adopted as the primary California Exhaust Emission Standards and Test Procedures for 1982 and Subsequent Model Heavy-Duty Engines and Vehicles. For manufacturers that elect to certify heavy-duty engines pursuant to the federal transient cycle test procedures and regulations for 1984 and subsequent years, the provisions of Subparts A and N, Part 86, Code of Federal Regulations promulgated January 21, 1980 are hereby adopted as optional "California Exhaust Emission Test Procedures and Regulations for 1984 and Subsequent Model Heavy-Duty Engines and Vehicles." The federal procedures are applicable with the following exceptions and additions:

- A. 1- Subsection A of this procedure is applicable to new 1982 and subsequent model heavy-duty engines and vehicles tested pursuant to the primary and optional test procedures and standards.
1. A manufacturer may elect to certify heavy-duty vehicles of 10,000 pounds maximum gross vehicles weight rating or less as medium-duty vehicles, in which event heavy-duty standards and test procedures will not apply.
  2. Definitions.
    - a. "Administrator" means the Executive Officer of the Air Resources Board.
    - b. "Certificate of Conformity" means "Executive Order" certifying vehicles for sale in California.
    - c. "Certification" means certification as defined in Section 39018 of the Health and Safety Code.
    - d. "Heavy-duty engine" means an engine which is used to propel a heavy-duty vehicle.
    - e. "Heavy-duty vehicle" means any motor vehicle having a manufacturer's gross vehicle weight rating greater than 6,000 pounds, except passenger cars.
    - f. "Medium-duty vehicle" means any heavy-duty vehicle having a manufacturer's gross vehicle weight rating of 8500 pounds or less.

3. Any reference to vehicle or engine sales throughout the United States shall mean vehicle or engine sales in California.
  4. Regulations concerning EPA hearings, EPA inspections, and specific language on the Certificate of Conformity, shall not be applicable to these procedures.
  5. ~~15-~~ Vehicle manufacturers shall affix a decal on each production vehicle in accordance with Section 43200 of the California Health and Safety Code.
- B.
5. Subsection B of this procedure is applicable to the primary test procedures and standards for diesel all heavy-duty engines and vehicles:
    1. For gasoline and diesel-powered engines and vehicles:
      - a. ~~6-~~ Durability data submitted pursuant to subparagraph 86.079-24(f) may be from engines previously certified by EPA or ARB.
      - b. ~~7-~~ The requirement in subparagraph 86.079-28(b)(4)(i)(B) (durability engines must meet emission standards) shall refer to federal emission standards.
      - c. ~~8-~~ Labeling required pursuant to paragraph 86.079-35 and Section 1965, Chapter 3, Title 13 of the California Administrative Code shall conform with the requirements specified in the "California Motor Vehicle Tune-Up Label Specifications."
      - d. ~~9-~~ A statement must be supplied that the production engines shall be in all material respects the same as those for which certification was granted.
      - e. ~~11-~~ The average brake horsepower at each mode shall be reported for all emission tests.
      - f. ~~14-~~ Engine manufacturers may apply durability and/or emission test data from 1979 and earlier model years towards certification for 1982 and subsequent models for similar engines, notwithstanding differences in the instrumentation. In the event that hydrocarbon emission data based on measurements from a nondispersive infrared analyzer are used pursuant to this section, such data shall be multiplied by a factor of 1.5 prior to comparison with the standards.
    2. ~~16-~~ For gasoline-powered engines and vehicles only:
      - a. The mechanism for adjusting the idle air/fuel mixture, if any shall be designed so that either:

- i. The mixture adjustment mechanism is not visible, even with the air cleaner removed, and special tools and/or procedures are required to make adjustments; or
  - ii. In the alternative, the Executive Officer may, upon reasonable notice to the manufacturer, require that a certification test of an engine or vehicle be conducted with the idle air/fuel mixture at any setting which the Executive Officer finds corresponds to settings likely to be encountered in actual use. The Executive Officer, in making this finding, shall consider the difficulty of making adjustments, damage to the carburetor in the event of any effort to make an improper adjustment, and the need to replace parts following the adjustment.
- b. The manufacturer shall submit for approval by the Executive Officer the proposed method of compliance with this requirement in its preliminary application for certification.
- e. The Executive Officer may, on a case-by-case basis, exempt from the requirements of this section engines which use carburetors substantially different in design from carburetors used on light or medium-duty vehicles and which the manufacturer demonstrates cannot be made to comply with this section within the available lead time. Such exemptions shall only apply to the 1982 model year.
- b. 72. A gasoline-powered vehicle manufacturer shall provide with the following in its the application:
  - a. i. Identification and description of the vehicle models for which certification is requested.
  - b. ii. Identification and description of the engines to be used in those vehicle models.
  - e. iii. Reference to the engine manufacturer's Executive Order certifying these engines.
- c. 70. If a gasoline-powered engine manufacturer requires the use of unleaded fuel, a statement will be required that the engine and transmission combinations for which certification is requested are designed to operate satisfactorily on a gasoline having a research octane number not greater than 91.

3. For diesel-powered heavy-duty engines only:

- a. No durability fleet or smoke emission test will be required and any reference to durability testing shall be optional. No deterioration factor shall be used for calculating the emission test results. The 125 hour test shall be used to determine compliance with the emission standards.
- b. Evidence must be submitted to the Executive Officer to demonstrate the durability of the emission control system. Such evidence may include durability test data and/or an engineering evaluation of the system. This evaluation shall be based on previous experience and/or similarity to previously certified systems.

C. Exhaust Emission Standards:

1. 13- The following primary exhaust emission standards represent the maximum projected emissions from new heavy-duty gasoline engines and the maximum 125-hour test exhaust emissions from new heavy-duty diesel engines:

Primary Exhaust Emission Standards  
(grams per brake horsepower hour)

<u>Model Year</u>	<u>Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Hydrocarbons Plus Oxides of Nitrogen (NO<sub>2</sub>)</u>
1982 - 1983	1.0	25	6.0
OR*	-	25	5
1984 and subsequent	0.5	25	4.5

\*The two sets of standards for each model year are alternatives. A manufacturer has the option for each engine family of showing compliance with either set.

Separate deterioration factors shall be established, where applicable, for HC, CO, NO<sub>x</sub> and/or the combined emissions of HC and NO<sub>x</sub>.

2. The following optional exhaust emission standards are applicable pursuant to the federal test procedure and regulations for 1984 and subsequent model heavy duty engines. These standards replace the federal standards in CFR Sections 86.084-10, 86.084-11, and 86.085-11 for hydrocarbons, carbon monoxide and oxides of nitrogen, only.\*\*

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider Amendments to Title 13, Section 1956.7,  
California Administrative Code, Regarding Exhaust Emission Standards  
and Test Procedures for 1984 and Subsequent Model Heavy-Duty Engines

Public Hearing Date: January 21, 1981

Response Date: January 21, 1981

Issuing Authority: Air Resources Board

Comment: None raised.

Response: None.

CERTIFIED:

*Sally Rump*  
Sally Rump  
Board Secretary

3/31/81  
(Date)

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APR 06 1981

Resources Agency of California

# Memorandum

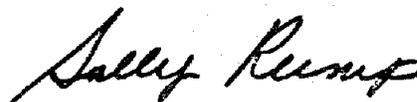
To : Huey D. Johnson  
Secretary  
Resources Agency

Date : April 6, 1981

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

From : 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 decision and response to environmental comments raised during the comment period.



Sally Rump  
Board Secretary

attachments

Resolution 81-5  
Resolution 81-10

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Office of the Secretary

APR 06 1981

Resources Agency of California

# Memorandum

: Gary Rubenstein  
Deputy Executive Officer

Date : March 12, 1981

Subject: Heavy-Duty Engine  
Standards - implementing Board  
action

  
W. Thomas Jennings  
Staff Counsel

From : **Air Resources Board**

Attached for your review are:

- (a) Resolution 81-1;
  - (1) Attachment A (regulations)
  - (2) Attachment B (test procedures)
- (b) Final Summary and Statment of Reasons for Proposed Rulemaking; and
- (c) Response to Significant Environmental Issues

The resolution includes two new paragraphs at the end I have drafted to implement the additional points raised by the Board.

The Final Summary and Statement of Reasons for Proposed Rule-making contains some technical changes from references to the proposed amendment to references to the actual amendment. Part IV, "Opposing Considerations and Agency Response", is new.

Attachments A (regulations) and B (test procedures) incorporate changes made by MSCD to delete the splitting of HC & NOx for the primary 1984 standards, and separating requirements for diesels and gasoline-powered vehicles in Section B of the test procedures. I have reviewed these changes and they appear appropriate.

Attachments

State of California  
AIR RESOURCES BOARD

Resolution 81-2

May 21, 1981

Agenda Item No. 81-10-1

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, Section 41512 of the Health and Safety Code has authorized the Board to establish by regulation a schedule of fees to cover the cost of securing samples of air pollution emissions as authorized by Section 41510 of the Health and Safety Code;

WHEREAS, the Board has adopted such a schedule and related provisions in Sections 91200-91206 of Title 17, California Administrative Code;

WHEREAS, Assembly Bill 3067 (Stats. 1980 Ch. 1283) amends Section 41512 of the Health and Safety Code to authorize imposition of source testing fees only for tests conducted to determine compliance with permit conditions or state or local laws or regulations relating to air pollution, and to require the Board to adopt procedures by which an operator may request that compliance testing be conducted by an independent testing service, which request may be denied by the Board for good cause;

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;

WHEREAS, the Board finds that it is necessary to amend Sections 91200-91206, and adopt Sections 91207-91220 of Title 17, California Administrative Code, to delete authorization of imposition fees for tests conducted for purposes other than determining compliance; to redefine "source" and define "responsible party"; to update the fee schedule to reflect increased costs and the need for new tests; to clarify the existing regulations and make them more concise and non-sexist; and to provide a framework for owners or operators to request compliance testing by independent testers, Board evaluation of such requests, and the conduct and followup of tests by independent testers;

WHEREAS, the Board finds that for its enforcement program to be effective, all compliance testing, including tests by independent testers, must be conducted in a manner in which the integrity and accuracy of the tests are assured, the Board has the ability to conduct tests without advance notice to the operator and to respond quickly in unforeseeable situations, and the test results are useable, particularly in subsequent court proceedings which may arise;

WHEREAS, the Board finds that the regulations set forth in Attachment A hereto would have no substantial adverse environmental impact, and therefore no alternatives and/or mitigation measures are required; and

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.

NOW, THEREFORE BE IT RESOLVED, that the Board hereby amends Section 91200 through 91206 and adopts Sections 91207 through 91220 of Article 2, Subchapter 5, Chapter 1, Part III of Title 17, California Administrative Code, as set forth in Attachment A hereto.

BE IT FURTHER RESOLVED, that the Executive Officer is directed to evaluate the practical effects of the amended regulations, and in particular the provisions relating to good cause and conflict of interest, and to recommend to the Board any revisions which may be deemed appropriate.

I certify that the above is a true and correct copy of Resolution 81-2 as adopted by the Air Resources Board

  
Sally Rump, Board Secretary

Repeal Subchapter 5, Article 2 in Title 17, California Administrative Code.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

Adopt Subchapter 5, Article 2, as amended.

Subchapter 5. Emission Data, Sampling, and Credentials for Entry

Article 2. Source Testing Fees

91200. Scope and Policy; Definition. (a) The fee schedules in this Subchapter shall not supersede or preempt any rule or regulation of any air pollution control district governing fees for source testing.

(b) ~~The fee schedules in this Subchapter shall be effective statewide.~~ The following definitions apply for the purposes of this Subchapter only.

(c) (1) "Source" means (i) any permit unit, article, machine, equipment or other contrivance which may cause the issuance of air contaminants; or (ii) any substance, such as fuel or an architectural coating, the content, characteristics, manufacture, sale, distribution or use of which is restricted by any State or local law, rule, regulation or order relating to air pollution.

(2) "Responsible party" means (i) in reference to sources defined in Subsection (b)(1)(i) of this Section, the owner, operator, or user of a source; or (ii) in reference to sources defined in Subsection (b)(1)(ii) of this Section, the manufacturer who produced the substance in its entirety, the user of the substance, or any seller or offeror for sale of the substance.

(3) "Independent tester" means a person, other than an employee of the State Board, who engages in the testing of sources to determine compliance with State or local laws or regulations relating to air pollution.

(4) "Executive Officer" means the Executive Officer of the State Board or his or her authorized representative.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91201. Source Testing Fee Schedule. (a) Whenever the Executive Officer ~~of the State Board or his or her authorized representative~~ finds that it is necessary to determine ~~the extent and amount of emissions from~~ compliance of any air-pollution-emission source with permit conditions or with any State or local law, order, rule, or regulation relating to air pollution, including confirmation of the reliability, accuracy and precision of any in-stack monitoring equipment, ~~said officer or representative~~ he or she may require the testing of such source by ~~the collection of emissions samples and the analysis of such samples~~ by qualified personnel of the State Board, or by an independent contractor to the State Board, or by an independent tester specified by the responsible party upon approval by the Executive Officer.

(b) For testing conducted by the State Board's personnel or an independent contractor to the Board, ~~the responsible party operator or owner of the source~~

(3) "Independent tester" means a person, other than an employee of the State Board, who engages in the testing of sources to determine compliance with State or local laws or regulations relating to air pollution.

(4) "Executive Officer" means the Executive Officer of the State Board or his or her authorized representative.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91201. Source Testing Fee Schedule. (a) Whenever the Executive Officer ~~of the State Board or his or her authorized representative~~ finds that it is necessary to determine ~~the extent and amount of emissions from~~ compliance of any air-pollution-emission source with permit conditions or with any State or local law, order, rule, or regulation relating to air pollution, including confirmation of the reliability, accuracy and precision of any in-stack monitoring equipment, ~~said officer or representative~~ he or she may require the testing of such source ~~by the collection of emissions samples and the analysis of such samples~~ by qualified personnel of the State Board, or by an independent contractor to the State Board, or by an independent tester specified by the responsible party upon approval by the Executive Officer.

(b) For testing conducted by the State Board's personnel or an independent contractor to the Board, ~~the responsible party operator or owner of the source~~

shall pay a fee in accordance with the following schedule to cover the cost of planning, preliminary evaluation, sampling, sample analysis, calculations, and report preparation with respect to samples of emissions secured from the source. The fees listed in the schedule shall be the maximum fees and shall be reduced by the Executive Officer if the actual cost to conduct a specific test is less. Fees for any compliance test not listed in the schedule shall be determined by the Executive Officer based on the cost to conduct the test.

Estimated costs to perform source tests and other special tests.<sup>1</sup>

Type-of-Test	Fee
<b>Source-Tests</b>	
Basic-test <sup>2</sup> -and Particulate-Matter-Test	\$1,155.00
Sulfur-Dioxide-Test	175.00/sample
Sulfuric-Acid-Mist-(including-sulfur trioxide)-and-Sulfur-Dioxide-Test	120.00/sample
Oxides-of-Nitrogen-Test <sup>2</sup>	150.00/sample
Hydrogen-Sulfide-Test <sup>2</sup>	80.00/sample
Fluorides-Test	70.00/sample
Carbon-Monoxide-Test <sup>3</sup>	305.00/sample
Total-Hydrocarbon-Test <sup>3</sup>	50.00/sample
Continuous-24-hour-Analyzer-Test	1,110.00/day
Continuous-Four-hour-Analyzer-Test	185.00/test
Gas-Chromatographic-Analysis-of Unknown-Pollutants <sup>3</sup>	270.00/sample
Sulfur-Content-of-Fuel-Test <sup>3</sup>	25.00/test
<b>Special-Tests</b>	
Reid-Vapor-Pressure-Test	35.00/test
Vinyl-Chloride-Monitoring-Test	25.00/sample
Visible-Emission-Evaluation-Test	330.00/evaluation
Particulate-Fallout-Testing	75.00/sample
Floating-Roof-Tank-Inspection	145.00/inspection
Vapor-Recovery-System-Inspection	55.00-1,760.00/ inspection
Valve-and-Flange-Leak-Test	1.15/test

- 1.---Estimated-fees-for-any-test-not-listed-above-shall be-determined-by-the-Executive-Officer.
- 2.---The-basic-test-fee-applies-only-to-source-test,-total source-test-fees-consist-of-the-basic-test-fee-plus the-fee-for-each-of-the-specific-tests-performed.
- 3.---If-this-test-is-not-conducted-in-conjunction-with-the activities-which-comprise-the-basic-test,-the-basic test-fee-will-not-be-charged,-however,-additional fees-to-cover-the-estimated-costs-of-planning,- preliminary-evaluation,-sampling,-sample-analysis,- calculations-and-report-preparation-for-such-tests will-be-charged.

<u>Type of Test</u>	<u>Fee</u>
<u>Continuous Analyzer Gaseous Emissions Test with Van</u>	<u>\$1,620.00 plus \$55.00/hour</u>
<u>Non-continuous Emission Testing<sup>1</sup></u>	<u>1,230.00 plus specific sample fee listed below</u>
<u>Particulate Matter Test</u>	<u>230.00/sample</u>
<u>Sulfur Dioxide Test</u>	<u>145.00/sample</u>
<u>Sulfuric Acid Mist (including sulfur trioxide) and Sulfur Dioxide Test</u>	<u>205.00/sample</u>
<u>Oxides of Nitrogen Test</u>	<u>90.00/sample</u>
<u>Hydrogen Sulfide Test</u>	<u>120.00/sample</u>
<u>Fluorides Test</u>	<u>400.00/sample</u>
<u>Carbon Monoxide Test</u>	<u>70.00/sample</u>
<u>Total Hydrocarbon Test</u>	<u>60.00/sample</u>
<u>Gas Chromatographic Analysis of Unknown Pollutants</u>	<u>110.00/sample</u>
<u>Vinyl Chloride Test</u>	<u>100.00/sample</u>
<u>Reid Vapor Pressure Test</u>	<u>45.00/test</u>
<u>Ambient Vinyl Chloride Test</u>	<u>100.00/sample</u>
<u>Visible Emission Evaluation Test</u>	<u>450.00/evaluation</u>
<u>Particulate Fallout Testing</u>	<u>75.00/sample</u>
<u>Floating Roof Tank Inspection</u>	<u>185.00/inspection</u>
<u>Vapor Recovery System Inspection</u>	<u>70.00-2,170.00/inspection</u>
<u>Valve and Flange Leak Test</u>	<u>1.75/test</u>
<u>Laboratory Fuel Analysis</u>	
<u>Carbon, Hydrogen, Nitrogen and Sulfur</u>	<u>30.00/sample</u>
<u>Ash</u>	<u>75.00/sample</u>
<u>Density</u>	<u>60.00/sample</u>
<u>Heat Content</u>	<u>180.00/sample</u>
<u>Water</u>	<u>75.00/sample</u>
<u>Asphaltenes</u>	<u>75.00/sample</u>
<u>Distillation</u>	<u>50.00/sample</u>

- 1.---Estimated-fees-for-any-test-not-listed-above-shall be-determined-by-the-Executive-Officer.
- 2.---The-basic-test-fee-applies-only-to-source-test; total source-test-fees-consist-of-the-basic-test-fee-plus the-fee-for-each-of-the-specific-tests-performed.
- 3.---If-this-test-is-not-conducted-in-conjunction-with-the activities-which-comprise-the-basic-test; the-basic test-fee-will-not-be-charged; however; additional fees-to-cover-the-estimated-costs-of-planning; preliminary-evaluation; sampling; sample-analysis; calculations-and-report-preparation-for-such-tests will-be-charged.

<u>Type of Test</u>	<u>Fee</u>
<u>Continuous Analyzer Gaseous Emissions Test with Van</u>	<u>\$1,620.00 plus \$55.00/hour</u>
<u>Non-continuous Emission Testing<sup>1</sup></u>	<u>1,230.00 plus specific sample fee listed below</u>
<u>Particulate Matter Test</u>	<u>230.00/sample</u>
<u>Sulfur Dioxide Test</u>	<u>145.00/sample</u>
<u>Sulfuric Acid Mist (including sulfur trioxide) and Sulfur Dioxide Test</u>	<u>205.00/sample</u>
<u>Oxides of Nitrogen Test</u>	<u>90.00/sample</u>
<u>Hydrogen Sulfide Test</u>	<u>120.00/sample</u>
<u>Fluorides Test</u>	<u>400.00/sample</u>
<u>Carbon Monoxide Test</u>	<u>70.00/sample</u>
<u>Total Hydrocarbon Test</u>	<u>60.00/sample</u>
<u>Gas Chromatographic Analysis of Unknown Pollutants</u>	<u>110.00/sample</u>
<u>Vinyl Chloride Test</u>	<u>100.00/sample</u>
<u>Reid Vapor Pressure Test</u>	<u>45.00/test</u>
<u>Ambient Vinyl Chloride Test</u>	<u>100.00/sample</u>
<u>Visible Emission Evaluation Test</u>	<u>450.00/evaluation</u>
<u>Particulate Fallout Testing</u>	<u>75.00/sample</u>
<u>Floating Roof Tank Inspection</u>	<u>185.00/inspection</u>
<u>Vapor Recovery System Inspection</u>	<u>70.00-2,170.00/inspection</u>
<u>Valve and Flange Leak Test</u>	<u>1.75/test</u>
<u>Laboratory Fuel Analysis</u>	
<u>Carbon, Hydrogen, Nitrogen and Sulfur</u>	<u>30.00/sample</u>
<u>Ash</u>	<u>75.00/sample</u>
<u>Density</u>	<u>60.00/sample</u>
<u>Heat Content</u>	<u>180.00/sample</u>
<u>Water</u>	<u>75.00/sample</u>
<u>Asphaltenes</u>	<u>75.00/sample</u>
<u>Distillation</u>	<u>50.00/sample</u>

<u>Type of Test</u>	<u>Fee</u>
<u>Metals</u>	\$ <u>295.00/sample</u>
<u>Bromine Number</u>	<u>50.00/sample</u>
<u>Lead</u>	<u>15.00/sample</u>

Other Laboratory Analysis

<u>Water, Volatile Organic Compounds and Density (paints)</u>	<u>50.00/sample</u>
<u>Methane</u>	<u>40.00/sample</u>
<u>Total Hydrocarbon</u>	<u>30.00/sample</u>
<u>Hydrocarbons (with one to nine carbons)</u>	<u>55.00/sample</u>
<u>Molecular Weight Determination of Vapor Hydrocarbons</u>	<u>75.00/sample</u>
<u>Molecular Weight Determination of Liquid Hydrocarbons</u>	<u>50.00/sample</u>
<u>Hydrogen Sulfide</u>	<u>30.00/sample</u>
<u>Percent Water</u>	<u>30.00/sample</u>
<u>Asbestos (air filter sample)</u>	<u>444.00/sample</u>
<u>Particle Size Distribution</u>	
<u>Optical Microscopy</u>	<u>148.00/sample</u>
<u>Particle Size Distribution</u>	
<u>Electron Microscopy</u>	<u>296.00/sample</u>

Notes:

1. Source test fees may also include additional cost of laboratory analysis as required.

~~(c)--Where testing is conducted by the owner or operator on behalf of the State Board the fee shall be limited to the actual cost of observation, evaluation and reporting of the test and test data by the Executive Officer or his or her authorized representative, and shall not exceed \$18.25.~~

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91202. Additional Testing. (a) Where test results indicate that a source is in compliance with permit conditions or with any all State or and-federal local laws, order, rule or and regulations relating to air pollution,

the responsible party operator-or-owner-of-the-source shall be assessed the applicable fees in Section 91201 only once per each 12-month period. This limitation shall not restrict the State Board from requiring conducting additional testing at its own expense. The Executive Officer may assess fees for multiple testing, or for multiple samples, where the same is necessary to determine compliance. or-quantify emissions-for-inventory-purposes.

(b) If the test results indicate that the specific source tested is not in compliance with permit conditions or with any all State and or local federal laws, order, rule, or regulation relating to air pollution, and-regulations; the Executive Officer or-his-or-her-authorized-representative may require such additional source tests as may be necessary and may also exclude use of an independent tester for such additional tests. In such event, the owner-or-operator responsible party shall pay for each additional test in accordance with the schedule of fees set forth in Section 91201 until compliance is achieved and confirmed.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91203. Fee Payment. (a) After completion of the tests, testing conducted by the State Board directly or by a contractor to the State Board, the owner-or-operator responsible party shall be notified by the Accounting Office of the State Board, in writing, of the fees to be paid for such tests and of preliminary results. or-fer

the responsible party operator-or-owner-of-the-source shall be assessed the applicable fees in Section 91201 only once per each 12-month period. This limitation shall not restrict the State Board from requiring conducting additional testing at its own expense. The Executive Officer may assess fees for multiple testing, or for multiple samples, where the same is necessary to determine compliance. or-quantify emissions-for-inventory-purposes-

(b) If the test results indicate that the specific source tested is not in compliance with permit conditions or with any all State and or local federal laws, order, rule, or regulation relating to air pollution, and-regulations, the Executive Officer or-his-or-her-authorized-representative may require such additional source tests as may be necessary and may also exclude use of an independent tester for such additional tests. In such event, the owner-or-operator responsible party shall pay for each additional test in accordance with the schedule of fees set forth in Section 91201 until compliance is achieved and confirmed.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91203. Fee Payment. (a) After completion of the tests, testing conducted by the State Board directly or by a contractor to the State Board, the owner-or-operator responsible party shall be notified by the Accounting Office of the State Board, in writing, of the fees to be paid for such tests and of preliminary results. or-for

~~the-observation-and-evaluation-of-such-tests.~~ The failure to pay any such fee within 30 days of the receipt of the notice shall constitute grounds for the revocation or suspension of the permit to operate the equipment tested. The Executive Officer ~~or-his-or-her-authorized-representative~~ may request the district air pollution control officer to revoke or suspend any permit until the required fees are paid, in accordance with Health and Safety Code Sections 42304-42309.

(b) ~~Upon-payment-of-the-required-fees,~~ The responsible party owner-or-operator-of-the-source shall be entitled to receive a copy of the source test results, if the testing was conducted by the State Board or an independent contractor to the State Board, as soon as such test results have been verified and finalized.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91204. Financial Hardship Exemption. (a) The responsible party owner-or-operator-of-a-source may petition the Executive Officer ~~of-the-Board~~, no later than 30 days after receipt of the fee notice described in Section 91203, to be excused from payment of fees, or a portion of such fees, on the grounds that payment of such fees would cause a demonstrable financial hardship.

(b) For the purposes of this Section, a demonstrable financial hardship shall consist of such evidence as is capable of demonstrating that full payment will prevent the responsible party owner-or-operator-of-the-source

from meeting other financial obligations as they come due, or will cause the taking of property or the practical closing and eliminating of a lawful business.

(c) Based on the evidence provided, the Executive Officer may exempt the responsible party owner-or-operator of-a-source from payment of all or a portion of the fees otherwise required under Section 91203.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

~~91205:--Technology-Testing-Exemption--The-Executive Officer-may-exempt-the-owner-or-operator-of-a-source from-payment-of-all-or-a-portion-of-the-fees-otherwise due-pursuant-to-this-Subchapter-where-the-Executive Officer-determines-that-testing-should-be-conducted exclusively-for-the-purpose-of-determining-the-effectiveness or-reliability-of-a-specific-control-method, technology or-device.~~

~~NOTE:--Authority-cited:--§§-39601-and-41512, Health and-Safety-Code.--Reference:--§§-41510-and 41512, Health-and-Safety-Code.~~

~~91206~~ 91205. Small Business. (a) A small business shall not be required to pay any fees otherwise applicable under Section 91201. A "small business," for the purposes of this Section, shall be as defined in Subsection (1), Section 1896, Title 2 of the California Administrative Code.

(b) Any owner-or-operator responsible party who desires to establish eligibility for non-payment of fees pursuant to Subsection (a) shall do so by filing a

from meeting other financial obligations as they come due, or will cause the taking of property or the practical closing and eliminating of a lawful business.

(c) Based on the evidence provided, the Executive Officer may exempt the responsible party owner-or-operator of-a-source from payment of all or a portion of the fees otherwise required under Section 91203.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

~~91205:--Technology-Testing-Exemption:--The-Executive Officer-may-exempt-the-owner-or-operator-of-a-source from-payment-of-all-or-a-portion-of-the-fees-otherwise due-pursuant-to-this-Subchapter-where-the-Executive Officer-determines-that-testing-should-be-conducted exclusively-for-the-purpose-of-determining-the-effectiveness or-reliability-of-a-specific-control-method, technology or-device.~~

~~NOTE:--Authority-cited:--§§-39601-and-41512,-Health and-Safety-Code;--Reference:--§§-41510-and 41512,-Health-and-Safety-Code.~~

~~91206~~ 91205. Small Business. (a) A small business shall not be required to pay any fees otherwise applicable under Section 91201. A "small business," for the purposes of this Section, shall be as defined in Subsection (1), Section 1896, Title 2 of the California Administrative Code.

(b) Any owner-or-operator responsible party who desires to establish eligibility for non-payment of fees pursuant to Subsection (a) shall do so by filing a

written statement, under penalty of perjury, that the business is a small business, as defined.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91206. Request for Independent Tester. (a) By August 1, 1981, or by June 1 of any year thereafter, any responsible party who seeks to have compliance testing performed by an independent tester for the following fiscal year shall inform the Executive Officer in writing of this desire. If no such request is made, then compliance testing for the fiscal year may be conducted by the Executive Officer or by an independent contractor to the State Board.

(b) All requests for an independent tester shall include the name(s) of the independent testers, the type of source or sources to be tested, the type of test or tests to be performed, and a statement by the responsible party that it will comply with the requirements of Sections 91208-91212 of this Subchapter and that the designated independent tester has agreed to perform any necessary source testing.

(c) Independent testers shall in all cases be subject to approval by the Executive Officer.

(d) At any time a responsible party which has previously designated an approved independent tester pursuant to Subsection (a) of this Section may apply for the substitution, addition or removal of a designation of an independent tester. No such change shall be effective for at least 60 days following the application.

(e) The Executive Officer may compliance test any source and charge a fee to the responsible party for the cost of such test, notwithstanding a request for an independent tester, if any of the following conditions prevail:

(1) The responsible party has not designated an independent tester to the Executive Officer by August 1, 1981 or by June 1 for any year thereafter.

(2) The Executive Officer has found the designated independent tester(s) non-approvable.

(3) The designated independent tester has not timely submitted information requested by the Executive Officer pursuant to Section 91207(a).

(4) A violation has been found by the most recent source test conducted within a year prior to the proposed current source test; provided, however, that such restriction shall only apply for the specific source found in violation.

(5) The Executive Officer has determined that other good cause exists to deny the request.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91207. Approval of Independent Testers. (a)

Independent testers may be approved for performing any of the tests listed in Section 91201 of this Subchapter or such other tests as deemed appropriate by the Executive Officer to determine compliance of a source with applicable laws and rules. Such approval can be accomplished by a

(e) The Executive Officer may compliance test any source and charge a fee to the responsible party for the cost of such test, notwithstanding a request for an independent tester, if any of the following conditions prevail:

(1) The responsible party has not designated an independent tester to the Executive Officer by August 1, 1981 or by June 1 for any year thereafter.

(2) The Executive Officer has found the designated independent tester(s) non-approvable.

(3) The designated independent tester has not timely submitted information requested by the Executive Officer pursuant to Section 91207(a).

(4) A violation has been found by the most recent source test conducted within a year prior to the proposed current source test; provided, however, that such restriction shall only apply for the specific source found in violation.

(5) The Executive Officer has determined that other good cause exists to deny the request.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91207. Approval of Independent Testers. (a)

Independent testers may be approved for performing any of the tests listed in Section 91201 of this Subchapter or such other tests as deemed appropriate by the Executive Officer to determine compliance of a source with applicable laws and rules. Such approval can be accomplished by a

potential tester's writing the Executive Officer and specifying the test(s) for which approval is sought. The potential tester shall then provide any necessary data requested by the Executive Officer which can substantiate the potential tester's qualifications for performing the noted test(s).

(b) Approval of an independent tester may be withdrawn at any time if the approved tester fails to comply with the requirements specified in Sections 91215-91218 of this Subchapter or fails to provide the type and quality of data required by the Executive Officer.

(c) Upon disapproval or withdrawal of approval of an independent tester, the Executive Officer shall send by certified mail a written statement of the reasons for such action to the independent tester, and to any responsible party requesting or using such tester.

(d) An independent tester may request reconsideration of the decision of the Executive Officer to disapprove or withdraw approval of such tester. The request must be received by the Executive Officer within 30 days after mailing the written statement described in Subsection (c), and shall contain all evidence the independent tester asserts justifies reconsideration. The Executive Officer may rescind the disapproval or withdrawal if he or she determines that the independent tester satisfies the applicable requirements of this Subchapter. A written statement of the reasons for the Executive Officer's decision shall

be transmitted in accordance with Subsection (c) of this Section.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91208. Conflict of Interest. (a) An independent tester shall not be allowed to conduct a compliance source test pursuant to this Subchapter if:

(1) It is owned in whole or part by the responsible party of the source; or

(2) In the 12 months preceeding the test, the independent tester has received gross income from the responsible party, other than as a result of source test contracts entered into pursuant to this Subchapter, in excess of \$100,000, or in excess of ten percent of the independent tester's gross annualized revenues; provided that for the purposes of this Subsection, "independent tester" and "responsible party" shall include any entity under common ownership with such tester or party; or

(3) The independent tester manufactured or installed any emission control device or monitor utilized in connection with the specific source to be tested.

(b) An independent tester shall not utilize in a compliance test pursuant to this Subchapter any employee or agent who holds a direct or indirect investment in the responsible party of the source of \$1,000 or more, or who has directly received in the previous 12 months income in excess of \$250 from the responsible party of the source,

be transmitted in accordance with Subsection (c) of this Section.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91208. Conflict of Interest. (a) An independent tester shall not be allowed to conduct a compliance source test pursuant to this Subchapter if:

(1) It is owned in whole or part by the responsible party of the source; or

(2) In the 12 months preceeding the test, the independent tester has received gross income from the responsible party, other than as a result of source test contracts entered into pursuant to this Subchapter, in excess of \$100,000, or in excess of ten percent of the independent tester's gross annualized revenues; provided that for the purposes of this Subsection, "independent tester" and "responsible party" shall include any entity under common ownership with such tester or party; or

(3) The independent tester manufactured or installed any emission control device or monitor utilized in connection with the specific source to be tested.

(b) An independent tester shall not utilize in a compliance test pursuant to this Subchapter any employee or agent who holds a direct or indirect investment in the responsible party of the source of \$1,000 or more, or who has directly received in the previous 12 months income in excess of \$250 from the responsible party of the source,

or who is a director, officer, partner, employee, trustee, or holds any position of management in the responsible party of the source.

(c) If the Executive Officer determines that a compliance source test administered pursuant to this Subchapter was not conducted in accordance with the provisions of this Section, he or she may invalidate the results of the test and the tester may be subject to disqualification from further testing on the Board's behalf.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91209. Pretest Inspection Right of Entry. The responsible party which has requested testing by an independent tester must allow entry to both authorized representatives of the independent tester and authorized representatives of the Executive Officer for the purpose of conducting a pretest inspection.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91210. Right of Entry During Independent Testing. When a responsible party requests to be tested by an independent tester, the responsible party shall grant entry to the actual test site, without prior notice, to both the tester's authorized personnel and the Executive Officer's authorized personnel.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91211. Oversight. All testing requested by the Executive Officer and conducted by an independent tester may be observed by an authorized representative of the Executive Officer.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91212. Audit Testing of Independent Testers. Without prior notice the responsible party must allow personnel and equipment authorized by the Executive Officer entry for the purpose of testing the capability of the independent tester during the performance of a test.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91213. Availability of Independent Tester. The responsible party must notify the designated independent tester that he or she may be called upon to perform testing with at least 24-hours advance notice from the Executive Officer. If the tester cannot respond within the required time, then the Executive Officer may conduct the required testing. In such cases the responsible party will be charged for the testing in accordance with Section 91201, Title 17, California Administrative Code.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91214. Fee and Payment for Testing by Independent Testers. Fees and payment for testing conducted by independent testers shall be arranged by agreement between the

91211. Oversight. All testing requested by the Executive Officer and conducted by an independent tester may be observed by an authorized representative of the Executive Officer.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91212. Audit Testing of Independent Testers. Without prior notice the responsible party must allow personnel and equipment authorized by the Executive Officer entry for the purpose of testing the capability of the independent tester during the performance of a test.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91213. Availability of Independent Tester. The responsible party must notify the designated independent tester that he or she may be called upon to perform testing with at least 24-hours advance notice from the Executive Officer. If the tester cannot respond within the required time, then the Executive Officer may conduct the required testing. In such cases the responsible party will be charged for the testing in accordance with Section 91201, Title 17, California Administrative Code.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91214. Fee and Payment for Testing by Independent Testers. Fees and payment for testing conducted by independent testers shall be arranged by agreement between the

independent tester and the responsible party. In no case will the State Board be responsible for collection of fees for any independent tester.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91215. Confidentiality of Test Information. Without prior approval of the Executive Officer, the independent tester shall not disclose to the responsible party or the responsible party's personnel in advance of the test the dates, locations, or times of testing. The independent tester shall not disclose to the responsible party the results of the test prior to disclosure to the Air Resources Board. Failure to keep such information confidential for such a period may result in indefinite disqualification of the tester.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91216. Records and Reports. All original records made during testing requested by the State Board shall become the property of the State Board. All or part of such records may be requested by the Executive Officer at any time during or after the test period. All original records and the report of results from the tester should be provided to the Executive Officer no later than 30 days after the testing is complete. Failure to provide the required records or reports may result in disqualification of the tester for further testing required by the State Board.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91217. Conformity During Testing. An independent tester shall conform to reasonable requests made by the Executive Officer during the test period. Failure to conform as such may result in disqualification from testing as required by the State Board.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91218. Testimony. When requested by the Executive Officer, the independent tester shall provide testimony in court or other prosecutorial assistance related to violations discovered as a result of the independent tester's compliance source test. Charges of the independent tester to the State Board for such services shall not exceed the actual travel costs, the per diem rate for state employees applicable at the time of the services, and remuneration for personal services on an hourly basis not to exceed the hourly cost to the State of an employee of the State Board whose job functions are most closely equivalent to the functions of the representative of the independent tester rendering the personal services.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91219. Validity of Independent Tester's Compliance Test Data. Test data produced during compliance testing of a source by an independent tester will be reviewed by the

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91217. Conformity During Testing. An independent tester shall conform to reasonable requests made by the Executive Officer during the test period. Failure to conform as such may result in disqualification from testing as required by the State Board.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91218. Testimony. When requested by the Executive Officer, the independent tester shall provide testimony in court or other prosecutorial assistance related to violations discovered as a result of the independent tester's compliance source test. Charges of the independent tester to the State Board for such services shall not exceed the actual travel costs, the per diem rate for state employees applicable at the time of the services, and remuneration for personal services on an hourly basis not to exceed the hourly cost to the State of an employee of the State Board whose job functions are most closely equivalent to the functions of the representative of the independent tester rendering the personal services.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91219. Validity of Independent Tester's Compliance Test Data. Test data produced during compliance testing of a source by an independent tester will be reviewed by the

Executive Officer to determine its validity. If such data is determined after consultation with the independent tester and the responsible party to be invalid, the Executive Officer may require a repeat compliance test of the source.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

91220. Unannounced Testing. When there is reasonable cause to believe that a violation has occurred, is occurring, or will occur, the Executive Officer may test directly without prior notice and without allowing such testing to be conducted by an independent tester.

NOTE: Authority cited: §§ 39600, 39601 and 41512, Health and Safety Code. Reference: §§ 41510, 41511 and 41512, Health and Safety Code.

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Further Consider Proposed Revisions to  
Source Testing Fees and Requirements Specified in Article 2,  
Subchapter 5, Chapter 1, Part III, Title 17, of the  
California Administrative Code

Agenda Item No. 81-10-1

Public Hearing Date: May 21, 1981

Response Date: May 21, 1981

Issuing Authority: Air Resources Board

Comment: No comments were received at the hearing identifying  
any significant environmental issues.

Response: N/A

Certified:

Sally Pump  
Board Secretary

Date:

6/10/81

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JUN 11 1981

Resources Agency of California

# Memorandum

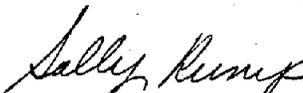
To : Huey D. Johnson  
Secretary  
Resources Agency

Date : June 11, 1981

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

From : 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 decision and response to environmental comments raised during the comment period.

  
Sally Rump  
BOARD SECRETARY

attachments  
Resolution 81-2

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Office of the Secretary

JUN 11 1981

Resources Agency of California

State of California

AIR RESOURCES BOARD

Resolution 81-3

January 6, 1981

WHEREAS, an unsolicited research Proposal Number 979-80 entitled Rebuild California Air Resources Board Field Fumigation Facility and Maintain for Experimental Use has been submitted by the University of California at Riverside to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

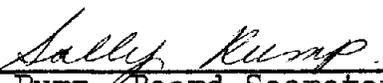
Proposal Number 979-80 entitled Rebuild California Air Resources Board Field Fumigation Facility and Maintain for Experimental Use submitted by the University of California at Riverside for an amount not to exceed \$72,344;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 979-80 entitled Rebuild California Air Resources Board Field Fumigation Facility and Maintain for Experimental Use submitted by the University of California at Riverside for an amount not to exceed \$72,344,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$72,344.

I certify that the above is a true and correct copy of Resolution 81-3 as passed by the Air Resources Board.

  
\_\_\_\_\_  
Sally Rump, Board Secretary

State of California  
AIR RESOURCES BOARD

ITEM NO.: Mail Ballot  
DATE: January 6, 1981

ITEM: Research Proposal No. 979-80 entitled "Rebuild California Air Resources Board Field Fumigation Facility and Maintain For Experimental Use."

RECOMMENDATION: Adopt Resolution 81-3 approving Research Proposal No. 979-80 for funding in an amount not to exceed \$72,344.

SUMMARY: The California Air Resources Board funded the construction of twenty experimental chambers at the Statewide Air Pollution Research Center in 1977 to facilitate research on how air pollution affects plants and the extent of economic loss caused by air pollutants. The facilities have been used extensively by Air Resources Board contractors, but were damaged by wind storms. In addition to the storm damage, the chambers require day-to-day supervision for the most effective and efficient use of the facilities.

This proposal is submitted to rebuild, improve, maintain and operate the facility during the 1981 calendar year. The specific goals are:

1. Clean the area around the chambers, regrade the soil surface and improve drainage of the site.
2. Rebuild the chambers so they can better resist storm damage and reglaze the chambers.
3. Clean and repair the existing air blower system and add another equal capacity air blower system to overcome temperature build-up within the chambers.
4. Repair and recalibrate all the pollutant monitoring, temperature and light recording equipment.
5. Provide day-to-day supervision and/or operate facilities during experiments and provide normal maintenance during the calendar year 1981.

State of California  
AIR RESOURCES BOARD

Resolution 81-4

January 30, 1981

MAIL BALLOT

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, a solicited research Proposal Number 960-80 entitled, "Development and Improvement of Organic Compound Emission Inventories for California," has been submitted by the Science Applications, Inc. to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding;

Proposal Number 960-80 entitled, "Development and Improvement of Organic Compound Emission Inventories for California," submitted by the Science Applications, Inc., for an amount not to exceed \$249,993;

NOW, THEREFORE, BE IT RESOLVED, that the Air resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 960-80 entitled, "Development and Improvement of Organic Compound Emission Inventories for California," submitted by the Science Applications, Inc., for an amount not to exceed \$249,993,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$249,993.

I certify that the above is a true and correct copy of Resolution 81-4 as passed by the Air Resources Board.

*Sally Rump*  
\_\_\_\_\_  
Sally Rump  
Board Secretary

State of California  
AIR RESOURCES BOARD

DATE: January 30, 1981

Mail Ballot

- ITEM: Research Proposal No. 960-80 entitled "Development and Improvement of Organic Compound Emission Inventories in California."
- RECOMMENDATION: Adopt Resolution 81-4 approving Research Proposal No. 960-80 for funding in an amount not to exceed \$249,993.
- SUMMARY: Air pollution control officials in oxidant non-attainment areas in the State are concerned with reducing hydrocarbon emissions to attain air quality standards. To ensure the successful implementation of future control measures, however, and to improve confidence in current emission control efforts it is necessary to develop and improve statewide organic compound emission inventories.
- The degree of reliability of current estimates of organic compound emissions in the air pollution control districts and the Air Resources Board's emission inventories is uncertain. There are many source categories for which more work is needed to ensure that data are complete and accurate.
- This project will upgrade the 1979 organic compound emission inventories by the development and implementation of methodologies for obtaining the required pertinent information to permit the validating of those inventories.
- In addition to the methodologies development, the objectives of this project are to perform mass balance computations for the manufacture, use, recycle, and disposal of organic solvents. From these, the proponent will be required to assign a statistical measure of reliability to the upgraded emission inventory and to compare existing inventories for the South Coast and Bay Area Air Quality Management Districts with the upgraded inventory.
- The project is divided into two tasks with the greater effort expanded upon the methodologies development and the mass balance computations.

The lesser effort involves upgrading the South Coast and Bay Area AQMDs' inventories.

The Research Screening Committee has critiqued and approved the RFP which was then released to approximately 100 contractors. Five responses were received and reviewed by staff members in the Research and Stationary Source Control Divisions. In addition to staff's review and recommendation to the Screening Committee, the Committee informally interviewed representatives of two recommended contractors. On the basis of their presentation and as reinforced by the interview, Science Applications, Inc. was selected for recommendation to the Board.

State of California  
AIR RESOURCES BOARD

Resolution 81-5

March 25, 1981

Agenda Item No: 81-4-2

WHEREAS, the Air Resources Board (Board) and/or the Federal Environmental Protection Agency have adopted ambient air quality standards for nitrogen dioxide, oxidant (ozone), and particulate matter, and the Board has adopted an ambient air quality standard for visibility reducing particulate matter, and these standards are consistently violated in several of the state's air basins, notably the South Coast Air Basin;

WHEREAS, Health and Safety Code Sections 39003, 39500, 39602, and 41500 authorize the Board to coordinate, encourage, and review efforts to attain and maintain state and national ambient air quality standards;

WHEREAS, Health and Safety Code Sections 39600 and 39605 authorize the Board to do such acts as may be necessary to execute the powers and duties granted to and imposed upon the Board, to assist the air pollution control districts, and to hold public hearings;

WHEREAS, the California Environmental Quality Act and Board regulations require that an activity not be adopted as proposed if mitigation measures or alternatives exist which would substantially reduce any significant adverse environmental effects of the proposed activity, and further require that the Board respond in writing to significant environmental issues raised;

WHEREAS, on January 21 and 22, 1981, the Board held a duly noticed public meeting to hear comments concerning the approval of a proposed suggested control measure for the control of nitrogen oxides from utility gas turbines, and based on these comments the Board continued the item until the March 25, 1981 meeting and remanded the measure with suggested revisions back to the Technical Review Group for the Suggested Control Measure Development Process for reconsideration;

WHEREAS, the Board finds:

1. That emissions of oxides of nitrogen (NO<sub>x</sub>) from electric utility gas turbines contribute to violations of the state and/or national ambient standards from nitrogen dioxide (NO<sub>2</sub>), and TSP, and the state ambient air quality standard for visibility in several of the state's air basins;
2. That technology for reducing NO<sub>x</sub> emissions from electric utility gas turbines to approximately 25 percent of their uncontrolled emission rates is technically feasible and commercially available, and cost effective even when potential fuel penalties are considered;

3. That the potential fuel penalty which may result from this level of control is acceptable in view of the air quality benefits which would result from the control;
4. That the technology to control emissions of oxides of nitrogen from utility gas turbines to 10 percent of their uncontrolled levels has not yet been used on full scale turbines;
5. That the staff report, the information presented at the January 22 and March 25, 1981 Board meetings, and the prepared written response to environmental concerns adequately address the environmental issues associated with this suggested control measure and the Board concurs in the staff's finding that no significant adverse environmental effects are likely to result from adoption and implementation of the suggested control measure.

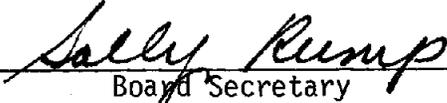
WHEREAS, the Technical Review Group for the Suggested Control Measure Development Process has approved the proposed measure as set forth in Attachment A to this Resolution.

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board approves the suggested control measure for the control of NOx emissions from electric utility gas turbines as set forth as Attachment A to this resolution;

BE IT FURTHER RESOLVED, that the Executive Officer is directed to forward the suggested control measure to the South Coast Air Quality Management District and the Ventura County Air Pollution Control District with a recommendation that these districts adopt a rule of equivalent effectiveness, and to forward the measure to other districts with a recommendation that they consider adoption of the measure or a similar measure to the extent that such districts need to further reduce emissions of oxides of nitrogen in order to attain ambient air quality standards.

BE IT FURTHER RESOLVED, that the Executive Officer is directed to provide assistance to any district requesting assistance in adopting, interpreting, or implementing the suggested control measure.

I certify that the above is a true and correct copy of Resolution 81-5 as passed by the Air Resources Board

  
Board Secretary

Attachment A

Suggested Control Measure to Limit NOx Emissions  
from Electric Utility Gas Turbines

For gas turbines that are used for the production of electric power and are owned or operated by a private or public electric utility as defined by the California Public Utilities Code, emissions of oxides of nitrogen shall not exceed the following limits:

GAS TURBINES INSTALLED BEFORE JANUARY 1, 1989

FUEL	NOx EMISSION LIMITS	COMPLIANCE DATE	
Methanol or Natural Gas	0.18 µg/J output	January 1, 1983 or Date of	Installation*
Distillate or Other	0.28 µg/J output	January 1, 1983 or Date of	Installation*

GAS TURBINES INSTALLED ON OR AFTER JANUARY 1, 1989

FUEL	NOx EMISSION LIMITS	COMPLIANCE DATE	
Methanol or Natural Gas	0.10 µg/J output	January 1, 1989 or Date of	Installation*
Distillate or Other	0.16 µg/J output	January 1, 1989 or Date of	Installation*

\* Units operated less than 200 hours per calendar year are exempt from this limitation. Determination of hours of operation per calendar year shall be based on the average of three (3) of the five (5) preceding calendar years. Upon the determination of the technological review after September 1, 1985, the 200 hour exemption may be reassessed to reflect the cost of technology designed to meet the emission limits of 0.10 and 0.16 microgram of NOx per joule of output.

All emission determinations shall be made using modified EPA Method 20 (see Appendix A).

For simple, combined, and regenerative cycle installations, the output shall be defined as the total megawatts generated. For cogeneration installations, the output shall be defined as the megawatts generated plus the energy reclaimed by the heat recovery system.

The following equation shall be used to convert uncorrected volume parts per million of NOx to micrograms of NOx per joule of output:

$$\frac{(\text{ppm NOx}) (.0016) (\text{kg. exhaust/second})}{(\text{MW output})} = \frac{\mu\text{g/NOx}}{\text{joule output}}$$

After September 1, 1985, the Air Pollution Control Officer (APCO) shall, within 60 days upon receipt of a petition, conduct a public hearing to determine the feasibility of meeting the emission limits of 0.10 and 0.16 microgram of NOx per joule of output based on evidence from applicable demonstration units. If the APCO determines that compliance with this emission limit is not technologically feasible or is not cost-effective within the timetable set by this control measure, (s)he shall postpone the compliance date, or shall modify the emission limit to the extent supported by the evidence. Upon request by the APCO or District Board, the State Air Resources Board shall conduct the public hearing.

Each utility owning or operating more than 200 megawatts total of rated capacity of turbines, subject to this rule, shall conduct or participate in a demonstration project of technology designed to achieve emission levels of 0.10  $\mu\text{g}/\text{J}$  output when operated on methanol or natural gas or, 0.16  $\mu\text{g}/\text{J}$  output when operated on distillate or other fuels, subject to the approval of the APCO, and shall report the result of the demonstration project at the public hearing noted above. Each utility subject to this requirement shall submit to the APCO a plan delineating scheduled increments of progress.

Appendix A  
Modified EPA Method 20

For the purpose of this suggested control measure, the following modifications shall be applied to EPA Reference Method 20 as published in the Federal Register on September 10, 1979.

1. General Note - All references to SO<sub>2</sub> or sulfur measurement shall be deleted.
2. Section 4.1.4 - The NO<sub>x</sub> to NO converter as shown in Figure 20.1 is normally integrated into the NO<sub>x</sub> analyzer. In addition the deletion of the converter shall not be an option as it presently is in Method 20.
3. Section 4.3 - Calibration gases shall be at 0, 50 percent, and 90 percent of full scale. The full scale value shall be selected so that the measured value is approximately 50 percent of scale.
4. Section 6.1.2 - Delete all references to a preliminary O<sub>2</sub> traverse, however, O<sub>2</sub> shall be measured continuously during the test.
5. Section 6.1.2.1 - The minimum number of points shall be specified by the Air Pollution Control Officer (APCO).
6. Section 6.2 - Testing shall be at the load conditions specified by the APCO but shall not be less than 50 percent of base load. The test period shall be a minimum of fifteen minutes per load condition to determine compliance initially. However, if the source is not in compliance after the initial fifteen minutes, the test shall be continued for at least one hour and forty-five minutes. The stack shall be traversed initially to determine the

degree of stratification in the stack. Sampling time at each traverse point shall be a minimum of two minutes plus system response time. The remainder of the test period shall be with the probe inlet at the average point.

7. An ultimate analysis or equivalent shall be performed on the fuel fired using ASTM method D3178-74 or D3176 (liquid fuels) or D1946-67 (72) (gaseous fuels) as applicable, to determine the theoretical maximum concentration of  $\text{CO}_2$  in the flue gases. The measured  $\text{O}_2$  concentration in the flue gases shall not deviate by more than an amount specified by the APCO, from the predicted  $\text{O}_2$  concentration based on the concurrent  $\text{CO}_2$  measurement and the ultimate analysis.

## Appendix B

### Alternative Emission Limit to the Suggested Control Measure to Limit NOx Emissions from Electric Utility Gas Turbines

For gas turbines that are used for the production of electric power and are owned or operated by a private or public electric utility as defined by the California Public Utilities Code, emissions of oxides of nitrogen shall not exceed an emission limit as determined by the following equation:

$$\text{EMISSION LIMIT} = \text{STANDARD} \times \frac{\text{UNIT EFFICIENCY}}{\text{STANDARD EFFICIENCY}}$$

#### STANDARD

##### GAS TURBINES INSTALLED BEFORE JANUARY 1, 1989

FUEL	PPM <sub>v</sub> NOx	COMPLIANCE DATE
Methanol or Natural Gas	25	January 1, 1983 or Date of Installation*
All Other	40	January 1, 1983 or Date of Installation*

##### GAS TURBINES INSTALLED ON OR AFTER JANUARY 1, 1989

Methanol or Natural Gas	12	January 1, 1989 or Date of Installation*
All Other	20	January 1, 1989 or Date of Installation*

STANDARD EFFICIENCY = 25 percent

UNIT EFFICIENCY = The total megawatt output for simple and combined cycle installations or the sum of the energies of megawatt output and recovered heat for cogeneration installations divided by the heat input (as determined by a fuel measuring device accurate to  $\pm 5$  percent and based on the higher heating value of the fuel). Any turbine which has a tested efficiency greater than 25 percent will be allowed the demonstrated efficiency as the unit efficiency. Any turbine with an efficiency lower than 25 percent is allowed a 25 percent unit efficiency for the purpose of this limitation.

The volume concentration of the oxides of nitrogen (NOx), shall be calculated as nitrogen dioxide corrected to 15 percent oxygen, on a

dry basis, for all units except regenerative cycle units which shall be corrected to 16 percent oxygen on a dry basis.

- \* Units operated less than 200 hours per calendar year are exempt from this limitation. Determination of hours of operation per calendar year shall be based on the average of three (3) of the five (5) preceding calendar years. Upon the determination of the technological review after September 1, 1985, the 200 hour exemption may be reassessed to reflect the cost of technology designed to meet the emission limits of 12 ppm<sub>v</sub> and 20 ppm<sub>v</sub>.

All emission determination shall be made using modified EPA Method 20 (See Appendix A).

After September 1, 1985, the Air Pollution Control Officer (APCO) shall within 60 days upon receipt of a petition conduct a public hearing to determine the feasibility of meeting the emission limits of 12 ppm<sub>v</sub> and 20 ppm<sub>v</sub> based on evidence from applicable demonstration units. If the APCO determines that compliance with this emission limit is not technologically feasible or is not cost-effective within the timetable set by this control measure, (s)he shall postpone the compliance date, or shall modify the emission limit to the extent supported by the evidence. Upon request by the APCO or District Board, the State Air Resources Board shall conduct the public hearing.

Each utility owning or operating more than 200 megawatts total of rated capacity of turbines, subject to this rule, shall conduct or participate in a demonstration project of technology designed to achieve emission levels of 12 ppm<sub>v</sub> when operated on methanol or natural gas, or 20 ppm<sub>v</sub> when operated on operated on distillate or other fuels, subject to the approval of the APCO, and shall report the result of the demonstration project at the public hearing noted above. Each utility subject to this requirement shall submit, to the APCO, a plan delineating scheduled increments of progress.

State of California  
AIR RESOURCES BOARD

Responses to Significant Environmental Issues

ITEM: Public Meeting to Consider a Suggested Control Measure for the Control of Oxides of Nitrogen Emissions from Electric Utility Gas Turbines

PUBLIC HEARING DATE: January 21, 22, 1981 (continued March 25, 1981)

RESPONSE DATE: March 25, 1981

ISSUING AUTHORITY: Air Resources Board

COMMENT: The application of water injection to previously uncontrolled utility gas turbines will:

1. Increase particulate matter emissions (Chevron USA)
2. Generate hazardous waste products from the demineralization of water needed for water injection (Southern California Edison)
3. Increase hydrocarbon and carbon monoxide emissions from distillate fuels (Southern California Edison, GM)
4. Increase aldehyde emissions when burning methanol (ARB)
5. Increase sulfur dioxide emissions (Southern California Edison)
6. Reduce NOx emissions but increase ozone concentration due to the scavenging effect of NOx. (Southern California Edison)
7. Increase water consumption. (Southern California Edison)

RESPONSE:

1. No source test data which has been provided to the staff has indicated there will be increases in particulate matter emissions at the rates necessary to comply with this measure. This data shows that particulate matter emissions can be reduced by up to 50% as a result of water injection.
2. No hazardous solid or liquid waste products are generated from water demineralization that is necessary to comply with this measure. The staff estimates that this measure will require an additional 35 acre-feet of water to be demineralized each year and this will result in approximately 7 acre-feet of wastewater being generated. This wastewater containing mineral salts, is disposed of as municipal sewage. It should be noted that this wastewater meets all state and local wastewater discharge standards.
3. The data on which Southern California Edison based its conclusion that water injection will increase hydrocarbon and carbon monoxide emissions are inconclusive. Other data have shown that there are increases as well as decreases in these emissions as a result of water injection. Whether there be an increase or decrease depends upon operating and

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- design parameters. In any case, if there are increases in these emissions, these emissions should be mitigated by designing and operating the water injection system to optimize combustion efficiency, thereby minimizing the impact of hydrocarbon and carbon monoxide emissions.
4. Limited data indicate that aldehyde emissions do increase as a result of using water injection while burning methanol. However, these emissions are significantly lower than aldehyde emissions from natural gas without water injection. If turbines currently on natural gas are converted to methanol and water injected, aldehyde emissions would decrease.
  5. Emissions of sulfur dioxides should not significantly increase due to the use of water injection. Since sulfur dioxide emissions are based on the consumption rate of distillate fuel, and since water injection is expected to increase fuel consumption by no more than 2.5 percent, increases of sulfur dioxides emissions will be minimal. It should be noted that natural gas can be the major fuel fired in gas turbines. Since natural gas contains very little sulfur, increases in sulfur dioxides from the increase use of natural gas will be insignificant.
  6. Southern California Edison's conclusion that because NOx emissions scavenge (decrease) ozone, reductions in NOx emissions without corresponding reductions in hydrocarbon emissions will result in increased ambient ozone levels is false. The ARB field studies, in which the plumes of large power plants were traced over distances of 100 kilometers or more, have shown that while NOx in the plume scavenges ozone aloft in the immediate vicinity of the source, NOx ultimately increases ozone as the plume moves farther downwind and mixes with the surrounding air (ARB Staff Report released September 19, 1980 which considers rules of the SCAMQD 1135.1 and Ventura 59.1, page 154ff). Thus, reductions in NOx emissions will ultimately reduce ozone levels.
  7. Water injection will result in increased water consumption. The staff estimates that increases in water consumption due to this measure will amount to approximately 35 acre-feet of water per year. This is not a significant impact in comparison with the annual water consumption for this area which is about 2 million acre-feet and current supplies and entitlements are adequate to meet this increase in use.

CERTIFIED:

Sally Rump  
Board Secretary

DATE:

4/3/81

# Memorandum

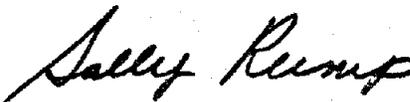
To : Huey D. Johnson  
Secretary  
Resources Agency

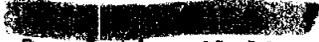
Date : April 6, 1981

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

From : 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 decision and response to environmental comments raised during the comment period.

  
Sally Rump  
Board Secretary

attachments  
Resolution 81-1  
  
Resolution 81-10

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Office of the Secretary

APR 06 1981

Resources Agency of California

State of California  
AIR RESOURCES BOARD

Resolution 81-6

January 30, 1981

Mail Ballot

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, a solicited research Proposal Number 968-80 entitled, "Inventory of Asbestos Emissions in California," has been submitted by the Science Applications, Inc. to the Air Resources Board;

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

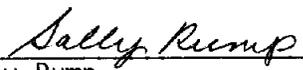
Proposal Number 968-80 entitled, "Inventory of Asbestos Emissions in California," submitted by the Science Applications, Inc. for an amount not to exceed \$99,905;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 968-80 entitled, "Inventory of Asbestos Emissions in California," submitted by the Science Applications, Inc. for an amount not to exceed \$99,905,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$99,905.

I certify that the above is a true and correct copy of Resolution 81-6 as passed by the Air Resources Board.

  
Sally Rump  
Board Secretary

State of California  
AIR RESOURCES BOARD

DATE: January 30, 1981  
Mail Ballot

- ITEM: Research Proposal No. 968-80 entitled  
"Inventory of Asbestos Emissions in California."
- RECOMMENDATION: Adopt Resolution 81-6 approving Research Proposal  
No. 968-80 for funding in an amount not to exceed  
\$99,905.
- SUMMARY: Asbestos fibers in the respirable size range (smaller  
than about 5 micrometers) have been shown to produce  
pleural and peritoneal mesotheliomas among occupational  
groups exposed to various forms of the fibrous asbestos.  
A special particle sampler has been devised by Dr.  
Walter John of the Air and Industrial Hygiene Labora-  
tories to collect ambient particulate material in the  
recommended aerodynamic diameter range. The Environmental  
Protection Agency has promulgated a method for the electron  
microscopic examination of these small diameter asbestos  
fibers.
- In this study, the contractor, using the special samplers  
at appropriate locations throughout California and  
analyzing the fibrous particulate catch with scanning  
and transmission electron microscopes, will quantify  
asbestos particles in the 1 to 5 micrometer range.  
Ambient air samples will be collected at ten locations  
in California rural and urban areas to assess emis-  
sions from mining, manufacturing, milling, transporta-  
tion, waste disposal and natural geographic locations.  
Two samplers will be used at each site for upwind/  
downwind sampling at some sites and for downwind  
sampling only at other sites. Sampling will be  
conducted over a 24-hour period to determine diurnal  
variation. Sampling times will be varied to optimize  
filter loading. Meteorological data also will be  
collected.
- The ultimate goal of the research project is to  
establish worst-case respirable asbestos concentra-  
tions in representative California locations, including  
areas with large population exposed to low asbestos  
concentrations. The staff of the Stationary Source  
Control Division will use the results to assess the  
need for control measures applicable to various kinds  
of asbestos-emitting facilities.

State of California  
AIR RESOURCES BOARD

Resolution 81-7

January 30, 1981

Mail Ballot

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, a solicited research Proposal Number 963-80 entitled "Components Influencing the Deterioration of Vehicle Emission Control Systems" has been submitted by the Systems Control, Inc. to the Air Resources Board;

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding;

Proposal Number 963-80 entitled "Components Influencing the Deterioration of Vehicle Emission Control Systems" submitted by the Systems Control, Inc. for an amount not to exceed \$84,982,

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 963-80 entitled "Components Influencing the Deterioration of Vehicle Emission Control Systems" submitted by the Systems Control, Inc. for an amount not to exceed \$84,982,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$84,982.

I certify that the above is a true and correct copy of Resolution 81-7 as passed by the Air Resources Board.

  
Sally Rump  
Board Secretary

State of California  
AIR RESOURCES BOARD

DATE: January 30, 1981  
Mail Ballot

- ITEM: Research Proposal 963-80 entitled  
"Components Influencing the Deterioration of  
Vehicle Emission Control Systems"
- RECOMMENDATION: Adopt Resolution 81-7, approving Research Proposal  
963-80 for funding in an amount not to exceed \$84,982.
- SUMMARY: Surveillance programs conducted by the Air Resources  
Board have shown that the majority of in-use vehicles  
fail to retain originally certified emission levels.  
In most cases, minor corrective adjustments or repairs  
are sufficient to bring emissions back to acceptable  
levels. However, some of the vehicles continue to  
have high emission levels despite adjustments and  
minor repairs.
- The objective of this study is to identify the  
critical emission-control components and parameters  
which have significant impact on in-use vehicle  
emission deterioration. This is to be accomplished  
by a more thorough testing of vehicles failing the  
ARB surveillance test program as a result of  
unidentified or uncertain causes. Twenty vehicles  
will be tested in this program. After pretest  
validation, the vehicles will be tested according to  
CVS-75 test procedures and by a loaded-mode test to  
measure catalyst conversion efficiencies. Component  
calibrations and engine parameters will be checked  
and test sequence repeated after replacing any  
failed component. In addition to emission testing,  
a literature survey will be performed to compile  
and review existing data.
- As a result of the study, an evaluation will be made  
regarding the need and benefits of increasing the  
stringency of certification regulations to improve  
the durability of present emission controls. Addition-  
ally, the critical parameters that should be evaluated  
in future surveillance programs will be identified.

The contractor will be required to adopt rigorous quality control procedures to affirm his quantitation of fibrous asbestos particles, using the promulgated electron microscope procedure. This will include submittal of a statistical number of duplicate samples to a second qualified laboratory for verification of particle count and identification.

The Research Screening Committee has critiqued and approved a request for proposals which was then released to approximately 100 contractors. Five responses were received. Of these, the proposal by Science Applications, Inc. was judged to be most meritorious by the staff and the Committee.

State of California  
AIR RESOURCES BOARD

Resolution 81-8

January 30, 1981

Mail Ballot

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 955-80 entitled "Evaluation of Hydrocarbon Reactivities for Use in Control Strategies" has been submitted by the Statewide Air Pollution Research Center, University of California, Riverside to the Air Resources Board;

WHEREAS, the Research staff has reviewed and recommended this proposal for approval;

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 955-80 entitled "Evaluation of Hydrocarbon Reactivities for Use in Control Strategies" submitted by the Statewide Air Pollution Research Center, University of California, Riverside for an amount not to exceed \$154,339;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 955-80 entitled "Evaluation of Hydrocarbon Reactivities for Use in Control Strategies" submitted by the Statewide Air Pollution Research Center, University of California, Riverside for an amount not to exceed \$154,339.

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$154,339.

I certify that the above is  
a true and correct copy of  
Resolution 81-8 as  
passed by the Air Resources  
Board.

  
Sally Rump  
Board Secretary

hydrocarbon-air mixture to simulate current urban atmospheres. The mixture of hydrocarbons will be designed to be representative of the South Coast Air Basin.

The Committee agreed that a protocol was needed. In recommending the proposal for funding, the Committee asked the staff to ensure that the protocol was tested with one or more solvents, that the results be published in the peer-reviewed literature and that the University assist the ARB staff in adaption of the protocol to their smog chamber.

State of California  
AIR RESOURCES BOARD

DATE: January 30, 1981  
Mail Ballot

- ITEM: Research Proposal No. 955-80 entitled, "Evaluation of Hydrocarbon Reactivities for Use in Control Strategies."
- RECOMMENDATION: Adopt Resolution 81-8 approving Research Proposal No. 955-80 for funding in an amount not to exceed \$154,339.
- SUMMARY: An important tool in maintaining the effectiveness of air quality control strategies is the "emission trade-off". This concept is particularly complex in the case of hydrocarbon control where any of a number of hydrocarbons with differing reactivities (and, thus, smog-forming potential) may be emitted in a given industrial application for which offsets are being sought.
- The reactivity concept has been used as a basis for cost-effective control strategies for more than fifteen years (LAAPCD Rule 66). Despite this lengthy period of application, there is still frequent debate over the reliability and applicability of the experimental reactivity data currently in use.
- Recent research studies show that smog chamber studies of the kind traditionally conducted for hydrocarbon reactivity assessments--namely the irradiation of a single organic compound in NO<sub>x</sub>-air systems--may have limited applicability to real polluted atmospheres. Thus, it is essential to develop scientifically sound and administratively defensible hydrocarbon reactivity scales that will reflect the response of complex urban atmospheres to increases or decreases in the emissions of specific hydrocarbons.
- This study will provide a validated experimental protocol for the determination of relative hydrocarbon reactivities, based on criteria relevant to ambient atmospheric conditions, for use by the Air Resources Board and local control agencies.
- The program proposed here is designed to evaluate several alternative experimental approaches for assessing hydrocarbon reactivities, and to recommend a protocol suitable for implementation by the ARB at the Haagen-Smit Laboratory. Development of this proposed protocol will be based on the use of a NO<sub>x</sub>=

State of California  
AIR RESOURCES BOARD

Resolution 81-10

March 26, 1981

WHEREAS, Section 39602 of the Health and Safety Code designates the Air Resources Board (ARB) as the air pollution control agency for all purposes set forth in federal law and designates the ARB as the state agency responsible for the preparation of the State Implementation Plan (SIP) required by the Clean Air Act;

WHEREAS, the Clean Air Act as amended in 1977 mandates the revision of the SIP for designated nonattainment areas of the state in order to assure the attainment and maintenance of national ambient air quality standards;

WHEREAS, the Mountain Counties Air Basin (MCAB) portion of El Dorado County and the "mid portion" of Placer County were designated nonattainment for ozone under provisions of Section 107(d) of the Clean Air Act;

WHEREAS, the El Dorado and Placer County Air Pollution Control Boards were designated and certified by the ARB as the local lead planning agencies for the preparation of the nonattainment plans for El Dorado and Placer Counties, respectively;

WHEREAS, the El Dorado and Placer County Air Pollution Control Boards held a public hearing on September 8, 1980, and August 26, 1980, respectively after 30 days notice and approved nonattainment plans (NAPs) for the MCAB portion of El Dorado County and the "mid portion" of Placer County, respectively;

WHEREAS, no large urban areas or major stationary sources exist within the MCAB portion of El Dorado County and the mid portion of Placer County;

WHEREAS, the ARB, through an extramural research contract, completed the field work for a study intended to determine the degree to which transport of pollutants from the Sacramento area contribute to the pollutant load in the MCAB portion of El Dorado County and the "mid portion" of Placer County;

WHEREAS, although the final results of the transport study are not yet available there is evidence of pollutant transport to the MCAB portion of El Dorado County and the mid-portion of Placer County;

WHEREAS, the locally adopted plans for the MCAB portion of El Dorado County and the mid-portion of Placer County contain approvable new source review rules and control measures for several categories of sources;

WHEREAS, the NAP for the MCAB portion of El Dorado County does not contain rules for degreasing or cutback asphalt, and has a perchlorethylene dry cleaning rule which has been found to be less effective than reasonably available control technology for this source;

WHEREAS, the NAP for the "mid portion" of Placer County does not contain a perchlorethylene dry cleaning rule and the APCD's degreasing rule has been found to be less effective than reasonably available control technology for this source;

WHEREAS, the results of ARB's transport study will allow a better determination as to whether any of the above additional measures will be necessary to satisfy the requirements of the Clean Air Act;

WHEREAS, the Clean Air Act and implementing regulations promulgated by the Environmental Protection Agency (EPA) require that revisions to the SIP be adopted after a public hearing for which 30 days notice to the public has been provided;

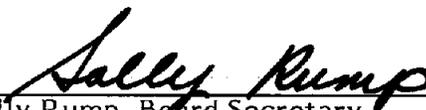
WHEREAS, a public hearing upon 30 days notice and other administrative proceedings have been held in accordance with the requirements of the Clean Air Act and the provisions of the California Health and Safety Code.

WHEREAS, the California Environmental Quality Act and Board regulations require that an action not be adopted as proposed if significant environmental impacts have been identified and there exist within the jurisdiction of the Board feasible mitigation measures or alternatives which would substantially lessen, mitigate, or avoid such impacts.

1. NOW, THEREFORE BE IT RESOLVED, that the Board adopts the local plans as conditioned in this resolution.
2. BE IT FURTHER RESOLVED, that the Board directs the Executive Officer to evaluate the results of the transport study and determine whether additional control measures will be necessary to satisfy the requirements of the Clean Air Act.
3. BE IT FURTHER RESOLVED, that upon making such a determination, the Executive Officer shall communicate that decision to the Placer County and El Dorado County Air Pollution Control Districts.
4. BE IT FURTHER RESOLVED, that the Board authorizes the Executive Officer to work with the El Dorado County Air Pollution Control District (APCD) to obtain local adoption of degreasing and cutback asphalt rules, and a more effective perchlorethylene dry cleaning rule if such rules are determined to be needed.
5. BE IT FURTHER RESOLVED, that the Board authorizes the Executive Officer to work with the Placer County APCD to obtain local adoption of a perchlorethylene dry cleaning rule and a more effective degreasing rule if such rules are determined to be needed.
6. BE IT FURTHER RESOLVED, that if the districts do not adopt the above measures within six months of receipt of notification by the Executive Officer that such measures are necessary to meet the requirements of the Clean Air Act, the Board is delegated authority to adopt such measures for the districts (except a cutback asphalt rule for the El Dorado County APCD).

7. BE IT FURTHER RESOLVED, that the Board finds that existing and forthcoming stationary source suggested control measures need to be studied further for possible future adoption in these nonattainment areas. The suggested control measures include but are not limited to: auto refinishing, pesticides, roofing tar pots, waste solvent disposal, wood furniture manufacturing, and stage II vapor recovery.
8. BE IT FURTHER RESOLVED, that the Board finds that to meet the Clean Air Act requirements for consistency of the SIP and other planning programs, all jurisdictions in the MCAB need to commit to integrate their air quality plans with land use and transportation planning to assure that growth and development do not degrade air quality.
9. BE IT FURTHER RESOLVED, that the Board directs the Executive Officer to work in cooperation with appropriate agencies to assure that federally assisted projects and federal permit activities which may result in increases in emissions will not interfere with attainment and maintenance of the NAAQS.
10. BE IT FURTHER RESOLVED, that the Board finds that the local NAPs can not project attainment of the National Ambient Air Quality Standard for ozone by December 31, 1982, due to the impact of transport from upwind urban areas, and that the Board requests of EPA an extension of the attainment date for ozone beyond December 31, 1982 but to no later than December 31, 1987.
11. BE IT FURTHER RESOLVED, the Board finds that the staff report, information presented at the March 26, 1981 Board hearing, Chapter 26 of the State Implementation Plan, the environmental impact assessments contained in the Nonattainment Plans and in the suggested control measures adopted by the Board adequately address environmental issues related to these NAP's; and the Board concurs with the staff's finding that no significant adverse environmental effects are likely to result from the Board's approval of these NAP's.
12. BE IT FURTHER RESOLVED, that the Board directs the Executive Officer to revise Chapter 9 of the State Implementation Plan for the MCAB to conform with this resolution, and that the Board authorizes the Executive Officer to submit the Chapter to EPA as a revision to the State Implementation Plan.

I certify that the above is a true and correct copy of Resolution 81-10 as passed by the Air Resources Board.

  
Sally Rump, Board Secretary

# Memorandum

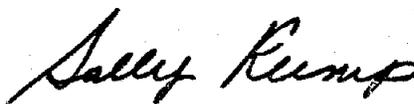
To : Huey D. Johnson  
Secretary  
Resources Agency

Date : April 6, 1981

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

From : 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 decision and response to environmental comments raised during the comment period.

  
Sally Rump  
Board Secretary

attachments  
Resolution 81-1  
Resolution 81-5  
~~Resolution 81-7~~

RECEIVED BY  
Office of the Secretary

APR 06 1981

Resources Agency of California

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider the Adoption, as Revisions to the California State Implementation Plan, of Plans for the Attainment and Maintenance of the National Ambient Air Quality Standard for Ozone in the Mountain Counties Air Basin Portion of El Dorado County and the Mid-Portion of Placer County

Agenda Item: 81-51-2

Public Hearing Date: March 26, 1981

Response Date: March 26, 1981

Issuing Authority: Air Resources Board

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

Response: N/A

CERTIFIED

Sally Rump  
Board Secretary

Date: \_\_\_\_\_

3/31/81

RECEIVED BY  
Office of the Secretary

APR 06 1981

RESOURCES AGENCY OF CALIFORNIA

State of California  
AIR RESOURCES BOARD

Resolution 81-11

May 20, 1981

Agenda Item No: 81-9-1

WHEREAS, Section 39601 of the Health and Safety Code authorizes 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, Section 43000(e) of the Health and Safety Code states that emission standards applied to new motor vehicles are standards with which all new motor vehicles shall comply;

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

WHEREAS, Board regulations in Title 13, California Administrative Code, Section 1960.1 presently establish a standard of 0.4 grams per mile of oxides of nitrogen for 1983 and subsequent year passenger cars, light-duty trucks and medium-duty vehicles, and incorporate by reference therein compliance test procedures entitled "California Exhaust Emission Standards and Test Procedures for 1981 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles" which also contain a 0.4 gram per mile oxides of nitrogen standard for the aforementioned 1983 and subsequent year model vehicles;

WHEREAS, several motor vehicle manufacturers have petitioned the Board for relief from the 0.4 gram per mile oxides of nitrogen standard adopted for 1983 passenger cars, light-duty trucks and medium-duty vehicles;

WHEREAS, the Board reaffirms its previous finding that the control of NO<sub>x</sub> emissions from motor vehicles is necessary to protect the health and well-being of the people of this state, and to achieve and maintain state and national ambient air quality standards;

WHEREAS, the Board finds that optional emission standards of 0.39 gram per mile non-methane hydrocarbons, 7.0 grams per mile carbon monoxide, and 0.7 gram per mile oxides of nitrogen standards for passenger cars, and optional emission standards of 0.39 gram per mile hydrocarbons, 9.0 grams per mile carbon monoxide, and 1.0 gram per mile oxides of nitrogen for light-duty trucks and medium-duty vehicles, 0-3999 pounds equivalent inertia weight, including a limited 75,000 mile recall provision, are technologically feasible and cost effective;

WHEREAS, the Board recognizes that not providing relief from a 0.4 gram per mile NOx standard for some manufacturers may have an adverse impact on the economy of the state and the availability of some passenger cars and light-duty truck models;

WHEREAS, the optional standards and recall provisions will ease the financial burden on domestic manufacturers;

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

WHEREAS, the Board has considered the air quality impacts of the proposed standards and regulations adopted by the resolution, and finds that there are no significant adverse environmental impacts as to the passenger car optional standards and recall provisions;

WHEREAS, the Board finds that the optional standards for light-duty trucks may have a significant adverse environmental impact, but that the accompanying recall provisions will substantially mitigate any such impact, and that further mitigation is not economically feasible; and

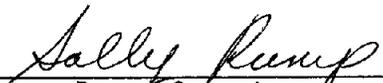
WHEREAS, a public hearing and other administrative proceedings have been held in accordance with the provisions of the Administrative Procedure Act (Government Code, Title 2, Division 3, Part 1, Chapter 4.5).

NOW, THEREFORE BE IT RESOLVED, that the Board hereby adopts amendments to Section 1960.1 and adds provision 1960.15 to Article 2, Subchapter 1, Chapter 3, Title 13, California Administrative Code as set forth in Attachment A hereto.

BE IT FURTHER RESOLVED, that the Board hereby directs the Executive Officer to make conforming amendments to the "California Exhaust Emission Standards and Test Procedures for 1981 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles".

BE IT FURTHER RESOLVED, that the Board finds that the optional standards and recall provisions adopted by this resolution will be, in the aggregate, at least as protective of health and welfare as applicable federal standards.

I certify that the above is a true and correct copy of Resolution 81-11 as adopted by the Air Resources Board

  
\_\_\_\_\_  
Sally Rump, Board Secretary

Attachment A

Amend Section 1960.1 and add Section 1960.15, Title 13, California Administrative Code, 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) The exhaust emissions from new 1981 and subsequent model passenger cars, light-duty trucks, and medium duty vehicles, subject to registration and sold and registered in this state, shall not exceed:

50,000 MILE EXHAUST EMISSION STANDARDS  
(grams per mile)

<u>Model- Year</u>	<u>Vehicle Type (1)</u>	<u>Equivalent Inertia Weight (lbs.) (2)</u>	<u>Non-Methane Hydrocarbons(3)</u>	<u>Carbon Monoxide</u>	<u>Oxides of Nitrogen (NO<sub>2</sub>) (5) (6)</u>
1981	PC	All	(0.41)	3.4	1.0
	PC(4)	All	0.39 (0.41)	7.0	0.7
	LDT,MDV	0-3999	0.39 (0.41)	9.0	1.0
	LDT,MDV	4000-5999	0.50 (0.50)	9.0	1.5
	MDV	6000 & larger	0.60 (0.60)	9.0	2.0
1982	PC	All	0.39 (0.41)	7.0	0.4
	PC(4)	All	0.39 (0.41)	7.0	0.7
	LDT,MDV	0-3999	0.39 (0.41)	9.0	1.0
	LDT,MDV	4000-5999	0.50 (0.50)	9.0	1.5
	MDV	6000 & larger	0.60 (0.60)	9.0	2.0
1983 & Subsequent	PC	All	0.39 (0.41)	7.0	0.4
	PC (5)	All	0.39 (0.41)	7.0	0.7
	LDT,MDV	0-3999	0.39 (0.41)	9.0	0.4
	LDT,MDV (5)	0-3999	0.39 (0.41)	9.0	1.0
	LDT,MDV	4000-5999	0.50 (0.50)	9.0	1.0
	MDV	6000 & larger	0.60 (0.60)	9.0	1.5

100,000 MILE EXHAUST EMISSION STANDARDS  
(grams per mile)

Model- Year	Vehicle Type (1)	Equivalent Inertia Weight (lbs.) (2)	Non-Methane Hydrocarbons(3)	Carbon Monoxide	Oxides of Nitrogen (NO <sub>2</sub> ) (5)(6)
1981	PC (Option 1)	All	0.39 <del>(6)</del> (7)	3.4	1.5
	PC (Option 2)	All	0.46 <del>(6)</del> (7)	4.0	1.5
	LDT,MDV (Option 1)	0-3999	0.39 (0.41) <del>(6)</del> (7)	9.0	1.5
	LDT,MDV (Option 2)	0-3999	0.46 <del>(6)</del> (7)	10.6	1.5
	LDT,MDV Option 1	4000-5999	0.50 (0.50) <del>(6)</del> (7)	9.0	2.0
	MDV Option 1	6000 & larger	0.60 (0.60) <del>(6)</del> (7)	9.0	2.3
	1982	PC (Option 1)	All	0.39 (0.41)	7.0
PC (Option 2)		All	0.46	8.3	1.5
LDT, MDV (Option 1)		0-3999	0.39 (0.41)	9.0	1.5
LDT, MDV (Option 2)		0-3999	0.46	10.6	1.5
LDT,MDV Option 1		4000-5999	0.50 (0.50)	9.0	2.0
MDV Option 1		6000 & larger	0.60 (0.60)	9.0	2.3
1983 & Subse- quent		PC Option 1	All	0.39 (0.41)	7.0
	PC Option 2	All	0.46	8.3	1.0
	LDT,MDV (Option 1)	0-3999	0.39 (0.41)	9.0	1.0
	LDT,MDV (Option 2)	0-3999	0.46	10.6	1.0
	LDT,MDV Option 1	4000-5999	0.50 (0.50)	9.0	1.5
	MDV Option 1	6000 & larger	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 second set of passenger car standards is optional. A manufacturer must select either the primary or optional sets of standards for its full product line for the entire two-year period.
- (5) This set of standards for 1983 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.

- (5)(6) 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-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)(7) For vehicles from evaporative emissions families with projected 50,000 mile evaporative emissions values below 1.0 gm/test, an adjustment to the hydrocarbon exhaust emission standards may be granted by the Executive Officer. The adjusted standard will be calculated using the following formula:

$$HC_{ex} = .75 (.185 - [(Di+3.3 Hs) \div (29.4)]) + HC_0$$

Where:

$HC_{ex}$  = adjusted exhaust hydrocarbon standard

$HC_0$  = unadjusted exhaust hydrocarbon standard

$Di$  = diurnal evaporative emissions

$Hs$  = hot soak evaporative emissions.

(b) 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 Air Resources Board on November 23, 1976, and as last amended December-2, 1980 May 20, 1981.

(c) With respect to any new vehicle required to comply with the standards set forth in paragraph (a), 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 (b) above. Any failure to perform scheduled maintenance shall not excuse an emissions violation unless the failure is related to or causative of the violation.

(d) Any vehicle required to comply with the standards set forth in paragraph (a) which is subject to a standard set by federal law or regulation controlling emissions of particulate matter must conform to such standard.

1960.15 Optional NOx Standards for 1983 and Later Model Passenger Cars and Light-Duty Trucks and Medium-Duty Vehicles less than 4000 lbs. Equivalent Inertia Weight.

(a) 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:

Passenger cars --0.7 gm/mile - 1983 and Subsequent  
Model Years  
LDT, MDV 0-3999 pounds EIW -- 1.0 gm/mile -  
1983 and Subsequent Model Years.

(b) Testing of vehicles certified under this section shall be conducted in accordance with the California Exhaust Emissions Test Procedures applicable to 1981 and subsequent model passenger cars, light-duty trucks and medium-duty vehicles certified to the primary California standards for 50,000 miles.

(c)(1) If, 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 vehicles certified under this section exhibits, prior to 75,000 miles or 7 years, whichever occurs first, an identifiable, systematic defect in a component listed in subsection (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 Section 2109 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.

(2) Subsection (c)(1) shall apply to the following components unless subject to allowable scheduled maintenance prior to 75,000 miles or 7 years, whichever occurs first.

I. Air and Fuel Metering System

- A. Cold start enrichment
- B. Heat riser valve and assembly
- C. Controlled hot air intake

II. Exhaust Gas Recirculation (EGR) System

- A. EGR valve and control components, and carburetor spacer if applicable.

III. Air Injection System

- A. Air pump
- B. Valves affecting distribution of flow
- C. Distribution manifold including connection to exhaust manifold

IV. Catalyst or Thermal Reactor System

- A. Catalytic converter & associated mounting hardware & constricted fuel filler neck
- B. Thermal reactor and lined or coated exhaust manifolds
- C. Exhaust portliner and/or double walled exhaust pipe

V. Evaporative Emission Control System

- A. Vapor storage canister
- B. Vapor-liquid separator

VI. Miscellaneous Items Used in Above Systems

- A. Vacuum, temperature, and time sensitive valves and switches
- B. Electronic controls including computer or microprocessor and all input sensors except for the exhaust gas oxygen sensor.

(d) Nothing in this section shall be construed as affecting in any way the manufacturer's 5 year/50,000 mile emission control systems defect warranty obligations existing under present statutes and regulations.

ATTACHMENT B

State of California  
AIR RESOURCES BOARD

Note: These procedures are printed in a style to indicate the adopted changes. New text is underlined and deleted portions are noted.

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

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

The provisions of Subparts A and B, Part 86, Title 40, Code of Federal Regulations, as they existed on April 15, 1978, are hereby adopted as the California Exhaust Emission Standards and Test Procedures for 1981 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles, with the following exceptions and additions:

1. Applicability

- a. These test procedures are applicable to 1981 and subsequent model passenger cars, light-duty trucks and medium-duty vehicles, except motorcycles. References to "light-duty trucks" in 40 CFR 86 shall apply both to "light-duty trucks" and "medium-duty vehicles" in these procedures.
- b. Any reference to vehicle sales throughout the United States shall mean vehicle sales in California.
- c. Regulations concerning EPA hearings, EPA inspections, specific language on the Certificate of Conformity, evaporative emissions, high-altitude vehicles and testing, and heavy-duty engines and vehicles shall not be applicable to these procedures, except where specifically noted.

2. Definitions

- a. "Administrator" means the Executive Officer of the Air Resources Board.
- b. "Certificate of Conformity" means Executive Order certifying vehicles for sale in California.
- c. "Certification" means certification as defined in Section 39018 of the Health and Safety Code.
- d. "Passenger car" means any motor vehicle designed primarily for transportation of persons and having a capacity of twelve persons or less.

- e. "Heavy-duty engine" means an engine which is used to propel a heavy-duty vehicle.
- f. "Heavy-duty vehicle" means any motor vehicle having a manufacturer's gross vehicle weight rating greater than 6,000 pounds, except passenger cars.
- g. "Light-duty truck" means any motor vehicle, rated at 6,000 pounds gross vehicle weight or less, which is designed primarily for purposes of transportation of property or is a derivative of such a vehicle, or is available with special features enabling off-street or off-highway operation and use.
- h. "Medium-duty vehicle" means any heavy-duty vehicle having a manufacturer's gross vehicle weight rating of 8500 pounds or less.

3. Test Procedures

- a. In order to demonstrate compliance with a non-methane hydrocarbon emission standard, hydrocarbon emissions shall be measured in accordance with the "California Non-Methane Hydrocarbon Test Procedures."
- b. Durability data submitted pursuant to subparagraph 86.078-23(f) may be from vehicles previously certified by EPA or ARB.
- c. The requirements in subparagraph 86.078-28(a)(4)(i)(B) (durability vehicles must meet emission standards) refer, for each pollutant, to the highest of either the federal or California emission standards.
- d. In paragraph 86.079-21 (Application for certification), amend subparagraph (b)(5) to read:  

(5) A statement of maintenance and procedures consistent with the restrictions imposed under subparagraph 86.078-25(a)(1), necessary to assure that the vehicles (or engines) covered by a certificate of conformity in operation in normal use conform to the regulations, and a description of the program for training of personnel for such maintenance, and the equipment required.

e. In paragraph 86.078-25 (Maintenance):

1. Amend subparagraph (a)(1) to read as follows:

(1) Scheduled maintenance on the engine, emission control system and fuel system of durability vehicles shall, unless otherwise provided pursuant to paragraph (a)(5)(iii), be restricted as set forth in the following provisions.

(i)(A) for gasoline-fueled vehicles, maintenance shall be restricted to the inspection, replacement, cleaning, adjustment and/or service of the following items at intervals no more frequent than indicated:

- (1) Drive belts on engine accessories (tension adjustment only); (30,000 miles).
- (2) Valve lash (15,000 miles).
- (3) Spark plugs (30,000 miles).
- (4) Air filter (30,000 miles).
- (5) Exhaust gas sensor (30,000 miles): Provided that an audible and/or visible signal approved by the Executive Officer alerts the vehicle operator to the need for sensor maintenance at the mileage point.
- (6) Choke (cleaning or lubrication only); (30,000 miles).
- (7) In addition, adjustment of the engine idle speed (curb idle and fast idle), valve lash, and engine bolt torque may be performed once during the first 5,000 miles of scheduled driving, provided the manufacturer makes a satisfactory showing that the maintenance will be performed on vehicles in use.

(B) for diesel-powered vehicles, maintenance shall be restricted to the following items at intervals no more frequent than every 12,500 miles of scheduled driving, provided that no maintenance may be performed after 45,000 miles of scheduled driving:

- (1) Adjust low idle speed.
- (2) Adjust valve lash if required.
- (3) Adjust injector timing.
- (4) Adjust governor.
- (5) Clean and service injector tips.
- (6) Adjust drive belt tension on engine accessories.
- (7) Check engine bolt torque and tighten as required.

(ii) Change of engine and transmission oil, change or service of oil filter and, for diesel-powered vehicles only, change or service of fuel filter and air filter, will be allowed at the mileage intervals specified in the manufacturer's maintenance instructions.

(iii) Maintenance shall be conducted in a manner consistent with service instructions and specifications provided by the manufacturer for use by customer service personnel.

- (2) Delete subparagraph (a)(3) (Service of exhaust gas recirculation system).
- (3) Delete subparagraph (a)(4) (Service of catalytic converter).

f. In paragraph 86.078-38 (Maintenance instructions):

1. Amend subparagraph (a) to read:

(a) The manufacturer shall furnish or cause to be furnished to the purchaser of each new motor vehicle (or motor vehicle engine) subject to the standards prescribed in paragraphs 86.078-8 through 86.078-11 as applicable, written instructions for the maintenance and use of the vehicle (or engine) by the purchaser as may be reasonable and necessary to assure the proper functioning of emission control systems in normal use. Such instructions shall be consistent with and not require maintenance in excess of the restrictions imposed under subparagraph 86.078-25(a)(1), except that the instructions may, subject to approval by the Administrator, require additional maintenance for vehicles operated under extreme conditions. In addition, subject to approval by the Administrator, the instructions may require inspections necessary to insure safe operation of the vehicle in use.

In addition to any maintenance which may be required pursuant to the preceding paragraph, the instructions may also recommend such inspections, maintenance, and repair as may be reasonable and necessary for the proper functioning of the vehicle and its emission control systems. If the instructions recommend maintenance in addition to that which may be required pursuant to the preceding paragraph, they shall distinguish clearly between required and recommended maintenance.

2. Amend subparagraph (c)(1) to read:

(1) Such instructions shall specify the performance of all scheduled maintenance performed by the manufacturer under subparagraph 86.078-25(a)(1).

If the instructions specify recommended maintenance as well as required maintenance, they shall distinguish clearly between the two.

3. Amend subparagraph (d) by adding a new subparagraph (3) to read:

(3) Such instructions shall specify the performance of all scheduled maintenance performed by the manufacturer under subparagraph 86.078-25(a)(1).

If the instructions specify recommended maintenance as well as required maintenance, they shall distinguish clearly between the two.

g. Amend subparagraph 86.078-39(a) (Submission of maintenance instructions) to read:

(a) The manufacturer shall provide to the Administrator, no later than the time of the submission required by paragraph 86.078-23 a copy of the maintenance instructions which the manufacturer proposes to supply to the ultimate purchaser in accordance with subparagraph 86.078-38(a). The Administrator will review such instructions to determine whether they are consistent with federal requirements, and to determine whether the instructions for required maintenance are consistent with the restrictions imposed under subparagraph 86.078-25(a)(1). The Administrator will notify the manufacturer of his determinations.

#### 4. Standards

The following standards represent the maximum projected exhaust emissions for the useful life of the vehicle.

Model Year	Vehicle Type (a)	Equivalent Inertia Weight (lbs.)(b)	Non-Methane Hydrocarbons(c)	50,000 Mile Exhaust Emission Standards (grams per vehicle mile)	
				Carbon Monoxide	Oxides of Nitrogen (NO <sub>2</sub> )(e)
1981	PC	A11	(0.41)	3.4	1.0
	PC(d)	A11	0.39 (0.41)	7.0	0.7
	PC(g)	A11	0.39 (0.41)	7.0	1.5
	LDT, MDV	0-3999	0.39 (0.41)	9.0	1.0
	LDT, MDV(h)	0-3999	0.39 (0.41)	9.0	1.5
	LDT, MDV	4000-5999	0.50 (0.50)	9.0	1.5
	MDV	6000&larger	0.60 (0.60)	9.0	2.0
1982	PC	A11	0.39 (0.41)	7.0	0.4
	PC(d)	A11	0.39 (0.41)	7.0	0.7
	PC(i)	A11	0.39 (0.41)	7.0	1.0
	LDT, MDV	0-3999	0.39 (0.41)	9.0	1.0
	LDT, MDV	4000-5999	0.50 (0.50)	9.0	1.5
	LDT, MDV(h)	0-3999	0.39 (0.41)	9.0	1.5
	MDV	6000&larger	0.60 (0.60)	9.0	2.0
1983 & Subsequent	PC	A11	0.39 (0.41)	7.0	0.4
	PC(k)	A11	0.39 (0.41)	7.0	0.7
	LDT, MDV	0-3999	0.39 (0.41)	9.0	0.4
	LDT, MDV(k)	0-3999	0.39 (0.41)	9.0	1.0
	LDT, MDV	4000-5999	0.50 (0.50)	9.0	1.0
MDV	6000&larger	0.60 (0.60)	9.0	1.5	
1983(i)	PC	A11	0.39 (0.41)	7.0	0.7(j)
	LDT, MDV	0-3999	0.39 (0.41)	9.0	1.0
1984(i)	PC	A11	0.39 (0.41)	7.0	0.7
	LDT, MDV	0-3999	0.39 (0.41)	9.0	0.7(j)
1985(i)	LDT, MDV	0-3999	0.39 (0.41)	9.0	0.7

Model Year	Vehicle Type (a)	Equivalent Inertia Weight (lbs.)(b)	100,000 Mile Exhaust Emission Standards (grams per vehicle mile)		Carbon Monoxide	Oxides of Nitrogen NO <sub>2</sub> (e)
			Non-Methane Hydrocarbons(c)			
1981	PC(Option 1)	All	0.39	(f)	3.4	1.5
	PC(Option 2)	All	0.46	(f)	4.0	1.5
	LDT, MDV (Option 1)	0-3999	0.39	(0.41) (f)	9.0	1.5
	LDT, MDV (Option 2)	0-3999	0.46	(f)	10.6	1.5
	LDT, MDV (Option 1)	4000-5999	0.50	(0.50) (f)	9.0	2.0
	MDV (Option 1)	6000+larger	0.60	(0.60) (f)	9.0	2.3
	1982	PC(Option 1)	All	0.39	(0.41)	7.0
PC(Option 2)		All	0.46		8.3	1.5
LDT, MDV (Option 1)		0-3999	0.39	(0.41)	9.0	1.5
LDT, MDV (Option 2)		0-3999	0.46		10.6	1.5
LDT, MDV (Option 1)		4000-5999	0.50	(0.50)	9.0	2.0
MDV (Option 1)		6000&larger	0.60	(0.60)	9.0	2.3
1983 & Subsequent		PC (Option 1)	All	0.39	(0.41)	7.0
	PC (Option 2)	All	0.46		8.3	1.0
	LDT, MDV (Option 1)	0-3999	0.39	(0.41)	9.0	1.0
	LDT, MDV (Option 2)	0-3999	0.46		10.6	1.0
	LDT, MDV (Option 1)	4000-5999	0.50	(0.50)	9.0	1.5
	MDV (Option 1)	6000&larger	0.60	(0.60)	9.0	2.0

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

(b) Equivalent inertia weights are determined under subparagraph 86.129-79(a).

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

- (d) The second set of passenger car standards is optional. A manufacturer must select either the primary or optional sets of standards for its full product line for the entire two-year period.
- (e) The maximum projected emissions of oxides of nitrogen measured on the federal Highway Fuel Economy Test (HWFET; 40 CFR Part 600, Subparagraph B) shall be no greater than 1.33 times the applicable passenger car standards and 2.0 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.
- (f) For vehicles from evaporative emissions families with projected 50,000 mile evaporative emissions values below 1.0 gm/test, an adjustment to the hydrocarbon exhaust emission standard may be granted by the Executive Officer. The adjusted standard will be calculated using the following formula:

$$HC_{ex} = .75 \left( .185 - \frac{Di+3.3 Hs}{29.4} \right) + HC_o$$

Where:

$HC_{ex}$  = adjusted exhaust hydrocarbon standard

$HC_o$  = unadjusted exhaust hydrocarbon standard

Di = diurnal evaporative emissions

Hs = hot soak evaporative emissions.

- (g) For vehicles certified to special standards authorized by Section 1960.2, Article 2, subchapter 1, Chapter 3, Title 13, California Administrative Code.
- (h) For vehicles certified to special standards authorized by Section 1960.3, Article 2, subchapter 1, Chapter 3, Title 13, California Administrative Code.
- (i) 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.
- (j) 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.
- (k) Optional Standards. A manufacturer may choose to certify to these optional standards pursuant to the provisions set forth in Section 1960.15, Title 13, California Administrative Code.

#### 5. Additional Requirement

- a. A statement must be supplied that the production vehicles shall be in all material respects the same as those for which certification is granted.

- b. If a gasoline-fueled vehicle manufacturer requires the use of unleaded fuel, a statement will be required that the engine and transmission combinations for which certification is requested are designed to operate satisfactorily on a gasoline having a research octane number not greater than 91.
- c. Labeling required pursuant to paragraph 86.079-35 and Section 1965, Chapter 3, Title 13 of the California Administrative Code shall conform with the requirements specified in the "California Motor Vehicle Tune-Up Label Specifications."
- d. For gasoline-powered vehicles evidence shall be supplied that the air/fuel metering system or secondary air injection system is capable of providing sufficient oxygen to theoretically allow enough oxidation to attain the CO emission standard at barometric pressures equivalent to those expected at altitudes ranging from sea level to 6,000 feet elevation.
- e. The mechanism for adjusting the idle air/fuel mixture, if any, shall be designed so that either:
  - (i) The mixture adjustment mechanism is not visible, even with the air cleaner removed, and special tools and/or procedures are required to make adjustments; or
  - (ii) in the alternative, the Executive Officer may, upon reasonable notice to the manufacturer, require that a certification test of a vehicle be conducted with the idle air/fuel mixture at any setting which the Executive Officer finds corresponds to settings likely to be encountered in actual use. The Executive Officer, in making this finding, shall consider the difficulty of making adjustments, damage to the carburetor in the event of any effort to make an improper adjustment, and the need to replace parts following the adjustment.

The manufacturer shall submit for approval by the Executive Officer his or her proposed method for compliance with this requirement in his or her preliminary application for certification.

- f. The exhaust emissions shall be measured from all exhaust emission data vehicles tested in accordance with the federal Highway Fuel Economy Test (HWFET; 40 CFR Part 600 Subpart B). The oxides of nitrogen emissions measured during such tests shall be multiplied by the oxides of nitrogen deterioration factor computed in accordance with paragraph 86.078-28, and then rounded and compared with the standard as set forth in paragraph 4 above. All data obtained pursuant to this paragraph shall be reported in accordance with procedures applicable to other exhaust emissions data required pursuant to these procedures.

In the event that one or more of the manufacturer's emission data vehicles fail the HWFET standard listed in paragraph 4, the manufacturer may submit to the Executive Officer engineering data or other evidence showing that the system is capable of complying with the standard. If the Executive Officer finds, on the basis of an engineering evaluation, that the system can comply with the HWFET standard, he or she may accept the information supplied by the manufacturer in lieu of vehicle test data.

- g. The manufacturer shall submit to the Executive Officer a statement that those vehicles for which certification is requested have driveability and performance characteristics which satisfy that manufacturer's customary driveability and performance requirements for vehicles sold in the United States. This statement shall be based on driveability data and other evidence showing compliance with the manufacturer's performance criteria. This statement shall be supplied with the manufacturer's final application for certification, and with all running changes for which emission testing is required.

If the Executive Officer has evidence to show that in-use vehicles demonstrate poor performance that could result in wide-spread tampering with the emission control systems, he or she may request all driveability data and other evidence used by the manufacturer to justify the performance statement.

6. Optional 100,000 Mile Certification Procedure

The alternate emission standards shown in paragraph (4) above shall apply to any engine family which meets all of the following additional requirements:

- a. Each exhaust emission durability data vehicle shall be driven, with all emission control systems installed and operating, for 100,000 miles or such lesser distance as the Executive Officer may agree to as meeting the objectives of this procedure. Compliance with the emission standards shall be established as follows:
  - (i) The linear regression line for all pollutants shall be established by use of all required data from tests of the durability vehicle at every 5,000 mile intervals from 5,000 to 100,000 miles. The requirements in subparagraph 86.078-28(a)(4)(i)(B)(durability vehicles must meet emissions standards) refer, for each pollutant, to the highest of either the federal 50,000 mile or California 100,000 mile emission standards.

(ii) Compliance with the hydrocarbon and carbon monoxide standards shall be determined as follows:

(a) For Option 1:

- (A) the interpolated 4,000 and 50,000 mile points on the linear regression line in (i) shall not exceed the appropriate hydrocarbon and carbon monoxide standards, except as in (B) below.
- (B) the linear regression line in (i) may exceed the standard provided that no data point exceeds the standard.
- (C) the hydrocarbon and carbon monoxide data from the 4,000 mile test point of the emission data vehicle shall be multiplied by the deterioration factor computed by dividing the interpolated 50,000 mile point by the interpolated 4,000 mile point. These values shall not exceed the appropriate hydrocarbon and carbon monoxide standards.

(b) For Option 2:

- (A) the interpolated 4,000 and 100,000 mile points on the linear regression line in (i) shall not exceed the appropriate hydrocarbon and carbon monoxide standards, except as in (B) below.
- (B) the linear regression line in (i) may exceed the standard provided that no data point exceeds the standard.
- (C) the hydrocarbon and carbon monoxide data from the 4,000 mile test point of the emission data vehicle shall be multiplied by the deterioration factor computed by dividing the interpolated 100,000 mile point by the interpolated 4,000 mile point. These values shall not exceed the appropriate 100,000 mile hydrocarbon and carbon monoxide standards.

(iii) Compliance with the oxides of nitrogen standard for Options 1 and 2 shall be determined as follows:

- (a) the interpolated 4,000 and 100,000 mile points on the linear regression line in (i) shall not exceed the appropriate 100,000 mile oxides of nitrogen standard except as in (b) below.
- (b) the linear regression line in (i) may exceed the standard provided that no data point exceeds the standard.
- (c) the oxides of nitrogen data from the 4,000 mile test point of the emission data vehicle shall be multiplied by the deterioration factor computed by dividing the interpolated 100,000 mile point by the interpolated 4,000 mile point. These values shall not exceed the appropriate 100,000 mile oxides of nitrogen standard.

All references in these test procedures to "useful life," 5 years, and 50,000 miles shall mean "total life," 10 years, and 100,000 miles, respectively, except in subparagraph (ii).

b. Only the following scheduled maintenance shall be allowed under subparagraph 86.078.25(a)(1)(i).

25(a)(1)(i)(A) Option 1. For 1981 and later model gasoline or diesel-fueled vehicles, maintenance shall be restricted to the inspection, replacement, cleaning, adjustment, and/or service of the following items at intervals no more frequent than indicated.

- (1) Drive belt tension on engine accessories (30,000 miles).
- (2) Valve lash (15,000 miles).
- (3) Spark plugs (30,000 miles).
- (4) Air filter (30,000 miles).
- (5) Exhaust gas sensor (30,000 miles); Provided that an audible and/or visible signal approved by the Executive Officer alerts the vehicle operator to the need for sensor maintenance.
- (6) Choke, cleaning or lubrication only (30,000 miles).
- (7) Idle speed (30,000 miles).
- (8) Fuel Filter (30,000 miles).
- (9) Injection timing (30,000 miles).

25(a)(1)(i)(B) Option 2. For 1981 and later model gasoline or diesel-fueled vehicles, maintenance shall be restricted to the inspection, replacement, cleaning, adjustment, and/or service of the following items at intervals no more frequent than indicated:

- (1) Drive belt tension on engine accessories (30,000 miles).
- (2) Valve lash (15,000 miles).
- (3) Spark plugs (30,000 miles).
- (4) Air filter (30,000 miles).
- (5) Fuel filter (30,000 miles).
- (6) Idle speed (30,000 miles).
- (7) Injection timing (30,000 miles).

c. (iii) In addition, adjustment of the engine idle speed (curb idle and fast idle), valve lash, and engine bolt torque may be performed once during the first 5,000 miles of scheduled driving, provided the manufacturer makes a satisfactory showing that the maintenance will be performed on vehicles in use.

d. e. The manufacturer agrees to apply to vehicles certified under this paragraph the provision of Section 43204 of the California Health and Safety Code for a period of ten years or 100,000 miles, whichever first occurs.

7. For all emission standards options, any vehicle which is subject to a standard set by federal law or regulation controlling emissions of particulate matter must conform to such standard.

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider Amendments to Title 13, Section 1960.1, California Administrative Code, Regarding Exhaust Emission Standards and Test Procedures for 1983 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles, and Conforming Amendments to Related Provisions Governing Emission Control System Warranty (Title 13, CAC Sections 2035-2046)

Agenda Item. No. 81-9-1

Public Hearing Date: May 20, 1981

Response Date: May 20, 1981

Issuing Authority: Air Resources Board

Comment: There may be a significant environmental impact resulting from the increased NOx emissions permitted by the optional standards for light-duty trucks.

Response: The recall provisions in the regulations will substantially mitigate this impact and further mitigation is economically infeasible.

Certified: Sally Pump  
Board Secretary

Date: 6/22/81

RECEIVED BY  
Office of the Secretary

JUN 22 1981

Resources Agency of California

# Memorandum

Huey D. Johnson  
Secretary  
Resources Agency

Date : June 22, 1981

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

From : **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 decision and response to environmental comments raised during the comment period.

  
Sally Rump  
BOARD SECRETARY

att.   
Res. 81-34

RECEIVED BY  
Office of the Secretary

JUN 22 1981

Resources Agency of California

State of California  
AIR RESOURCES BOARD

Resolution 81-13

Agenda Item No: 81-11-1

June 25, 1981

WHEREAS, the Air Resources Board (the "Board") and the Environmental Protection Agency have established health-based ambient air quality standards for oxidant and ozone, respectively, and these standards are frequently exceeded in several of the state's air basins;

WHEREAS, Health and Safety Code Sections 39003, 39500, 39602 and 41500 authorize the Board to coordinate, encourage, and review efforts to attain and maintain state and national ambient air quality standards;

WHEREAS, Health and Safety Code Sections 39600 and 39605 authorize the Board to act as necessary to execute the powers and duties granted to and imposed upon the Board, and provide assistance to the air pollution control districts;

WHEREAS, the Suggested Control Measure for the Control of Emissions of Fugitive Photochemically Reactive Organic Compound Emissions from Oil and Gas Production Operations and Gas Processing Plants was developed by the staffs of the Board and the Ventura County Air Pollution Control District;

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;

WHEREAS, the Board has held a duly noticed public meeting on this matter and has heard and considered comments presented by representatives of the ARB, districts, affected industries, and other interested persons and agencies; and

WHEREAS, the Board finds:

That emissions of photochemically reactive organic compounds from equipment such as valves, connections, diaphragms, seal packings, sealing mechanisms, hatches, sight glasses and meters (components) in oil and gas production and gas processing operations contribute to concentrations of oxidant and ozone which exceed, and are expected to continue to exceed, the state and federal ambient air quality standards in several of the state's air basins;

That inspection and maintenance procedures and technology, by which leakage of photochemically reactive organic compounds from components in oil and gas production and gas processing facilities can be reduced to meet the standards of 10,000 ppm hexane equivalent and 3 drops per minute specified in the Suggested Control Measure, constitute reasonably available control technology;

That although fugitive emissions of photochemically reactive compounds from components in oil and gas production operations and gas processing plants can be greatly reduced, such emissions cannot be completely eliminated;

That technology to inspect, repair and maintain components in oil and gas production and gas processing facilities in a safe manner is available;

That the technology to meet the emission standards contained in the Suggested Control is available and cost effective;

That the Suggested Control Measure has no significant adverse environmental impacts.

NOW, THEREFORE BE IT RESOLVED, that the Board endorses the Suggested Control Measure for the Control of Fugitive Photochemically Reactive Organic Compound Emissions from Oil and Gas Production Operations and Gas Processing Plants as set forth in Attachment A to this Resolution.

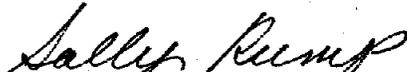
BE IT FURTHER RESOLVED, that the Executive Officer is directed to forward the Suggested Control Measure to districts which need reductions in photochemically reactive organic compound emissions to achieve and maintain state or national ambient air quality standards, with a recommendation that these districts use the Suggested Control Measure as a guideline and that they consider the adoption of the Suggested Control Measure or a similar measure sufficiently effective to meet local air pollution control needs.

BE IT FURTHER RESOLVED, that, in forwarding the Suggested Control Measure to districts, the Executive Officer is directed to recommend that the districts' enforcement of the leak limits in adopted district rules for the control of fugitive photochemically reactive organic compound emissions in oil and gas production operations and gas processing plans become operative on January 1, 1982.

BE IT FURTHER RESOLVED, that, in forwarding the Suggested Control Measure to districts, the Executive Officer is directed to recommend that the districts establish criteria (such as those in Attachment C) for determining whether a violation of the measure has occurred. This determination shall be based on the District's air quality improvement needs and on recognition of the fact that complete elimination of leaks is not cost-effective.

BE IT FURTHER RESOLVED, that, in forwarding the Suggested Control Measure to districts, the Executive Officer is directed to recommend that the districts take into consideration the guidelines in Attachment B to this resolution setting forth the relative cost-effectiveness of requiring the control of fugitive photochemically reactive organic compound emissions from various types of components and streams in oil and gas production operations.

I certify that the above is a true and correct copy of Resolution 81-13, as adopted by the Air Resources Board.

  
Sally Rump, Board Secretary

ATTACHMENT A

SUGGESTED CONTROL MEASURE FOR THE CONTROL OF FUGITIVE  
PHOTOCHEMICALLY REACTIVE ORGANIC COMPOUND EMISSIONS FROM  
OIL AND GAS PRODUCTION OPERATIONS AND GAS PROCESSING PLANTS

Rule \_\_\_\_\_. Fugitive Photochemically Reactive Organic Compound Emissions  
from Oil and Gas Production Operations:

A. APPLICABILITY AND DATE OF EFFECT

This rule is applicable to emissions of photochemically reactive organic compounds from components at crude oil production facilities and natural gas production and processing facilities. Except as specified elsewhere in this Rule, this Rule shall become effective on (date of adoption by an air pollution control district.)

B. DEFINITIONS

1. "Photochemically Reactive Organic Compound" (PROC): any compound containing at least one atom of carbon, except: methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and carbonates.
2. "Photochemically Reactive Organic Fluid" (PROF): any fluid (liquid or gas) containing one or more photochemically reactive organic compounds.
3. "Leak"
  - a. the dripping at a rate of more than three (3) drops per minute of liquid containing photochemically reactive organic compounds; or
  - b. an emission of gaseous photochemically reactive organic compound which causes an appropriate analyzer sampling one (1) centimeter from a source to register as high or higher than it would register if sampling a gas composed of 10,000 ppm hexane in air.
4. "Component": any valve, connection, diaphragm, seal packing, sealing mechanism, hatch, sight glass, or meter.
5. "Appropriate analyzer": a hydrocarbon analyzer which uses the flame ionization detection method, or an equivalent method approved by the air pollution control officer and which is calibrated with propane.
6. Inspections:
  - a. "Operator inspection": a survey of components to detect and repair leaks for the purposes of complying with this Rule. An operator inspection may be performed by any method deemed appropriate by the operator.

b. "Agency inspection": a survey of components by air pollution control district personnel for enforcement purposes.

7. "Working day": any day except Saturdays, Sundays, and holidays.

### C. REQUIREMENTS

1. Hatches shall be closed at all times except during sampling or attended maintenance operations.

2. A person shall not use any component at a crude oil or natural gas production facility or at a natural gas processing plant if such component leaks photochemically reactive organic compounds into the atmosphere.\*

3. All components containing photochemically reactive organic fluids shall be inspected by the operator as necessary to ensure compliance with the provisions of this Rule. The inspections shall be accomplished by any means which the operator deems suitable.

4. An operator, upon detection of a leaking component, shall affix to that component a readily visible tag bearing the date on which the leak is detected. The tag shall remain in place until the leaking component is repaired and reinspected and found to be in compliance with the requirements of this Rule.

~~3-~~ 5. An operator shall repair ~~be considered to be in violation of this Rule if~~ a leaking component ~~is not repaired~~ to a leak-free condition and reinspected the component within the time specified in subsection E1, E2, or E3.

~~4-~~ 6. Emissions from components which have been tagged by the operator for repair or which have been repaired and are awaiting re-inspection pursuant to subsection E3 shall not be violation per subsection C2.

~~5-~~ 7. This Section C shall be effective beginning on January 1, 1982.

### D. OPERATOR INSPECTION-SCHEDULE MANAGEMENT PLANS

1. Each operator shall, no later than one hundred twenty (120) days after the date of adoption of this Rule, submit a management plan to the air pollution control officer. The management plan shall describe the procedure which the operator intends to use to comply with the requirements of this Rule. The management plan must include: A plot plan with a description of the process operation; a product flow diagram in sufficient detail to make it possible to determine the type of product passing through lines of the system; a description of any hazard which might affect the safety of an inspector; and identification of process units which cannot be immediately shut down for repair of leaks.

\*In adopting this measure, the Air Resources Board recommends that the districts establish criteria for determining whether a violation has occurred. This determination shall be based on the District's air quality improvement needs and on recognition of the fact that complete elimination of leaks is not cost-effective.

2. Within sixty (60) days of beginning construction on a new facility requiring a management plan or beginning modifications to a facility covered under an existing management plan, the operator shall submit a new or modified plan to the air pollution control officer.

E. REPAIR

1. Any component leak which causes a registration on an appropriate analyzer to exceed 75,000 parts per million photochemically reactive organic compounds expressed as hexane when the analyzer probe is held at one centimeter from the joining surfaces shall be repaired to a leak-free condition within fifteen (15) working days unless an application for a variance is filed with the District Hearing Board within fifteen (15) working days.

2. Any component leak which causes a registration on an appropriate analyzer to exceed 10,000 parts per million photochemically reactive organic compounds expressed as hexane when the analyzer probe is held at one centimeter from the joining surfaces and any component leak dripping liquid containing photochemically reactive organic compounds at a rate of more than three drops per minute shall be repaired to a leak-free condition within twenty (20) working days unless an application for a variance is filed with the District Hearing Board within the twenty (20) day period. This provision shall not apply to a leaking component which is an essential part of a critical process unit identified in the approved management plan, in which case repair shall be accomplished during the next shut down or process turnaround of the essential process unit, but not later than six months from the date of detection.

3. An operator shall reinspect a component for leaks within ten (10) working days after the date on which the component is required.

F. EXEMPTIONS

1. The requirements of this Rule shall not apply to components that are located in areas which cause inspection to be infeasible or unsafe for personnel provided that such components are identified in the management plan approved by the air pollution control officer as described in Section D1 of this Rule.

2. The requirements of this Rule shall not apply to any component which is vented to a vapor control system which is being operated in compliance with the rules and regulations of the air pollution control district.

3. The requirements of this Rule shall not apply to any component which the operator demonstrates, to the satisfaction of the air pollution control officer, that without the contribution of ethane to an appropriate analyzer registration, the analyzer registration would be less than 10,000 ppm photochemically reactive organic compounds as hexane. This subsection F.3. shall not be applicable to any component in a natural gas processing plant.

4. If an operator can demonstrate to the air pollution control officer that any component or group of components included in the management plan ~~do~~ does not leak or that it contains materials which are not likely to emit photochemically reactive organic compounds, or ethane under the conditions described in subsection F.3. or are that the component or group of components is not cost-effective to routinely inspect, the operator may request that the air pollution control officer exclude these components from unannounced agency inspections. Components in this category may be inspected by district personnel at any time provided the operator is notified five working days prior to the inspection of the components.

## ATTACHMENT B

### GUIDELINES FOR ESTIMATING THE RELATIVE COST-EFFECTIVENESS RATIOS FOR THE CONTROL OF FUGITIVE PHOTOCHEMICALLY REACTIVE ORGANIC COMPOUND EMISSIONS FROM VARIOUS TYPES OF COMPONENTS AND STREAMS IN OIL AND GAS PRODUCTION OPERATIONS AND GAS PROCESSING PLANTS

A measure for the control of fugitive photochemically reactive organic compound emissions from components in oil and gas production operations and gas processing plants can be made to apply to some or all of the following combinations of components and streams. The following list ranks components and streams according to the relative cost-effectiveness ratio of controlling fugitive emissions.

- 1) Application of gaseous emission limitation (10,000 ppm) to all gas-service components in all applications in oil and gas production facilities and gas processing plants.
- 2) Application of gaseous emission limitation (10,000 ppm) and of liquid leak limitation (3 drops per minute) to all components containing liquid condensate or other liquid streams comprised largely of low molecular weight organic compounds (e.g. vapor recovery system condensate and liquid streams in gas plants) in oil and gas production facilities and gas processing plants.
- 3) Application of gaseous and liquid leak limitations to all dynamic components (valves, pumps, etc.) handling photochemically reactive organic fluids in oil and gas production facilities and gas processing plants.
- 4) Application of liquid leak limitation to all static components (flanges, threaded connections, etc.) handling photochemically reactive organic fluids upstream of first vessel or tank in oil production facilities.
- 5) Application of liquid leak limitation to all static components handling photochemically reactive organic fluids downstream of first vessel or tank in oil production facilities.
- 6) Application of gaseous leak limitation to all static components handling photochemically reactive organic fluids upstream of first vessel or tank in oil production facilities.
- 7) Application of gaseous leak limitation to all static components handling photochemically reactive organic fluids downstream of first vessel or tank in oil production facilities.

NOTE: Cost/effectiveness ratio can generally be expected to decrease with increasing API gravity, gas to oil ratio, temperature, and pressure of stream and with decreasing density of stream. Data on cost effectiveness are now being obtained on heavy crudes.

## ATTACHMENT C

### SUGGESTED CONTROL MEASURE FOR THE CONTROL OF FUGITIVE PHOTOCHEMICALLY REACTIVE ORGANIC COMPOUND EMISSIONS FROM OIL AND GAS PRODUCTION OPERATIONS AND GAS PROCESSING PLANTS

#### GUIDELINES FOR DETERMINING WHETHER A VIOLATION HAS OCCURRED

Since the achievement of a totally leak-free facility may be financially prohibitive, the Air Resources Board recommends that districts establish criteria for determining whether a violation of the measure has occurred. These criteria may include:

- 1) Prosecutorial discretion during the first few months after the measure has been adopted, or when an operator has a good enforcement history.
- 2) The issuance of Notices of Violation or Citations only in cases where more than a small, specified number (such as one) of Notices of Repair has been issued during the course of a facility inspection.
- 3) The issuance of Notices of Violation or Citations only in the event that the number of leaks detected during the course of an inspection exceeds a small, specified percentage (such as 0.25%) of the number of components inspected.
- 4) The issuance of Notices of Repair only for leaks found in components handling streams which do not contain gases or low molecular weight liquids.

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Meeting to Consider a Suggested Control Measure for the Control of Emissions of Photochemically Reactive Organic Compounds from Oil and Gas Production Operations and Gas Processing Plants

Agenda Item No. 81-11-1

Public Hearing Date: June 24 and 25, 1981

Response Date: June 25, 1981

Issuing Authority: Air Resources Board

Comment: No significant environmental issues were identified at the hearing or by the staff.

Response: N/A

Certified: Sally Rump  
Board Secretary

Date: 7/2/81

RECEIVED  
Office of the Secretary

JUL 2 1981

Resources Agency of California

# Memorandum

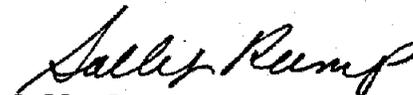
Huey D. Johnson  
Secretary  
Resources Agency

Date : April 6, 1981

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

From : Air Resources Board

Pursuant to Title 17, Section 60006(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 decision and response to environmental comments raised during the comment period.

  
Sally Rump  
BOARD SECRETARY

attachments  
Resolution 81-13

RECEIVED BY  
Office of the Secretary

JUL 2 1981

Resources Agency of California

State of California  
AIR RESOURCES BOARD

Resolution 81-14

March 26, 1981

WHEREAS, a solicited research Proposal Number 81-14 entitled "Review and Analysis of Special Accounting Practices, Tax Laws and Other Financial Considerations Applicable to Selected California Industries" has been submitted by Price Waterhouse and Company to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding the proposal:

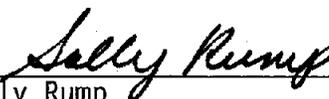
Proposal Number 81-14 entitled "Review and Analysis of Special Accounting Practices, Tax Laws and Other Financial Considerations Applicable to Selected California Industries" submitted by Price Waterhouse and Company for an amount not to exceed \$64,110;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board under the powers and authority granted by the Health and Safety Code, Section 39705, hereby accepts the recommendation of the Research Screening Committee and approves the following proposal:

Proposal Number 81-14 entitled "Review and Analysis of Special Accounting Practices, Tax Laws and Other Financial Considerations Applicable to Selected California Industries" submitted by Price Waterhouse and Company for an amount not to exceed \$64,110.

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$64,110.

I certify that the above is a true and correct copy of Resolution 81-14 as passed by the Air Resources Board.

  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-5-3 b.2  
DATE: March 26, 1981

- ITEM: Research Proposal 996-81 entitled "Review and Analysis of Special Accounting Practices, Tax Laws, and Other Financial Considerations Applicable to Selected California Industries"
- RECOMMENDATION: Adopt Resolution 81-14, approving Research Proposal 996-81 for funding in an amount not to exceed \$64,110.
- SUMMARY: This proposal if funded would be for a nine month study to investigate the accounting, tax, and financial practices used in California industries. This would result in a comprehensive reference guide to assist the Air Resources Board in determining the "bottom line" costs for an industrial company to comply with the Board's air pollution abatement requirements. The reference guide will be developed by using published sources of financial information and by utilizing the expertise of Price Waterhouse (PW), industry specialists, representatives of firms from within the industries being studied, and individuals from institutions familiar with the industries. Because the literature is boundless, PW industry specialists will provide direction to the appropriate areas of research. Local staff will then research the general and industry literature both within and outside PW, the findings will be summarized and discussed with ARB staff and then reviewed by appropriate industry, trade association, and institutional representatives before the report of their findings is written.
- The specific industries to be researched are the electrical utilities; petroleum producers, refiners and marketers; chemical manufacturing; and other manufacturing industries to be selected in consultation with staff. Some sources and items to be examined are: Financial Accounting Standards Board, American Institute of Certified Public Accountants, Securities and Exchange Commission, Internal Revenue Code, PW tax checklists, California Franchise Tax Board, California Public Utilities Commission, large versus small firms, ranges of the cost of capital within each industry, variables likely to change the industries' cost of capital in the future, and financing methods available in each industry.

State of California  
AIR RESOURCES BOARD

Resolution 81-15

March 26, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, a solicited research Proposal Number 999-81 entitled, "Study of Emissions Impact of Selected Aftermarket Parts" has been submitted by Custom Engineering Performance and Emissions Laboratories to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

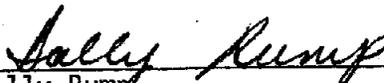
- Proposal Number 999-81 entitled, "Study of Emissions Impact of Selected Aftermarket Parts," submitted by the Custom Engineering Performance and Emissions Laboratories for an amount not to exceed \$71,022.

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

- Proposal Number 999-81 entitled, "Study of Emissions Impact of Selected Aftermarket Parts," submitted by the Custom Engineering Performance and Emissions Laboratories for an amount not to exceed \$71,022.

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$71,022.

I certify that the above is a true and correct copy of Resolution as passed by the Air Resources Board.

  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-5-3 b.3  
DATE: March 26, 1981

ITEM: Research Proposal 999-81 entitled, "Study of Emissions Impact of Selected Aftermarket Parts."

RECOMMENDATION: Adopt Resolution 81-15, approving research Proposal 999-81 for funding in an amount not to exceed \$71,022.

SUMMARY: Section 27156 of the California Vehicle Code requires that any add-on or modified part which alters or modifies the original design or performance of a vehicle's emission control system be exempted by the Air Resources Board before it can be legally sold for installation on on-road motor vehicles. The number of such devices sold and installed illegally and their impact on emissions has not been adequately determined.

The purpose of this study is to determine the volume and pattern of sales of selected aftermarket parts in California, the differences in emissions between vehicles in the unmodified and modified state, and the factor(s) which contribute to changes in emission levels. Sales and usage data will be obtained for exhaust headers, modified intake manifolds, turbochargers, modified ignition distributors, modified cam-shafts and replacement carburetors. On the basis of the survey, six vehicles will be selected and tested (two for each type of aftermarket part) to determine the effects of exhaust headers, modified intake manifolds, and turbochargers on exhaust levels, fuel economy and driveability. For each device, the first vehicle is to be the one most likely to be modified with the particular part, and the second is to represent the "worst case" application on the basis of potential adverse effect upon emissions.

State of California  
AIR RESOURCES BOARD

Resolution 81-16

March 26, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 980-81 entitled "Deposition of Particles in Children's Lungs" has been submitted by the University of California at Irvine to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

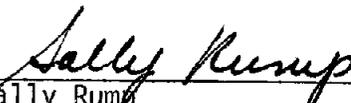
Proposal Number 980-81 entitled "Deposition of Particles in Children's Lungs" has been submitted by the University of California at Irvine for an amount not to exceed \$103,425;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 980-81 entitled "Deposition of Particles in Children's Lungs" submitted by the University of California at Irvine for an amount not to exceed \$103,425,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$103,425.

I certify that the above is a true  
and correct copy of Resolution 81-16  
as passed by the Air Resources Board.

  
\_\_\_\_\_  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-5-3 b.4  
DATE: March 26, 1981

ITEM: Research Proposal No. 980-81 entitled "Deposition of Particles in Children's Lungs".

RECOMMENDATION: Adopt Resolution 81-16 approving Research Proposal No. 980-81 for funding not to exceed \$103,425.

SUMMARY: Particulate matter suspended in the air we breathe has been associated with harm to human health for many years. Numerous regulations have been adopted to limit exposures in both the occupational and ambient environment. Research into the health effects of particulate matter has shown that several factors influence the relative risks imposed upon inhalation. These include particle size, chemical composition and physical properties and complex functional parameters of the human lung. Models have been developed to predict how particles behave in the lung and thus to aid in risk assessment. The most notable application of particle deposition to date has been in the occupational setting, which has been limited to healthy young adult males. More sensitive elements of the population require further consideration and protection.

Most scientists believe that children constitute one such sensitive portion of the population. Children exhibit breathing patterns different from adults; they generally inhale more air (and pollution) per pound of body weight than adults; and they often spend a larger fraction of their day out of doors. In addition it is thought that the effects of inhaled pollution could have a more severe effect on a developing lung than on the fully developed lung.

The objective of this proposal is to gather data on how particulate matter deposits in the lungs of children of various ages. These data will be applied to calibrate and verify existing deposition models developed for the adult lung.

This proposal consists of two closely related parts. The first involves casting and studying the lungs of age-segregated child autopsy cases. Approximately 25 to 30 casts would be made. The Los Angeles County Coroner has

agreed to assist in this effort by making the needed cadavers available for the effort. The proponent would fill the lung airways to make a negative cast, either in situ or in lungs excised under controlled conditions. These negative casts would undergo extensive measurement efforts to provide information needed for later modeling efforts. Positive casts would then be made from the negatives to produce hollow airways to be used for deposition studies to determine the pattern of particle deposition by size.

The data collected in the effort described above, together with other available information related to children, will be applied to various deposition models presently in use for adults in the second portion of this study. Adjustments of such models to reflect collected data will be applied to children.

The information to be gained from the proposed effort will provide a basis for a more fully protective fine-particle air quality standard. Moreover, we expect that information gained in this study on deposition in children would help in the design of future epidemiological studies.

State of California  
AIR RESOURCES BOARD

Resolution 81-17

March 26, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 982-81 entitled "The Influence of Exercise on Lung Injury from Exposure to Ozone" has been submitted by the University of California at Irvine to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval and;

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

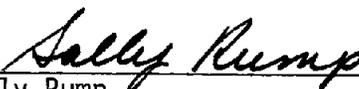
Proposal Number 982-81 entitled "The Influence of Exercise on Lung Injury from Exposure to Ozone" submitted by the University of California at Irvine for an amount not to exceed \$100,000;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 982-81 entitled "The Influence of Exercise on Lung Injury from Exposure to Ozone" submitted by the University of California at Irvine for an amount not to exceed \$100,000,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$100,000.

I certify that the above is a true  
and correct copy of Resolution 81-17  
as passed by the Air Resources Board.

  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-5-3 b.5  
DATE: March 26, 1981

- ITEM: Research Proposal No. 982-81 entitled "The Influence of Exercise on Lung Injury from Exposure to Ozone".
- RECOMMENDATION: Adopt Resolution 81-17 approving Research Proposal No. 982-81 for funding not to exceed \$100,000
- SUMMARY: Exercise is known to influence pulmonary functional performance of human subjects undergoing ozone exposures. In accordance with theory, results of such tests show that an increase in ventilatory rate results in an increase of dose of ozone. Studies have also shown that athletic performance can be adversely affected on high oxidant days. What is not known is the type and extent of tissue damage accompanying the changes. Such a determination can be obtained by using laboratory test animals which are exposed under controlled exercise, sacrificed and studied for tissue damage.
- Previous studies by the proponent have demonstrated responses to ozone exposures as low as 0.4 ppm administered over 4 hour periods of exercise. Lesions were seen at a rate 8 times higher than seen in resting rats. Ozone levels of 0.8 ppm produced death in many exercising rats. It has also been shown that rats will actively avoid ozone exposure at levels as low as 0.2 ppm over a six-hour period. This study will follow up on such observations and extend exposures to lower concentrations. Limited efforts will also be undertaken to relate tissue damage to ventilatory volumes.
- This study would involve exposing rats to atmospheres containing ozone. Exercise stress would be included as a variable to investigate previous observations of enhanced sensitivity to ozone in exercising rats.
- Rats will be trained to run on treadmills for a period of four hours through a series of trials that employ shock as a stimulus to perform. "Qualified" rats would be exposed for four hours to ozone at 0.35, 0.20 and 0.15 ppm and to ozone free air. Three groups of rats will be used for each exposure level. Each group will receive a different exercise/rest protocol in order to distinguish the impact of the different workloads and therefore different ventilatory rates on tissue damage.

Rats will also be tested to determine if their maximal workload capabilities are affected by the ozone exposure. This will be done by testing rats on the day before and the day following the above described ozone treatment. They will be placed on a variable-speed, variable-slope treadmill. The angle and speed will be increased until the rats fail to continue running and accept shocks.

Lung damage will be studied in exposed rats by killing them two days post exposure and examining prepared lung sections microscopically for lesions in the alveolar region and "free" cells in air spaces. The lung sections will be scored on a graded scale relating to the type of damage and the amount of the lung involved. Workload measurements would then be used to relate damage observations to ventilatory rates on the basis of published relationships between workload and ventilatory rate.

The proposed study would replicate and greatly extend previous exercise protocols and attempt to relate microstructural damage, and work output levels to ozone exposure. The outcome of the study will add to our understanding of health risks to humans in varying levels of exercise/work in the outdoor environment.

State of California  
AIR RESOURCES BOARD

Resolution 81-18

March 26, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 981-81 entitled, "Monitoring of Mutagens and Carcinogens in Community Air", has been submitted by the Air and Industrial Hygiene Laboratory Section, California Department of Health Services to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

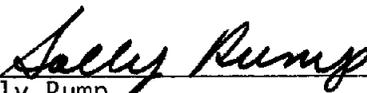
Proposal Number 981-81 entitled, "Monitoring of Mutagens and Carcinogens in Community Air", submitted by the Air and Industrial Hygiene Laboratory Section, California Department of Health Services for an amount not to exceed \$82,650;

NOW, THEREFORE, BE IT RESOLVED, that the Air resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 981-81 entitled, "Monitoring of Mutagens and Carcinogens in Community Air", submitted by the Air and Industrial Hygiene Laboratory Section, California Department of Health Services for an amount not to exceed \$82,650,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$82,650.

I certify that the above is a true and correct copy of Resolution 81-18 as passed by the Air Resources Board.

  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-5-3 b.6  
DATE: March 26, 1981

ITEM: Research Proposal No. 981-81 entitled  
"Monitoring of Mutagens and Carcinogens  
in Community Air".

RECOMMENDATION: Adopt Resolution 81-18 approving Research  
Proposal No. 981-81 for funding in an amount  
not to exceed \$82,650.

SUMMARY: The research project proposed by the California  
Department of Health Services will assess the  
mutagenic potency of suspended particulate matter  
in Contra Costa County, an area that has been  
identified as having high rates of lung cancer.  
The objectives of this research project include:

1. An analysis of a broad spectrum on organic molecules to better reconcile the chemical data and the observed mutagenicities. The analysis will include polycyclic aromatic hydrocarbons (PAH) and polycyclic organic matter (POM) (e.g., nitro-substituted and oxygenated PAH),
2. The use of chemical signatures in the collected samples to better identify possible sources of carcinogens and mutagens in ambient air,
3. An analysis of three periods of intensive sampling periods designed to investigate possible sources of mutagenic aerosols in ambient air, and
4. The further integration of the chemical and biochemical data into an ongoing epidemiological cancer study in Contra Costa County.

This study proposes to apply the Ames Salmonella mutagenicity test to particulate samples collected in Contra Costa County. These samples will be examined for the presence of POM in an attempt to further identify the chemicals responsible for the observed mutagenic activity. A completed analysis of five PAH's for mutagenic activity showed that these represent only about 2 percent of the total mutagenic activity in ambient air. Thus, the principal sources of mutagens currently remain obscure. In the present research study, unsubstituted, nitro-substituted and oxygenated PAH as well as heterocyclic compounds (e.g., benzacridine) will be tested to elucidate the "excess mutagenicity"

question. In addition to the standard Ames Salmonella tester strains, recently developed nitroreductase mutant strains will be used to indicate the presence of mutagenic nitrosated organics in the air samples.

This study will be carried out in two phases. One phase will provide the baseline information and will consist of hi-vol collection of particulate at three locations in Contra Costa County (Richmond, Concord, and Pittsburg).

Samples will be analyzed for mutagenicity and selected POM as well as total suspended particulate, lead, benzene-soluble organics, sulfates and nitrates. The filter samples from each location will be composited over three four-month intervals: July-October 1981; November 1981-February 1982; March-June 1982. Samples collected for POM and mutagenicity testing will be subjected to special handling. Following collection, these filters will be immediately wrapped in aluminum foil, sealed in envelopes, and refrigerated. They will be transported and stored cold prior to testing. These special procedures may prove critical since preliminary studies indicated that significant losses of organics may occur when filters are stored at room temperature.

The second phase will consist of three periods of intensive sampling and analysis. This phase is designed to identify possible sources of mutagenic material and determine the diurnal and seasonal variations of ambient aerosols. The analysis will include measurements of total particulate mass, sulfates, nitrates, lead, organics, mutagenicity, POM, and multielemental analysis. The analysis will also include concurrent concentrations of the following gaseous pollutants: nitric oxide, nitrogen dioxide, carbon monoxide, sulfur dioxide and ozone. The intensive phase will be conducted on days when meteorological conditions are as follows:

- Winter: Air drainage from the east, 0-200 m inversion height. Typically high TSP and NO<sub>2</sub> days in November through January.
- Summer: Westerly flow, inversion height 200-500 m. Sample during the occurrence of high oxidant days in July through August.
- Fall: Stagnant air mass, weak variable winds,

State of California  
AIR RESOURCES BOARD

Resolution 81-19

March 26, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 1014-81 entitled "Cumulative Effects of Acid Rain on Plant Productivity and Soil Nutrient Supply Under California Conditions", has been submitted by the University of California at Berkeley to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

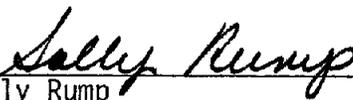
Proposal Number 1014-81 entitled "Cumulative Effects of Acid Rain on Plant Productivity and Soil Nutrient Supply Under California Conditions" submitted by the University of California at Berkeley for an amount not to exceed \$129,750;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1014-81 entitled "Cumulative Effects of Acid Rain on Plant Productivity and Soil Nutrient Supply Under California Conditions" submitted by the University of California at Berkeley for an amount not to exceed \$129,750,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$129,750.

I certify that the above is a true  
and correct copy of Resolution 81-19  
as passed by the Air Resources Board.

  
\_\_\_\_\_  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO.: 81-5-3 b.7  
DATE: March 26, 1981

ITEM: Research Proposal No. 1014-81 entitled "Cumulative Effects of Acid Rain on Plant Productivity and Soil Nutrient Supply Under California Conditions".

RECOMMENDATION: Adopt Resolution 81-19 approving Research Proposal No. 1014-81 for funding in an amount not to exceed \$129,750.

SUMMARY: Damage from acid precipitation to aquatic ecosystems in Sweden and New York State has been well documented. The effects of acid precipitation on vegetation are not yet fully understood, but an extensive research effort is currently under way in the U.S. to assess potential problems.

Sponsored by ARB, the proponent initially surveyed various locations in California and demonstrated the occurrence of acid precipitation in some areas of the State. Further ARB-sponsored research by the proponent demonstrated that simulated acid precipitation (pH 2.0) injured foliage and stimulated unfertilized barley and clover growth, probably by supplying plants with nitrogen and sulfur. This "fertilizer effect" of acid precipitation was not observed when customary amounts of nitrogen and sulfur fertilizers were added to the soil but the adverse effects persisted.

The results of the research imply that short term effects of acid deposition on soils could either stimulate plant growth by nutrient release or damage plant growth by toxic element release. In the long term, however, plant growth is only likely to be impaired because the toxic element aluminum, which is mobilized by acid, is so abundant in soil and could be taken up by plants subjected to acid precipitation for a very extended time. Manganese concentrations could also become sufficiently available to become toxic in some soils.

Two range plants and two forest tree species, both economically important in California, will be grown in soil and subjected to different acid precipitation levels at pH 3.0 and above. The cumulative effects of acid precipitation on plant productivity will be determined after two sequential harvests of the tree species and eight

sequential harvests of the range plants. Soil nutrient levels and pH will be determined after each harvest to determine if toxic minerals accumulate or if essential plant nutrients are solubilized and thus subject to leaching. The important soil-microbe mediated process of nitrification, denitrification and rate of organic matter decomposition will be monitored to determine if acid precipitation is adversely affecting the conversion of soil nitrogen into forms usable by the plant.

The proposed work would provide useful information to the ARB for assessing the impact of acid precipitation on California plant-soil-microbe systems. The study would extend our knowledge in two areas: 1) the cumulative effects of acid precipitation and 2) the effects of acid precipitation on the integrated plant-soil-microbe system.

State of California  
AIR RESOURCES BOARD

Resolution 81-20

March 26, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 1013-81 entitled "Effects of Ozone and Sulfur Dioxide Mixtures on Forest Vegetation of the Southern Sierra Nevada" has been submitted by the University of California at Riverside to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

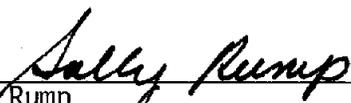
Proposal Number 1013-81 entitled "Effects of Ozone and Sulfur Dioxide Mixtures on Forest Vegetation of the Southern Sierra Nevada" submitted by the University of California at Riverside for an amount not to exceed \$141,318;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1013-81 entitled "Effects of Ozone and Sulfur Dioxide Mixtures on Forest Vegetation of the Southern Sierra Nevada" submitted by the University of California at Riverside for an amount not to exceed \$141,318,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$141,318.

I certify that the above is a true and correct copy of Resolution 81-20 as passed by the Air Resources Board.

  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-5-3 b.8  
DATE: March 26, 1981

- ITEM: Research Proposal No. 1013-81 entitled "Effects of Ozone and Sulfur Dioxide Mixtures on Forest Vegetation of the Southern Sierra Nevada"
- RECOMMENDATION: Adopt Resolution 81-20 approving Research Proposal No. 1013-81 for funding in an amount not to exceed \$141,318.
- SUMMARY: Relatively high ozone concentrations occur on the eastern slope of the Sierra Nevada Mountains due to transport of ozone and ozone precursors from urban areas of the Central Valley. Scattered surveys in the mountain areas have reported widespread foliar injury from ozone on various tree species. Oil production operations in Kern County generate sulfur dioxide, which is also transported to the eastern slope of the mountains. Sulfur dioxide from smelters and other sources in the U.S. and Canada has also been reported to cause extensive foliar injury on tree species. The forest vegetation in the Sequoia National Forest east of Bakersfield, is impacted by both ozone and sulfur dioxide; yet, no studies have been carried out on the effects of ozone - sulfur dioxide mixtures on forest vegetation in the area.
- Research in Canada over a 10-year period demonstrated a high correlation between foliar injury and foliar sulfur content of forest vegetation as a function of distance from the pollutant source, plant species and leaf age. Other Canadian research has shown that sulfur isotope ratios may be useful for determining the source of sulfur in the plant, i.e. fossil fuels or the earth's crust. These techniques may also help determine if mixtures of ozone and sulfur dioxide act additively, synergistically, or antagonistically in terms of California forest vegetation growth and injury.
- This study is divided into a field phase and a controlled fumigation phase. The field phase includes gathering soil and foliage samples from locations in the Sequoia National Forest at various distances from SO<sub>2</sub> sources. Samples will be analyzed for sulfur content<sup>2</sup> to develop and apply diagnostic standards for interpreting the effects of ozone-sulfur dioxide mixtures on foliar injury. Ambient concentrations of ozone and sulfur dioxide will also be monitored in the

Sequoia National Forest. Representative samples of soil and foliage will be analyzed for  $^{34}\text{S}/^{32}\text{S}$  ratios to investigate the diagnostic potential of stable sulfur isotopes for determining the source of sulfur metabolized by plants.

The controlled fumigation phase includes exposing several tree species to known concentrations of mixtures of ozone and sulfur dioxide. Foliage from fumigated plants will be analyzed for sulfur content and foliar injury, and growth effects will be correlated with sulfur content. The controlled fumigations will provide data on known concentrations of ozone and sulfur dioxide so the field data can be interpreted.

Correlating foliar sulfur content with injury or damage to plants could help establish threshold doses for sulfur injury for various plant species and provide a ready indicator of atmospheric sulfur inputs. The study may also help determine if the combined ozone-sulfur dioxide air quality standard adequately protects forest vegetation. The determination of  $^{34}\text{S}/^{32}\text{S}$  ratios may be a useful tool for establishing relationships between pollutant sources and receptors.

State of California  
AIR RESOURCES BOARD

Resolution 81-21

March 26, 1981

WHEREAS, an unsolicited research Proposal number 1012-81 entitled "Chemical Nature of Particulate Atmospheric Mutagens in California's South Coast Air Basin" has been submitted by the University of California, Riverside to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding the proposal:

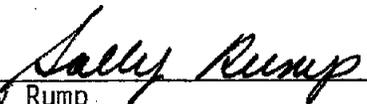
Proposal Number 1012-81 entitled "Chemical Nature of Particulate Atmospheric Mutagens in California's South Coast Air Basin" submitted by the University of California, Riverside for an amount not to exceed \$144,816;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board under the powers and authority granted by the Health and Safety Code, Section 39705, hereby accepts the recommendation of the Research Screening Committee and approves the following proposal:

Proposal Number 1012-81 entitled "Chemical Nature of Particulate Atmospheric Mutagens in California's South Coast Air Basin" submitted by the University of California, Riverside for an amount not to exceed \$144,816.

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$144,816.

I certify that the above is a true and correct copy of Resolution 81-21 as passed by the Air Resources Board.

  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-5-3 b.9  
DATE: March 26, 1981

ITEM: Research Proposal No. 1012-81 entitled "Chemical Nature of Particulate Atmospheric Mutagens in California's South Coast Air Basin."

RECOMMENDATION: Adopt Resolution 81-21 approving Research Proposal No. 1012-81 for funding in an amount not to exceed \$144,816.

SUMMARY: Significant ambient levels of particulate organic matter (POM) are found in California's major air basins; these levels may increase in the 1980s with the increasing popularity of diesel light duty motor vehicles (LDMV) and additional coal-fired power plants. POM contains polycyclic aromatic hydrocarbons (PAH), some of which are potent animal carcinogens (e.g., benzo(a)pyrene (BaP)). Furthermore, these compounds are predominantly associated with small particles (<1  $\mu\text{m}$ ) that can be inhaled and deposited in lungs of humans.

The investigators at the Statewide Air Pollution Research Center, U.C. Riverside, have demonstrated that a significant level of direct mutagenicity occurs in the particulate organic matter (POM) collected at various representative locations throughout the South Coast Air Basin. The investigators have shown that this mutagenic activity is not caused by the "classical" polycyclic aromatic hydrocarbons such as benzo(a)pyrene. Three possible sources of this mutagenicity are currently under consideration. These are: 1) an unidentified PAH formed during the combustion process; 2) reaction products of the particulate organic material formed in the atmosphere; or 3) reactions that may occur on filter surfaces during the collection of the POM.

In order to gain information concerning the identity of the chemical components responsible for mutagenicity and to gain insight concerning the mechanisms by which these compounds are formed, the following objectives are proposed:

- 1) To conduct a search for the compounds in ambient particulate matter in the South Coast Air Basin

that are responsible for the high level of mutagenic activity observed in previous studies.

2. To isolate and characterize compounds present in ambient particulate matter and suspected of being highly mutagenic.
3. Develop methods for sampling aerosol material that will minimize the possibility of forming mutagenic material while the particles are on the filter.
4. To initiate studies of the role of diesel exhaust in the formation of mutagenic particulate material.

The results of this study will be used by the scientific community to improve their sampling methods so that oxidation and/or nitration of the particulate material on the filter is minimized, and ultimately by the Board to develop a control strategy and appropriate regulations to minimize exposure of the public to mutagenic particulate materials.

State of California  
AIR RESOURCES BOARD

Resolution 81-22

March 26, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 1017-81 entitled "Correlative and Sensitive Discriminants for Air Pollution Control" has been submitted by the Professional Staff Association of Los Angeles/University of Southern California to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

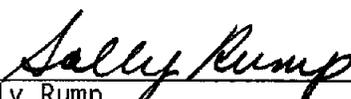
Proposal Number 1017-81 entitled "Correlative and Sensitive Discriminants for Air Pollution Control" submitted by the Professional Staff Association of Los Angeles/University of Southern California for an amount not to exceed \$58,792;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1017-81 entitled "Correlative and Sensitive Discriminants for Air Pollution Control" submitted by the Professional Staff Association of Los Angeles/University of Southern California for an amount not to exceed \$58,792,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount no to exceed \$58,792.

I certify that the above is a true and correct copy of Resolution 81-22 as passed by the Air Resources Board.

  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-5-3 b.10  
DATE: March 26, 1981

ITEM: Research Proposal No. 1017-81 entitled "Correlative and Sensitive Discriminants for Air Pollution Control".

RECOMMENDATION: Adopt Resolution 81-22 approving Research Proposal No. 1017-81 for funding in an amount not to exceed \$58,792.

SUMMARY: Nitrogen dioxide (NO<sub>2</sub>) has frequently been said to be far less toxic than ozone. This assertion is based on several comparisons, some of which are indirect. Even direct comparisons, however, may not be appropriate because of probable differences in the modes of action of ozone and NO<sub>2</sub>. Clearly, further work with NO<sub>2</sub> is needed to resolve this question.

The results of studies by the proponent and others have recently provided data that this major constituent of photochemical smog is capable of producing potentially adverse effects at levels approaching those at which ozone has been shown to have an adverse effect. The proponent has demonstrated cellular level changes in lung structure following intermittent exposures to 0.3 ppm NO<sub>2</sub>. These cellular alterations can be seen for as long as 10 weeks after the exposures have stopped. The kinds of structural and cellular alterations detected by the proponent are thought to be similar, if not the same as, those seen in the early stages of certain lung diseases where usable air exchange volumes are destroyed. In addition, very consistent spleen-weight changes have been seen in animals exposed to NO<sub>2</sub>.

This proposal is simple in concept and design. It consists of placing 100 pregnant mice into a filtered air control chamber and 100 pregnant mice into exposure chambers. They will deliver nearly simultaneously in the chambers. NO<sub>2</sub> exposures will be at 0.35 ppm for the 12 weeks following delivery. The exposure will be for 7 hours a day, 5 days a week. At the end of the twelve week exposure period and at weeks 4, 10, 20 and 32 after the exposure period has been stopped, mice will be removed from each group and killed. Lungs will be removed, preserved and prepared for microscopic study. Alveolar cell type changes as well as alveolar structure will be determined using the image analysis.

Limited study of subcellular components of alveolar cells will also be pursued. Spleen weights will also be measured on all animals. These four parameters, i.e., alveolar cell changes, alveolar structure, subcellular changes and spleen weights, have all been shown to be sensitive indicators of NO<sub>2</sub> exposure. The proposed study will provide valuable information relating to what extent the effects of NO<sub>2</sub> exposures seen in previous studies persist over time and whether or not they are reversible. Such information adds key pieces of information to the previous work. The results of this and earlier studies will serve as a basis for reconsideration of the ambient air quality standards for NO<sub>2</sub>.

State of California  
AIR RESOURCES BOARD

Resolution 81-23

March 26, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 1018-81 entitled, "Chemical Consequences of Air Quality Standards and of Control Implementation Programs" has been submitted by the University of California, Riverside to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommended for funding:

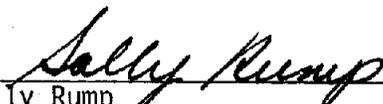
Proposal Number 1018-81 entitled, "Chemical Consequences of Air Quality Standards and of Control Implementation Programs" submitted by the University of California, Riverside for an amount not to exceed \$154,366;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1018-81 entitled, "Chemical Consequences of Air Quality Standards and of Control Implementation Programs," submitted by the University of California, Riverside for an amount not to exceed \$154,366,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$154,366.

I certify that the above is a true and correct copy of Resolution 81-23 as passed by the Air Resources Board.

  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-5-3 b.11  
DATE: March 26, 1981

ITEM: Research Proposal No. 1018-81 entitled  
"Chemical Consequences of Air Quality  
Standards and of Control Implementation Plans"

RECOMMENDATION: Adopt Resolution 81-23 approving Research  
Proposal No. 1018-81 for funding in an  
amount not to exceed \$154,366.

SUMMARY: The smog chamber facility at the Statewide Air  
Pollution Research Center (SAPEC) at U.C. Riverside  
will be used for a three element project to:  
(1) Investigate the source of "chamber effects"  
which have, at times, made chamber data difficult  
to interpret and required that empirical corrections  
be made when smog chamber data are used in control  
strategy designs and models. (2) Quantify the smog  
forming potential of relatively inert long-chain  
hydrocarbons typical of those found in diesel and  
jet fuels. (3) Measure the reactivity and identify  
the reaction products of benzene and other aromatic  
hydrocarbons. Each of these elements are discussed  
in more detail below.

For nearly ten years it has been recognized that  
smog chamber studies do not fully agree with  
photochemical smog reactions, measured in the ambient  
air. More recently, it has been determined that  
smog chambers have some unknown source of free  
radicals. These transient but highly reactive  
chemical fragments perturb the rates of appearance  
or disappearance of the various species such as  
hydrocarbons, nitrogen oxides, and ozone, formed  
or consumed in the chamber. Research to explain  
this phenomenon was begun as a part of the  
1979-80 research project funded by the ARB. Dr.  
Pitts and his co-workers plan to conclude this  
investigation of chamber radical sources by exper-  
imentally determining the magnitude of this source  
of radicals in both the all-Teflon and all-glass  
configurations of the Riverside 6000-liter chamber.

As a result of a number of hydrocarbon substitution  
measures beginning with Rule 66, as well as for  
other reasons, the emissions of "low reactivity"  
relative to "high reactivity" hydrocarbons and  
solvents is increasing. The chamber radical source  
effects would be expected to result in overpre-  
diction of the relative reactivities of these "low-  
reactivity" compounds in standardized tests now

being developed. To better understand these effects and to provide important data for the state-of-the-art urban airshed computer models, the investigators propose to investigate the atmospheric chemistry of the higher alkanes which are important constituents of gasoline, diesel, and jet fuels.

Finally, the investigators propose to study the photochemical reactions and the reaction products of benzene. This compound is of particular interest because of the widespread use of benzene (and its derivatives) as fuels and solvents and especially because benzene (and many of its polycyclic derivatives) are known carcinogens. Additionally, knowledge of the reaction products formed by the NO<sub>x</sub>-air-benzene irradiation will provide important clues to the type of compounds that may be of importance to the SAPRC mutagen study.

State of California  
AIR RESOURCES BOARD

Resolution 81-24

March 26, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 1016-81 entitled "Effects of Air Pollution on Airway Function" has been submitted by the University of California at San Francisco to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 1016-81 entitled "Effects of Air Pollution on Airway Function" submitted by the University of California at San Francisco for an amount not to exceed \$126,989;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1016-81 entitled "Effects of Air Pollution on Airway Function" submitted by the University of California at San Francisco for an amount not to exceed \$126,989,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$126,989.

I certify that the above is a true and correct copy of Resolution 81-24 as passed by the Air Resources Board.

  
\_\_\_\_\_  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-5-3 b.12  
DATE: March 26, 1981

ITEM: Research Proposal No. 1016-81 entitled  
"Effects of Air Pollution on Airway Function".

RECOMMENDATION: Adopt Resolution 81-24 approving Research  
Proposal No. 1016-81 for funding in an amount  
not to exceed \$126,989.

SUMMARY: Sulfur dioxide has long been known to affect  
adversely the human respiratory system. Persons  
with existing lung diseases appear to be most  
sensitive to this pollutant.

The proponent has been pursuing research with low  
levels of SO<sub>2</sub> employing both normal and asthmatic  
subjects. Work to date has produced some striking  
findings that have raised questions regarding the  
adequacy of the protection provided by current  
SO<sub>2</sub> standards.

These key results have been obtained in lightly  
exercising asymptomatic asthma subjects: ten-  
minute exposures to as little as 0.1 ppm SO<sub>2</sub>  
have been shown to produce bronchoconstriction in  
some asthmatics. The implications of these findings  
have caused the studies to be closely scrutinized  
and, as a result, questions have been raised that  
might be addressed in further exposure work. Most  
of the questions here has centered about the suit-  
ability of mouthpiece delivery of the air containing  
SO<sub>2</sub>. Many physicians believe that the nose plays  
an important role in removal of SO<sub>2</sub> before the  
pollutant reaches the lung so that these studies  
underestimate the threshold level for the response.  
Questions have also been raised as to what might  
be seen if higher exercise rates are employed.

Previous studies by the proponent have indicated  
that both ozone and SO<sub>2</sub> produce bronchoconstriction.  
It is therefore suspected that combined exposure to  
the two pollutants might results in interactive  
effects. Previous experiments done by the pro-  
ponents on human subjects were inconclusive.

This proposal has three main objectives. They are:  
(1) to compare the influence of mouth and nose  
breathing on SO<sub>2</sub> responses (2) to study the im-  
plication of increased workload and thus higher

ventilatory rate on  $\text{SO}_2$  responses of human subjects and (3) to study the effects of combined  $\text{SO}_2$  and ozone on experimental animals. The end points to be observed in all experiments involving humans are indices of airway constriction.

Four experiments are proposed to address these objectives.

Experiment 1 - It is the intent of the proponent to study the responses of mildly asthmatic subjects to  $\text{SO}_2$  at 0.5 to 1 ppm breather through the mouth or nose for 10 minutes. This will be achieved with a mask that allows suppression of either oral or nasal breathing.

Experiment 2 - This study will investigate the response of asthmatics to low levels of  $\text{SO}_2$  under moderate and heavy workloads. Six to ten mildly asthmatic subjects will perform light, moderate and heavy exercise loads for 5 to 10 minutes in purified moist air with 0.25 ppm  $\text{SO}_2$ .

Experiment 3 - This study would involve the use of atropine, a broncho-dilator, to study the mechanisms involved in producing the observed airway resistance increases following  $\text{SO}_2$  exposures in the range of 0.5 - 1 ppm. Asthmatic subjects will be employed in these experiments.

Experiment 4 - This study will determine whether any interaction between ozone and  $\text{SO}_2$  can be demonstrated employing pulmonary functional tests. Dogs will be used as subjects for this effort. Previous studies by the proponents using human subjects produced indications of interactions but they were difficult to reproduce. The proponent has demonstrated that  $\text{SO}_2$  and  $\text{O}_3$  alone produce similar bronchoconstriction and that similar mechanisms may be involved. If this is so, it is possible that, under proper conditions, they might interact to produce increased airway resistance and other function changes.

State of California  
AIR RESOURCES BOARD

Resolution 81-25

March 24, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 1018-81 entitled "Characterization of Reactants, Reaction Mechanisms and Reaction Products Leading to Extreme Acid Rain and Acid Aerosol Conditions in Southern California," has been submitted by the Meteorology Research Inc., to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 1018-81 entitled, "Characterization of Reactants, Reaction Mechanisms and Reaction Products Leading to Extreme Acid Rain and Acid Aerosol Conditions in Southern California," submitted by the Meteorology Research Inc., (\$100,731) with a contribution from California Institute of Technology (\$76,917) for a total amount not to exceed (\$177,648);

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1018-81 entitled, "Characterization of Reactants, Reaction Mechanisms and Reaction Products Leading to Extreme Acid Rain and Acid Aerosol Conditions in Southern California," submitted by the Meteorology Research Inc., (\$100,731) with a contribution from California Institute of Technology (\$76,917) for a total amount not to exceed (\$177,648),

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$177,648.

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-5-3 b.13  
DATE: March 26, 1981

ITEM: Research Proposal No. 1018-81 entitled "Characterization of Reactants, Reaction Mechanisms and Reaction Products Leading to Extreme Acid Rain and Acid Aerosol Conditions in Southern California."

RECOMMENDATION: Adopt Resolution 81-25 approving proposal No. 1018-81 for funding in an amount not to exceed \$177,648.

SUMMARY: The rainfall of the South Coast Air Basin has been shown to be acidic, i.e., to have a pH less than 5.6, as a result of nitric and sulfuric acids present in the atmosphere. The sulfuric and nitric acid content of rainfall is specifically correlated with atmospheric oxidant levels. Highest acidity, nitrate and sulfate concentrations are exhibited during low precipitation intensity episodes. In September 1978, the pH of an individual storm event in Pasadena was 2.89, a value nearly 1000 times more acidic than the unpolluted background value. The South Coast Air Basin has the highest annual number of days of heavy fog in the county. This fact, in combination with the high levels of SO<sub>2</sub>, NO<sub>x</sub>, and oxidants in the South Coast Air Basin means that the potential for acidic gas and dews certainly exists in Southern California.

The objectives of this project are to: 1) determine the composition of cloud droplets and submicron aerosol during conditions of extreme acidity in Los Angeles; 2) determine the relationship of pH, strong acid and oxidant concentrations in cloud and precipitation water samples; 3) investigate hypothesized sulfur or nitrogen oxidation mechanisms of acidity formation; 4) demonstrate the occurrence of non-photochemical oxidation processes.

During this study airborne sampling will be carried out during two week-long intensive periods over the South Coast Air Basin. Sampling will be done during periods of high acidity, i.e., stratus conditions, during periods of relative stagnation. At the same time three surface-based sampling sites will be operated to collect cloud water, mist and rain water. One the three sites, at Caltech, will be operated for a one-year period during periods of fog, mist and light rain.

Chemical analysis of the cloud and rain water and aerosol samples will be performed in order to understand the relationships between aerosols and cloudwater chemistry. Mechanisms will be proposed to explain the oxidation rates, pH levels, and sulfate and nitrate levels found during this study.

This study will provide valuable information on the oxidation of NO<sub>x</sub> and SO<sub>2</sub> and their incorporation into cloud water. The proposed work will increase our understanding of the chemistry of formation of acid precipitation and acidic aerosols in the atmosphere.

This information will assist the Board in developing strategies to reduce both acid precipitation and atmospheric acidity to acceptable levels.

State of California  
AIR RESOURCES BOARD

Resolution 81-26

March 26, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, a solicited research Proposal Number 962-80 entitled, "A Study of Components Influencing the Deterioration of Vehicle Emission Control Systems," has been submitted by Olson Engineering, Inc. to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 962-80 entitled, "A Study of Components Influencing the Deterioration of Vehicle Emission Control Systems," submitted by Olson Engineering, Inc. for an amount not to exceed \$91,676;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 962-80 entitled, "A Study of Components Influencing the Deterioration of Vehicle Emission Control Systems," submitted by Olson Engineering, Inc. for an amount not to exceed \$91,676,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$91,676.

I certify that the above is a true and correct copy of Resolution 81-26 as passed by the Air Resources Board.

  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-5-3 b.14  
DATE: March 26, 1981

ITEM: Research Proposal 962-80 entitled, "A Study of Components Influencing the Deterioration of Vehicle Emission Control Systems."

RECOMMENDATION: Adopt Resolution 81-26, approving Research Proposal 962-80 for funding in an amount not to exceed \$91,676.

SUMMARY: The objective of this study is to identify the critical emission control parameters which influence in-use vehicle emissions. This is to be accomplished by a more detailed investigation of twenty ARB surveillance test vehicles that are found to emit excessive emissions due to unidentified or uncertain causes. The components specified by the ARB will be calibrated and replaced if found to be out of specification. Based on the vehicle examination and literature study, the investigator is to make recommendations regarding certification durability requirements and identify important parameters for emission surveillance and vehicle inspection programs.

A proposal submitted by Systems Control, Inc. was previously recommended by the Research Screening Committee and approved for funding by the Board in Resolution 81-7 dated January 30, 1981. SCI subsequently requested additional funding due to a misunderstanding concerning the scope of work. As a result, the competing proposals were re-evaluated by the Research Screening Committee at its March 20 meeting. After careful consideration and discussion, the Committee decided to withdraw their prior recommendation of SCI and to recommend to the Board the proposal submitted by Olson Engineering, Inc. for funding.

State of California  
AIR RESOURCES BOARD

Resolution 81-27

March 26, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 931-77 entitled "Changes in Lung Function and Chronic Exposure to Oxidants" has been submitted to the Air Resources Board by the University of California at Los Angeles (\$200,000) and the American Lung Association of Los Angeles (\$200,000) for a total of \$400,000; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

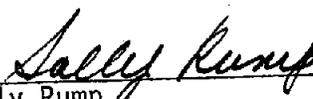
Proposal Number 931-77 entitled "Changes in Lung Function and Chronic Exposure to Oxidants" submitted by the University of California at Los Angeles and the American Lung Association of Los Angeles for an amount not to exceed \$400,000;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 931-77 entitled "Changes in Lung Function and Chronic Exposure to Oxidants" submitted by the University of California at Los Angeles and the American Lung Association of Los Angeles for an amount not to exceed \$400,000,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$400,000.

I certify that the above is a true and correct copy of Resolution 81-27 as passed by the Air Resources Board.

  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-5-3 b.15  
DATE: March 26, 1981

- ITEM: Research Proposal No. 931-77 entitled "Changes in Lung Function and Chronic Exposure to Oxidants".
- RECOMMENDATION: Adopt Resolution 81-27 approving Research Proposal No. 931-77 for funding in an amount not to exceed \$400,000.
- SUMMARY: There is a widely perceived need for information on how long-term, even lifelong, exposure to air pollution affects the health of urban dwellers. Studies to help address this need are difficult to design, organize, perform and interpret, and it is difficult to attract funds for support, owing to the complicated and long-term nature of study protocols.
- Measurements of pulmonary function parameters offer the potential of greater sensitivity in early detection of effects of chronic exposures, but are expensive requiring active recruitment, testing, and follow-up of large numbers of subjects. In such studies, lifestyle, occupation, and community pollution factors can be obtained in the course of a study and then accounted for in the analysis. The preferred type of protocol is referred to as a longitudinal study.
- The longitudinal design is preferable in that the parameters to be studied are obtained from the same individual, by means of retests, over a period of years.
- This procedure allows careful control and study accounting for commonly confounding variables. Few studies of this type have been done in the United States due to cost factors, complexity, and the effort required.
- This proposal requests funds for the continuation and completion of an on-going longitudinal pulmonary function study. Funding is to be derived in part from this agency and in major part from EPA.
- The initial phase of the study, previously called "CORD", was funded by the National Institute of Environmental Health Science to evaluate how

deterioration of lung function might differ among four carefully chosen census tracts from four widely separated Southern California cities. The areas were chosen to determine how various pollutant exposures might be related to chronic obstructive respiratory disease (CORD). Lancaster was chosen to represent a low pollution city. The other cities chosen, which experience differing combinations of oxidant and/or other pollutants were Burbank, Long Beach and Glendora. Approximately 15,000 subjects were recruited for the baseline studies. These were completed about 5 years ago. Complete lifestyle information, residence location and medical information was collected on these subjects.

Complete pulmonary function characterization was also done on the subjects employing an elaborate mobile testing laboratory, the Breathmobile. The 3,000-4,000 subjects for each city were taken from a single census tract near a SCAQMD air monitoring station in or adjacent to that city.

The study team retested residents from Burbank and Lancaster after a 5-year interval from the baseline tests. The next steps, proposed here, require a retest of the Long Beach subjects first, followed by Glendora, the highest oxidant city in the study. This protocol would complete the originally scheduled field work and encompasses analysis of all data collected over the entire study.

This is a critically important study, the only study now under way that can hope to provide data on chronic exposure to photochemical smog. Its scale is well beyond what the ARB research program is able to support alone. For it to be stopped when the field work is 75 percent complete, as nearly happened, is an unacceptable alternative, in our view. Any new study would have to start at ground zero and would require another decade to complete. In summary, ARB's contribution in addition to EPA's funds, will allow completion of study that is potentially of great use to both the Board and EPA in considering the adequacy of current standards for photochemical oxidant and ozone.

State of California  
AIR RESOURCES BOARD

Resolution 81-28

May 4, 1981

WHEREAS, a solicited research Proposal Number 1032-83 entitled, "A Field Study of the Impact of Transport from the South Coast Air Basin on Ozone Levels in the Southeast Desert Air Basin", has been submitted by Meteorology Research, Inc. (\$124,993) with a contribution from the California Institute of Technology (\$124,965) to the Air Resources Board for a total amount not to exceed \$249,958; and

WHEREAS, the Research staff has reviewed and recommended this proposal; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 1032-83 entitled, "A Field Study of the Impact of Transport from the South Coast Air Basin on Ozone Levels in the Southeast Desert Air Basin", submitted by Meteorology Research, Inc. (\$124,993) with a contribution from the California Institute of Technology (\$124,965) to the Air Resources Board for a total amount not to exceed \$249,958; and

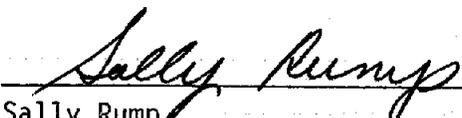
WHEREAS, the Research staff and the Research Screening Committee recommended that separate contracts be awarded to Meteorology Research, Inc. and the participating contractor in order to minimize the cost to the State,

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1032-83 entitled, "A Field Study of the Impact of Transport from the South Coast Air Basin on Ozone Levels in the Southeast Desert Air Basin", submitted by Meteorology Research, Inc. (\$124,993) with a contribution from the California Institute of Technology (\$124,965) to the Air Resources Board for a total amount not to exceed \$249,958; and

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts individually with each of the contractors for the research effort proposed in a total amount not to exceed \$249,958 for both contracts.

I certify that the above is true  
and correct copy of Resolution  
as passed by the Air Resources Board.

  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO.: Mail Ballot  
DATE: May 4, 1981

ITEM: Research Proposal No. 1032-83 entitled, "A Field Study of the Impact of Transport from the South Coast Air Basin on Ozone Levels in the Southeast Desert Air Basin".

RECOMMENDATION: Adopt Resolution 81-28 approving Research Proposal No. 1032-83 for funding in an amount not to exceed \$249,958.

SUMMARY: Pollution from the South Coast Air Basin is transported to both the High Desert and the Low Desert through mountain passes and over the ridge line of the San Gabriel and San Bernardino Mountains. This is substantiated by visual observations of smog cloud movement, by analyses of daily wind patterns, and by contaminants measured at desert receptor areas.

In this study, small amounts of inert chemical tracer gas will be released at selected points in the South Coast Air Basin and the Southeast Desert Air Basin. Air samples will be collected throughout the downwind receptor areas of the Southeast Desert Air Basin and along the mountain slopes and passes ringing the Basin and based on the tracer gas concentrations measured in these samples, the pollutant transport routes will be identified and the impact will be quantified.

The results of this project are needed to assist in the development of control strategies that will permit the achievement of the ambient air quality standard for ozone in the adjacent receptor areas downwind of the South Coast Air Basin.

State of California  
AIR RESOURCES BOARD

Resolution 81-29

March 26, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

WHEREAS, a solicited research Proposal Number 963-80 entitled, "Components Influencing the Deterioration of Vehicle Emission Control Systems" was submitted by Systems Control, Inc. to the Air Resources Board; and

WHEREAS, the Research staff reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee reviewed and recommended this proposal for funding; and

WHEREAS, the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, accepted the recommendation of the Research Screening Committee and adopted Resolution 81-7 dated January 30, 1981 approving the following:

Proposal Number 963-80 entitled "Components Influencing the Deterioration of Vehicle Emission Control Systems" submitted by Systems Control, Inc. for an amount not to exceed \$84,982.

WHEREAS, subsequently Systems Control, Inc. requested additional funding of \$13,461 because of a misunderstanding of the scope of work; and

WHEREAS, competing proposals have been reevaluated by the Research Screening Committee; and

WHEREAS, the Research Screening Committee has reviewed the various proposals and recommends another proposal for funding; and

WHEREAS, Systems Control, Inc. has been advised of the new recommendation; and

WHEREAS, a contract had not been entered into between the Air Resources Board and Systems Control, Inc. for performance of Proposal 963-80.

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board rescind Resolution 81-7.

State of California  
AIR RESOURCES BOARD

ITEM: 81-5-3 b.17  
DATE: March 26, 1981

ITEM: Research Proposal 963-80 entitled, "A Study of Components Influencing the Deterioration of Vehicle Emission Control Systems."

RECOMMENDATION: Adopt Resolution 81-29, rescinding Resolution 81-7, which approved Proposal 963-80 for funding in an amount not to exceed \$84,982.

SUMMARY: This proposal, submitted by Systems Control, Inc., was previously recommended by the Research Screening Committee and approved for funding by the Board in Resolution 81-7 dated January 31, 1981. SCI subsequently requested additional funding, apparently because of a misunderstanding concerning the scope of work. As a result, the competing proposals were re-evaluated by staff and by the Research Screening Committee. After careful consideration and discussion, the RSC decided to withdraw their prior recommendation of SCI and select the proposal submitted by Olson Engineering, Inc. for recommendation to the Air Resources Board.

STATE OF CALIFORNIA  
AIR RESOURCES BOARD

Resolution 81-30

March 26, 1981

*WHEREAS*, Marjorie Evans served as a member of the Air Resources Board with distinction from October 1976 through January 1981;

*WHEREAS*, Marjorie's keen judgment and high ideal of public service have contributed greatly to the work of the Board;

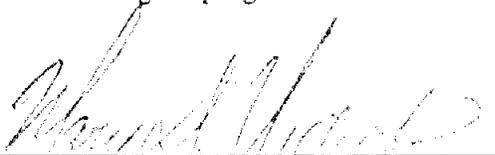
*WHEREAS*, her commitment to clean and healthy air caused her to take a lead role in developing the Board's sulfur dioxide and sulfate ambient air quality standards and resolving a regulatory impasse that had impeded geothermal development;

*WHEREAS*, she demonstrated her special concern for the well-being of Northern Californians by leading the Board into a successful campaign for the continuation of rail commuter service on the San Francisco Peninsula as a means to reduce auto use;

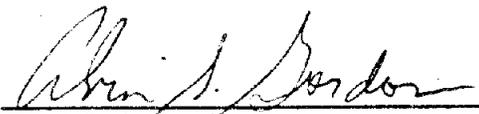
*WHEREAS*, she worked vigorously and persistently to foster mutual respect and understanding between business and community leaders and the members and staff of the Air Resources Board; and

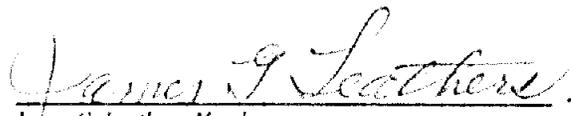
*WHEREAS*, her broad understanding of scientific research and administrative law provided vital assistance in the development of California's air pollution regulatory program.

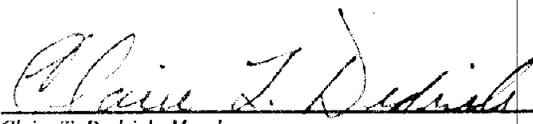
*NOW, THEREFORE BE IT RESOLVED*, that the Air Resources Board extends its deepest appreciation to Marjorie Evans, and expresses its thanks for her contribution to California's political and technological progress toward clean air.

  
\_\_\_\_\_  
Mary D. Nichols, Chairwoman

  
\_\_\_\_\_  
Laurence S. Caretto, Vice-Chairman

  
\_\_\_\_\_  
Alvin S. Gordon, Member

  
\_\_\_\_\_  
James G. Leathers, Member

  
\_\_\_\_\_  
Claire T. Dedrick, Member

State of California  
AIR RESOURCES BOARD

Resolution 81-33

May 21, 1981

Agenda Item No: 81-10-2

WHEREAS, the Air Resources Board ("Board") and the Environmental Protection Agency have established health-based ambient air quality standards for oxidant and ozone, respectively, and for particulate matter, and the Board has established standards for visibility reducing particles, and these standards are frequently violated in several of the State's air basins;

WHEREAS, Health and Safety Code Sections 39003, 39500, 39602, and 41500 authorize the Board to coordinate, encourage, and review efforts to attain and maintain state and national ambient air quality standards;

WHEREAS, Health and Safety Code Sections 39600 and 39605 authorize the Board to act as necessary to execute the powers and duties granted to and imposed upon the Board and to assist the air pollution control districts;

WHEREAS, the Suggested Control Measure for the Control of Emissions of Photochemically Reactive Organic Compounds from Seals on Pumps and Compressors in Refineries was developed by the staffs of the Board and the South Coast Air Quality Management District, and reviewed and approved by a technical review group consisting of representatives of the Environmental Protection Agency, the Air Resources Board, the Bay Area Air Quality Management District, the South Coast Air Quality Management District, and several other air pollution control districts;

WHEREAS, the California Environmental Quality Act and Board regulations require that the Board not take any action which would have adverse environmental impacts unless the Board responds to all significant environmental issues raised and takes all feasible measures to mitigate such impacts;

WHEREAS, the Board has held a duly noticed public meeting on this matter, and heard and considered the comments presented by representatives of the ARB, districts, affected industries, and other interested persons and agencies; and

WHEREAS, the Board finds:

That emissions of photochemically reactive organic compounds from seals on pumps and compressors in petroleum refineries contribute to concentrations of oxidant and ozone and of photochemically generated particulate matter in excess of state and national ambient air quality standards in several of the State's air basins;

That the inspection of seals and seal flush systems and the reduction of leakage to a standard of 10,000 parts per million hexane equivalent, as determined by a prescribed inspection technique, is reasonably available control technology;

That technology to inspect seals and seal flush systems on refinery pumps and compressors in a safe manner is available;

That technology by which the 10,000 ppm performance standard can be met is available and cost-effective;

That in isolated cases, some seals may not be capable of meeting the 10,000 ppm standard with currently available technology and should be allowed exemptions until 1987, by which time the Board believes adequate technology or substitution of equipment to meet the standard will be developed;

That no adverse environmental impacts associated with the proposed Suggested Control Measure have been identified and no potentially significant adverse environmental effects are likely to result from the adoption and implementation of the proposed Suggested Control Measure.

NOW, THEREFORE BE IT RESOLVED, that the Board approves the Suggested Control Measure for the Control of Emissions of Photochemically Reactive Organic Compounds from Seals on Pumps and Compressors in Refineries as set forth in Attachment A to this Resolution with the additions described below.

BE IT FURTHER RESOLVED, that the Executive Officer shall prepare language for appropriate exemptions from this Suggested Control Measure or reduced inspection requirements for pumps in heavy liquid service which are shown to have insignificant emissions and for reciprocating and vertical in-line pumps and submit that language for consideration by the Technical Review Group.

BE IT FURTHER RESOLVED, that, as an alternative to Section III.B. of the attached measure, local air pollution control districts may consider adopting as Section III.B. a provision substantially as follows:

B. The operator shall file with the Air Pollution Control Officer and, except for unscheduled shutdowns, shall comply with a schedule for the inspections required by Section III.A. The schedule shall identify the dates by which inspections shall be completed on each device subject to this rule. The plan may be revised by the operator. Any revisions shall be effective upon filing with the Air Pollution Control Officer.

BE IT FURTHER RESOLVED, that, after review of the revised language by the Technical Review Group, the Executive Officer shall forward the Suggested Control Measure to districts which need reductions in photochemically reactive organic compound emissions to achieve and maintain state or national ambient air quality standards, with a recommendation that these districts consider adoption of the Suggested Control Measure or a similar measure at least as effective as the Suggested Control Measure.

I certify that the above is a true and correct copy of Resolution 81-33, as adopted by the Air Resources Board.

  
Sally Rump, Board Secretary

State of California  
AIR RESOURCES BOARD

SUGGESTED CONTROL MEASURE FOR THE CONTROL OF EMISSIONS  
OF PHOTOCHEMICALLY REACTIVE ORGANIC COMPOUNDS FROM SEALS ON PUMPS  
AND COMPRESSORS IN REFINERIES

I. SCOPE

A. This rule applies to emissions of photochemically reactive organic compounds from seals on pumps and compressors and seal fluid systems in petroleum refineries.

B. This rule shall not apply to pumps handling residual oil from an atmospheric pressure crude oil still or to other oils with higher boiling temperature ranges.

II. DEFINITIONS

background: the registration on a hydrocarbon analyzer sampling at least one meter upwind from a device which is to be inspected.

device: a process pump or compressor which handles a photochemically reactive organic fluid, or a seal fluid system.

leak: a gaseous emission which is from a device and which causes a hydrocarbon analyzer used in accordance with section V to register over 10,000 ppm, as hexane, above background.

parts per million (ppm) as hexane: the registration on a hydrocarbon analyzer when the analyzer is used in accordance with section V.

photochemically reactive organic compound: any compound containing at least one atom of carbon, except: methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and carbonates.

photochemically reactive organic fluid: a fluid (liquid or gas) containing one or more photochemically reactive organic compounds.

process pump: a pump equipped with a driver which has a power rating larger than one horsepower.

seal fluid system: a system which circulates a fluid through or between seals on process pumps or compressors.

working day: any day except Saturdays, Sundays, and employee holidays.

### III. REQUIREMENTS FOR INSPECTIONS OF DEVICES

- A. The operator of a device shall inspect each seal on that device in accordance with section V at least once during each calendar quarter. Operator inspections shall commence during the first calendar quarter following adoption of this rule.
- B. The Air Pollution Control Officer shall be notified of the date of inspection of each device at least 30 days in advance of that date.
- C. All devices with leaks present during the scheduled inspection shall be tagged or marked to be easily identifiable in the field.
- D. Any leak found by the Air Pollution Control Officer within five working days after the date described in subsection III B shall not exceed a registration of 75,000 ppm as hexane on a hydrocarbon analyzer unless the device was tagged or marked as having a leak per subsection III C. Any leak so found shall be subject to Section IV of this rule.
- E. The operator of a process pump which handles a photochemically reactive organic fluid shall observe the seal once every week. The operator shall inspect in accordance with section V any seal from which liquid is emerging.

#### IV. REQUIREMENTS FOR LEAK ELIMINATION

A. Except as provided by sub-sections IV B and IV C, whenever a leak is detected by any person, the operator of the leaking device shall follow the procedures set forth in sub-section IV A 1. or IV A 2., whichever applies.

1. If the device has a designated spare, or if existing piping allows a portable spare device to be put into service without disrupting service, the leaking device shall be shut down within two working days, and, if necessary to stop leakage, isolated by valves. If the spare is put into service, it shall be tested within one working day of its startup for seal leakage in accordance with section V. If the spare also has a leak, neither the original device nor the spare shall be used after 15 working days from the original detection of a leak unless the leak has been eliminated.

2. If there is no designated spare device and no piping to allow the use of a portable spare, the leak shall be eliminated within five working days after startup after the next process unit shutdown which allows shutdown of the device, but in no case later than one year from the date of the original leak detection.

B. Procedures set forth in sub-sections IV A 1, and IV A 2. shall not be required until December 31, 1986, for any pump which has a leak which causes a hydrocarbon analyzer registration less than 75,000 ppm as hexane and which is equipped with double seals or tandem seals and an externally-supplied inter-seal flush operated in a manner deemed by the Air Pollution Control Officer to minimize the leak.

C. The procedures set forth in sub-sections IV A 1. and IV A 2. shall not be required for any device for which the operator demonstrates to the satisfaction of the Air Pollution Control Officer either:

1. that without the contribution to a hydrocarbon analyzer registration of ethane and/or any compound which is not a photochemically reactive organic compound, the registration would be less than 10,000 ppm as hexane, or

2. that the device emits less than 0.4 pound of photochemically reactive organic compounds per hour.

D. The provisions of this section IV shall become effective on July 1, 1983.

#### V. INSPECTION PROCEDURES

A. An instrument used for inspecting seals for leaks shall respond according to the mass concentration of hydrocarbon compounds in air. It shall inspire sample gas at the rate of one liter per minute and shall be calibrated by sampling a reservoir of a known concentration of one hydrocarbon compound in air at atmospheric pressure. The hydrocarbon compound shall be either hexane at the approximate concentration 10,000 ppm by volume or another hydrocarbon at the concentration which would yield the same registration on that instrument as would 10,000 ppm hexane. However, a compound other than hexane may be used only if the instrument manufacturer has certified the response to hexane relative to the response to the other compound.

B. Sampling of a seal shall be performed one centimeter from the outer end of the shaft/seal interface.

C. Sampling of a vent shall be performed in the plane of the vent opening at the centroid.

D. The following modifications shall be made as necessary to make sampling of emissions from devices feasible and safe.

1. Holes shall be cut in safety guards or screens blocking access to the sample point, or

2. a permanent sampling tube of at least 3/16 inch inside diameter shall be installed one centimeter from the outer end of the shaft/seal interface. The downstream end of the sampling tube shall couple with 1/4-inch tubing.

#### VI. RECORDING REQUIREMENTS

The operator of devices or seal fluid systems shall maintain records enabling the Air Pollution Control Officer to identify all leaking devices and non-complying fluid systems and to determine the dates of discovery and the schedules for leak reductions. The records shall be kept for a length of time specified by the Air Pollution Control Officer.

#### VII. SCHEDULE OF COMPLIANCE

Within six months following adoption of this rule, the operator of devices shall make available to the Air Pollution Control Officer a

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Meeting to Consider a Suggested Control Measure for  
the Control of Emissions of Photochemically Reactive  
Organic Compounds from Seals on Pumps and Compressors  
in Refineries

Agenda Item No. 81-10-2

Public Hearing Date: May 21, 1981

Response Date: May 21, 1981

Issuing Authority: Air Resources Board

Comment: No significant environmental issues were identified at the  
hearing or by the staff.

Response: N/A

Certified:

Sally Rump  
Board Secretary

Date:

8/21/81

RECEIVED BY  
Office of the Secretary  
AUG 21 1981  
resources Agency of California

# Memorandum

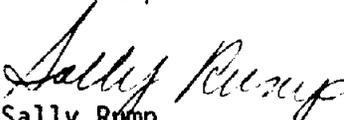
To : Huey D. Johnson  
Secretary  
Resources Agency

Date : April 6, 1981

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

From : **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 decision and response to environmental comments raised during the comment period.

  
Sally Rump  
Board Secretary

attachments:  
Resolution 81-33

RECEIVED BY  
Office of the Secretary

AUG 21 1981

Resources Agency of California

State of California  
AIR RESOURCES BOARD

Resolution No. 81-34

April 23, 1981

Agenda Item No: 81-7-1

WHEREAS, Health and Safety Code Section 39601 authorizes the Air Resources 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 39801 requires the Board to administer, pursuant to Chapter 5 (commencing with Section 39800) Part 2, Division 26, of the Health and Safety Code, the Air Pollution Control Subvention Program with such funds as may be appropriated to it for the purposes of said Chapter;

WHEREAS, Health and Safety Code Sections 39800 through 39811 establish the framework and requirements of the Air Pollution Subvention Program;

WHEREAS, the Board has previously adopted regulations implementing the subvention program in Sections 90100 through 90500 of Title 17, California Administrative Code;

WHEREAS, Assembly Bill 1473 (Statutes 1980, Ch. 176) effective January 1, 1981, amended Health and Safety Code Section 39806 to delete the requirements that in order for a district to receive subvention funds it must be "actively and effectively" engaged in a program to reduce air pollution, and to provide for the establishment of criteria for the evaluation of local air pollution district programs;

WHEREAS, Section 90115 of Title 17, California Administrative Code provides for classification of districts by category pursuant to Section 90100(e), adoption of program objectives ("evaluation criteria") appropriate for such categories, and annual consideration of revisions to the classifications and criteria;

WHEREAS, ARB staff have cooperated with district staff and the California Air Pollution Control Officers Association in preparing recommended evaluation criteria for the 1981-82 fiscal year;

WHEREAS, the California Environmental Quality Act and ARB regulations require that an activity not be adopted as proposed where significant adverse environmental impacts have been identified and feasible alternative and/or mitigation measures which would substantially reduce these impacts exist;

WHEREAS, the Board finds that it is necessary to amend various provisions in Sections 90100 through 90500, Title 17, California Administrative Code to (1) conform the regulations to the provisions of AB 1473, particularly by eliminating references to an "active and effective" local district program and changing the term "program objective" to "evaluation criteria"; (2) assure timely payments to the districts, by providing for a "disbursement request" for earlier payment of funds; (3) eliminate unnecessary paperwork by eliminating the requirements for submittal of interim reports; (4) make various minor technical changes; and (5) to establish evaluation criteria and classifications for the 1981-82 fiscal year;

WHEREAS, the Board finds that the regulations set forth in attachments A, B, and C would have no significant adverse environmental impacts and, therefore, no alternatives and/or mitigation measures are required; and

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;

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby amends its regulations in Subchapter 3, Chapter 1, Part III, Title 17, California Administrative Code (Sections 90100 through 90500) as set forth in Attachment B hereto;

BE IT FURTHER RESOLVED, that the Board adopts "District Subvention Categories" as set forth in Attachment A hereto;

BE IT FURTHER RESOLVED, that the Board adopts the "Evaluation Criteria for Air Pollution Control Districts Participating in the Subvention Program", as set forth in Attachment C hereto; and

BE IT FURTHER RESOLVED, that the Board directs the Executive Officer in cooperation with the California Air Pollution Control Officers' Association to establish a joint committee to recommend refinements of the subvention evaluation criteria and program evaluation procedures; such recommendations shall be considered by the Board for incorporation into the subvention regulations beginning fiscal year 1982-83.

I certify that the above is a true and correct copy of Resolution 81-34 as adopted by the Air Resources Board.

  
Sally Rump  
Board Secretary

ATTACHMENT A

DISTRICT SUBVENTION CATEGORIES

ADOPTED: APRIL 23, 1981

CATEGORY I

Large Urban

SCAQMD  
BAAQMD  
San Diego

CATEGORY II

Small Urban

Ventura  
Fresno  
Monterey  
Kern  
San Joaquin  
Santa Barbara  
Stanislaus  
Sacramento

CATEGORY III

Rural

Great Basin  
Lake  
Amador  
Calaveras  
El Dorado  
Mariposa  
Nevada  
Placer  
Plumas  
Sierra  
Tuolumne  
Del Norte  
Humboldt  
Mendocino  
Northern Sonoma  
Trinity  
Lassen  
Modoc

Siskiyou  
San Luis Obispo  
Imperial  
Butte  
Colusa  
Glenn  
Sutter  
Tehama  
Yolo-Solano  
Yuba  
San Bernardino (SEDAB portion only)  
Los Angeles (SEDAB portion only)  
Kings  
Madera  
Merced  
Tulare  
Shasta

Subchapter 3. SUBVENTIONS

Article 1. GENERAL PROVISIONS

90100. Definitions. (a) "Air Basin" means a region within California as defined in Article 1 (commencing with Section 60100), Subchapter 1 of this Chapter.

(b) "Air pollution control program" means the aggregate of all of the activities within a district or in support of a district's effort to control air pollution and to fulfill its obligations under the law.

(c) "Board" means the State Air Resources Board, or any person authorized to act in its behalf.

(d) "Basinwide air pollution control plan" means the plan prepared and submitted by the control council of each air basin, or, where one district includes an entire air basin, by such district, as approved by the Air Resources Board pursuant to Section 41600, 41500, or 41602 of the Health and Safety Code.

(e) "Category" means a level in which a district will be classified for the purpose of establishing ~~program objectives~~ evaluation criteria. Criteria considered in determining the classification of districts will include: urban or rural nature of the district, population, emissions, violations of ambient air quality standards, size of the district program, and subvention funding levels.

The categories for districts are:

- (1) "Large urban district";
- (2) "Small urban district";
- (3) "Rural district".

(f) "Control Council" means a basinwide air pollution control council established pursuant to Section 40900 of the Health and Safety Code.

(g) "Disbursement Request" means a document, submitted in a format approved by the Executive Officer, which may be submitted prior to the subvention application by the district and which contains the information required in a subvention application except for an approved budget for the year for which the subvention is approved.

~~(g)~~ (h) "District" means a county air pollution control district, regional air pollution control district, unified air pollution control district, the Bay Area Air Pollution Control Quality Management District, or the South Coast Air Quality Management District as provided for in Section 40200 and 40410, respectively, of the Health and Safety Code.

~~(h)~~ (i) "Dollars budgeted" means monies derived from revenue sources within a district for use in the district's air pollution control program as shown in the district's adopted budget and subvention application.

~~(i)~~ (j) "Executive Officer" means the Executive Officer of the Air Resources Board.

~~(j)~~ (k) "Fiscal year" means the 12-month period from July 1 of one year through June 30 of the following year.

~~(k)~~ (l) "Implementation program" means a district's program to implement the basinwide air pollution control plan.

~~(l)~~ (m) "Quarter" means any three month period ending March 31, June 30, September 30, or December 31.

~~(m)~~ (n) "Quorum" means

- (1) more than one-half of the total membership; or
- (2) one-half of the total membership if all the districts in the basin have agreed by formal resolution to abide by the actions of such a quorum; such resolutions may specify that such actions must be unanimous.

~~(n)~~(o) "SB 90 population data" means population data, as of January 1 of the fiscal year preceding the subvention year, compiled by the Department of Finance in compliance with Section 2227 of the Revenue and Taxation Code.

~~(e)~~(p) "Subvention" means funds granted to a district by the State, as authorized by Chapter 5, Part 2, Division 26 of the Health and Safety Code, for financial assistance to the district's air pollution control program.

~~(p)~~(q) "Subvention application" means an application received or postmarked between May 1 of the preceding subvention year and September 30. A complete subvention application shall be based on the district's budget and program as adopted by the district's air pollution control board and shall include a copy of the approved budget. The amount of subvention requested in an application shall be based on SB 90 population data.

~~(q)~~(r) "Subvention year" means the fiscal year for which a subvention is to apply.

90110. Types of Subventions. (a) "Coordinated subvention" means a subvention authorized by Section 39802 of the Health and Safety Code; such a subvention may be granted to a district participating in a coordinated basinwide program as described in Section 90120 of these regulations. A coordinated subvention may be granted to a qualifying district on a matching fund basis up to one subvention dollar (\$1) for each one dollar (\$1) budgeted by the district. The amount of a coordinated subvention shall not be less than eighteen thousand dollars (\$18,000) for any district, if the district provides the required matching funds and

insofar as adequate funds are available, and shall not exceed the amount authorized by Section 39802 of the Health and Safety Code unless that amount is increased by the Executive Officer on behalf of the Board after receiving written approval of the greater amount from the Director of Finance pursuant to Section 39805 of the Health and Safety Code.

(b) "Individual subvention" means a subvention authorized by Section 39803 of the Health and Safety Code; an individual subvention may be granted to each qualifying district on a matching fund basis of up to two subvention dollars (\$2) for each three dollars (\$3) budgeted by the district. The amount of an individual subvention shall not be less than twelve thousand dollars (\$12,000) for any district, if that district provides the required matching fund, and shall not exceed the amount authorized by Section 39803 of the Health and Safety Code, unless that amount is increased by the Executive Officer on behalf of the Board after receiving written approval of the greater amount from the Director of Finance pursuant to Section 39805 of the Health and Safety Code.

(c) "Special subvention" means a subvention authorized by Section 39804 of the Health and Safety Code; such a subvention may be granted to a district participating in a coordinated basinwide program as described in Section 90120 of these regulations and lying in an air basin whose population is less than 98,000, if for 1975-76 and subsequent fiscal years, the dollars budgeted by each district in the air basin are equal to or greater than the amount specified in Section 39804 of the Health and Safety Code. If the ~~\$45,000~~ funding limit specified in Section 39804 of the Health and Safety Code is increased pursuant to Section 39805 of the Health and Safety Code, the local per capita funds budgeted by the

district must be increased by the same proportion. The sum of the special subventions to be granted, for said fiscal years, to all of the districts in an air basin will not exceed the difference between the maximum amount authorized by Section 39804 of the Health and Safety Code, unless that amount is increased by the Executive Officer on behalf of the Board after receiving written approval of the greater amount from the Director of Finance pursuant to Section 39805 of the Health and Safety Code, and the rate authorized in Section 39804 of the Health and Safety Code multiplied by the basin population. The sum of the special subventions to be granted to the districts in an air basin shall be prorated according to population among the districts in the air basin.

(d) "Supplemental subvention" means a subvention authorized by Section 39810 of the Health and Safety Code; a district may receive a supplemental subvention on a matching fund basis of up to one subvention dollar (\$1) for each one dollar (\$1) budgeted by the district. Dollars budgeted by the district which are needed to qualify for a coordinated, individual, or special subvention, may not be used to qualify for a supplemental subvention. A supplemental subvention shall not be approved for any district which has not, for the same fiscal year, been granted a coordinated, individual, or special subvention.

90115. Program Objectives Evaluation Criteria. The Board shall classify districts by category pursuant to Section 90100(e) of this subchapter. The ARB staff shall develop in cooperation with the districts and the Board shall adopt program objectives appropriate for such categories which shall constitute the definition of active and effective program pursuant to Section 39806 of the Health and Safety Code evaluation criteria for each category which are appropriate to determine, in accordance with Section 39806 of the Health and Safety Code, whether

districts are engaged in the reduction of air contaminants pursuant to the basinwide air pollution control plan and related implementation programs. Following cooperation between ARB and district staff in proposing recommendations, the Board shall hold a public hearing annually in the first quarter of the calendar year to consider revisions of the district classifications and program objectives evaluation criteria. The district classifications are set forth in the Air Resources Board's "District Subvention Categories" adopted on April 23, 1981. The evaluation criteria are set forth in the Air Resources Board's "Evaluation Criteria for Air Pollution Control Districts Participating in the Subvention Program" adopted on April 23, 1981.

90120. Coordinated Basinwide Program. A district satisfying either of the following conditions will be considered to be participating in a coordinated basinwide program, provided that when a district lies in more than one air basin, only the portion(s) of the district which satisfies either of these conditions shall be considered to be participating in such a program.

(a) A district which includes an entire air basin.

(b) Two or more districts which together include an entire air basin, and which meet the following requirements:

(1) The rules and regulations except for administrative procedures are uniform among all districts and are consistent with the approved nonattainment plan for each district's area. For any air basin

where the control council has determined that equivalent rules and regulations throughout the entire air basin are not necessary for uniformity, the control council may divide the air basin into zones within which equivalent rules and regulations will be required. For the purposes of this subsection, equivalent rules and regulations means rules and regulations which effect the same degree of control. In establishing such zones, the control council shall consider topography, meteorology, population distribution, and air quality;

(2) The control council shall meet as often as necessary for the transaction of business, but not less than once per quarter except as provided for below. The control council of any air basin consisting solely of districts in the rural category may establish an equivalent procedure for basinwide consideration of policy matters and shall meet within 30 days after it has been requested to meet by the Executive Officer or by a member of the council. For the purposes of this Subdivision a quorum must be present in order to constitute a meeting; copies of the minutes of each meeting shall be submitted to the Executive Officer within 30 days after the date of the meeting; and

(3) The districts shall be parties to one joint powers agreement or other enforceable agreement acceptable to the Executive Officer. The agreement shall specifically provide for the following:

(A) The sharing of qualified air pollution personnel and equipment in a manner which results in the effective use of the basinwide resources and ensures that all districts in the air basin will maintain an active and effective a program satisfying the applicable evaluation criteria program objectives;

(B) Interdistrict coordination of activities including enforcement; air monitoring; engineering; and, if required by the State Implementation Plan, traffic and land use planning; and

(C) Implementation of the State Air Pollution Emergency Plan, where applicable.

Article 2. APPLICATION PROCEDURES

90200. (a) Subvention Application. An application for subvention shall be submitted to the Executive Officer on forms approved by the Executive Officer, with a resolution or minute order from the district's air pollution control board authorizing such application.

(1) A subvention application shall include a description of the district's adopted budget and program, and the program objectives adopted pursuant to Section 90115 for the subvention year.

(2) Estimates of the subvention to which the district is entitled shall be based on SB 90 population data.

(3) The Executive Officer shall approve or disapprove all complete applications by November 15. Approval shall only be granted insofar as funds are available.

(4) In the event that the total subventions requested exceed the total allocation that is available, the Executive Officer shall prorate the funds available among all the districts.

(5) A district submitting a subvention application for a coordinated or a special subvention shall, when such a district is in an air basin comprising two or more districts, submit a copy of its application to the control council.

(b) An application for a supplemental subvention shall contain the following information:

(1) The proposed expenditures related to the supplemental subvention; if application is made at the time the district is applying for its regular subvention, which the proposed expenditures shall be shown on the district's proposed budget for the subvention year;

(2) A detailed explanation of the purpose of the requested supplemental subvention, and the benefits which are expected to result; and

(3) The length of time required to complete the work proposed, and the total cost of the project.

90208. Accomplishing Objectives. If a district receiving a subvention determines that it will be unable to accomplish the applicable ~~objectives~~ evaluation criteria adopted pursuant to Section 90115, the district shall so notify the Executive Officer in writing within 30 days after it makes such determination.

90210. Application Revision. A district may revise or amend its application at any time prior to June 30 of the subvention year.

### Article 3. APPLICATION PROCESSING

90300. Notification of Receipt of Application. The Executive Officer shall acknowledge receipt of all subvention applications, including revisions, within 30 days.

90310. Factors to be Considered in the Review of Applications for Coordinated, Individual, and Special Subventions. The primary factor to be considered in the review of an application for a coordinated, individual, or special subvention is the district's ~~attainment of~~ operation of a program meeting the applicable objectives evaluation criteria adopted pursuant to Section 90115.

90320. Factors to be Considered in the Review of Applications for Supplemental Subventions. An application for a supplemental subvention will be evaluated and ranked according to priority by the Executive Officer. Supplemental subventions will be awarded, insofar as funds are available, for those proposals having the highest priorities.

90330. Application Disapproval. (a) A district's application for a coordinated, individual, or special subvention may be disapproved by the Executive Officer if after consulting with the district it is found that:

(1) The district does not propose a program sufficient to meet the applicable ~~objectives~~ evaluation criteria adopted pursuant to Section 90115; or

(2) The district is not operating a program sufficient to ~~attain~~ meet the applicable ~~objectives~~ evaluation criteria adopted pursuant to Section 90115.

(b) If an application is disapproved, the Executive Officer shall state the reason(s) in writing to the district within 15 days of the disapproval.

(c) Districts may appeal Executive Officer action taken pursuant to this section in accordance with Section 90500.

(d) The Executive Officer shall not approve an application for a special coordinated subvention unless the joint powers agreement or other enforceable agreement required pursuant to Section 90120(b)(3) has been received.

90360. Disbursement of Funds. Each subvention is to be disbursed in accordance with the following:

(a) Upon annual appropriation by the Legislature, the Executive Officer shall request the State Controller to disburse one half (1/2) of the appropriate subvention as estimated by the Executive Officer.

(b) Districts classified as either category 1 or category 2 districts under Section 90100(v) shall, by January 15, of the subvention year, submit an interim report covering the period from July 1 through November 30 of the subvention year and by August 15, following the subvention year, shall submit a final report for the remainder of the year.

(b) Districts which are unable to submit a complete subvention application to the ARB by June 30 of a given year may submit a disbursement request by June 30 of the same year. Upon approval of the Executive Officer, he or she shall request disbursement as described in Section 90360(a).

(c) Districts classified as category-3 districts shall submit by August 15 following the subvention year, a final report covering the subvention year.

(d) Six months after Legislative appropriation, the Executive Officer ARB shall request the State Controller to disburse the remainder of the approved subvention unless, after review of the district's program, the Executive Officer finds that the district is not engaged in a program to meet the applicable objectives evaluation criteria adopted pursuant to Section 90115, for reasons that are not expected to be easily resolved, and invokes the provisions of Article 4 of this Subchapter.

(e) All subvention funds not expended or encumbered by the district during the subvention year shall be returned to the Air Resources Board and such funds shall revert to the State General Fund.

(f) A county district shall maintain a separate account for receipts, expenditures, and funding of the district in accordance with accounting procedures acceptable to the State Controller's Office.

Article 4. WITHHOLDING AND RECOVERY OF SUBVENTIONS AND BOARD OPERATION OF DISTRICT PROGRAMS

90400. Withholding and Recovery of Funds. (a) The Executive Officer may review the programs and expenditures of each district receiving a subvention under the provisions of this Subchapter. If such a review discloses that the dollars budgeted or the subvention moneys granted are not being expended substantially in accordance with the application on which the subvention was based, or that the district is not engaged in a program to attain meet the applicable objectives evaluation criteria adopted pursuant to Section 90115, the Executive Officer may, after hearing, take any or all of the following actions:

- (1) Cease all or part of any further payments of the current fiscal year's subvention;
- (2) Withhold all or part of any future subventions; and
- (3) Bring a legal action against the district to recover monies disbursed for that fiscal year.

(b) The Executive Officer may reduce a coordinated subvention or a special subvention to an individual subvention if it is found that the provisions of Section 90120 for a coordinated basinwide program are no longer being carried out.

(c) Action by the Executive Officer to withhold, recover, or reduce funds pursuant to this section are subject to the provisions of Article 5 of this subchapter.

90410. Board Operation of District Air Pollution Control

Programs. (a) The Executive Officer may utilize monies which have been subvened or would otherwise be subvened to a district, and such other monies as may be available, to carry out a district's air pollution control program or any segment of such a program. Such action may be initiated:

- (1) At the request of the district; or
- (2) When the Board has determined, pursuant to Sections 39806, 41500 or 41502 of the Health and Safety Code that the district is not engaged in a program to meet the applicable ~~objective~~ evaluation criteria adopted pursuant to Section 90115.

(b) If the Board has performed services for a district, funds to defray the cost of such services may be deducted from subsequent disbursement of the district's subvention.

(c) If sufficient subvention funds are not available to cover the cost of such services, the district may be billed for such services. In no event shall the charge for such services exceed the district's approved subvention.

Article 5. APPEALS

90500. Appeal Procedures. (a) Review of any decision of the Executive Officer made pursuant to the provisions of this Subchapter may be requested by filing a petition with the Board within thirty (30) days of the date upon which the district was notified of such decision.

(b) The Board shall hold a public hearing at its first regularly scheduled Board meeting at least 60 days after receiving a petition as provided for by Subdivision (a) of this section.

(c) Notification of the public hearing shall be given to the district and to the appropriate control council at least forty-five (45) days before such a public hearing.

(d) The Executive Officer, district representatives, and any interested persons may comment on the district's appeal at such a public hearing.

## ATTACHMENT C

### EVALUATION CRITERIA FOR AIR POLLUTION CONTROL DISTRICTS PARTICIPATING IN THE SUBVENTION PROGRAM ADOPTED: APRIL 23, 1981

#### BASIC AND DETAILED ELEMENTS<sup>1</sup>

NOTE: Evaluation criteria for emission inventory elements have two options available to the Districts. Evaluation Criterion A (1) was developed through the Emissions Inventory Technical Advisory Committee and Evaluation Criterion A (2) is similar to last year's program objectives. For FY 1981-82, Districts may choose either criteria under which to operate their emission inventory programs. Whichever criteria the District selects, the District shall operate an emissions inventory under that element for the entire year.

#### EVALUATION CRITERION A(1) EMISSION INVENTORY BASIC ELEMENTS:

1. Assist the State in fulfilling federal requirements for emission data and in maintaining a current, accurate, comprehensive inventory of all pollutants subject to state or federal regulation.
2. Update the District's point source inventory<sup>2</sup> to reflect those significant emission changes which:
  - a) Contribute to reasonable further progress (RFP) toward attainment of ambient air quality standards;
  - b) Document District activities to reassess emissions from point sources (such as source inspections, engineering evaluations, or source tests);
  - c) Are required by 40 CFR 51.321;
  - d) Result from any point source starting or ceasing operation;
  - e) Result from a change in activity occurring at a facility (for example, a change from one-shift to two-shift operation or a change in energy consumption);
  - f) Result from a rule change or permit condition.

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<sup>1</sup> Basic Elements apply to all Districts. Detailed Elements apply to Large Urban and Small Urban Districts only unless otherwise noted.

<sup>2</sup> The point source inventory includes data for all facilities that emit more than 25 tons per year of TSP, TOG, SO<sub>x</sub>, or NO<sub>x</sub>; 250 tons per year of CO; or 5 tons per year of lead. Individual emission points within a facility are to be identified separately if they emit more than 25 tons per year of lead. Smaller emission points may be aggregated within a source category (e.g., same source classification code.)

Updated information to represent calendar year 1981 shall be provided to ARB by May 1, 1982.

Turnaround documents for updating point source data, similar to those developed for the 1979 inventory, will be available for District use. Districts operating their own data systems may submit 1981 update data in EIS/P&R format or in any alternative format that the ARB and the District mutually agree upon.

#### DETAILED ELEMENT

Assist the State to update area source emission estimates to reflect emissions in 1981 for area source categories where estimated emissions changed from prior estimates by either 100 tons per year or 0.5% of the county-wide emissions for each pollutant. The changes may result from:

- 1) New controls implemented
- 2) New or better District information.

Updated data and documentation shall be provided to the ARB by June 1, 1982.

Alternative criteria may be used provided ARB agrees they are adequate for fulfilling the inventory update goals. One alternative that is acceptable is to update area source emission estimates for source categories whose emissions exceed either 100 tons per year or one percent of the county-wide emissions for each pollutant.

Turnaround documents for updating area source data will be available for District use.

#### SPECIAL APPLICATION:

This detailed element also applies to those rural Districts within nonattainment areas.

#### EVALUATION CRITERION A(2) - EMISSION INVENTORY

##### BASIC ELEMENTS:

1. Assist the state in fulfilling federal requirements for emission data and in maintaining a current, accurate, comprehensive inventory of all pollutants subject to state or federal regulation.
2. Review and update inventory data for all facilities within the District's jurisdiction that emit more than 25 tons per year of TSP, TOG, SOx, or NOx; 250 tons per year of CO; or 5 tons per year of lead. Individual emission sources within the facility shall be separately identified if they emit more than 25 tons per year of TSP, TOG, SOx, or NOx; 250 tons per year of CO; or 5 tons per year of lead. Smaller sources at a facility may be aggregated within a

source category (e.g., same Source Classification Code). Updated information to represent calendar year 1981 shall be provided to the ARB by May 1, 1982.

- a) emissions from the facility change from the most recently submitted data by more than 5% and by more than 5 tons per year; or
- b) separately identified sources have a change in status (e.g., change in compliance; begin or cease operation).

#### DETAILED ELEMENT:

Assist the state in the update of area source emission estimates to reflect emissions for 1981 where emissions in a category have changed by more than 5% and by more than 5 tons per year as a result of:

- a) controls implemented in 1981; or
- b) availability of better District information.

Updated data and documentation for District estimates should be provided to the ARB by June 1, 1982.

All data shall be provided in a format acceptable to the ARB after consultation with the District. Turn-around documents for updating point source data, similar to those developed for the 1979 inventory, will be available for District use.

#### SPECIAL APPLICATION:

This detailed element also applies to those rural Districts within the nonattainment areas.

#### EVALUATION CRITERION B - STATIONARY SOURCE CONTROLS

##### DETAILED ELEMENTS:

1. For rules required by the 1979 NAP, track the development of suggested control measures so that public hearings can be scheduled for the District to consider adoption of rules to implement such measures without duplicating the work done to develop the measures.
2. Within 120 days after the ARB has transmitted to the District a suggested control measure with a request that the District consider it for adoption, hold a public hearing to consider adoption of those rules which are required either to attain a National Ambient Air Quality Standard or as part of an SIP revision.

#### SPECIAL APPLICATION:

Detailed Element 1 also applies to the following rural Districts: El Dorado, Imperial, Kings, Los Angeles, Madera, Merced, Placer, San Bernardino, San Luis Obispo, Tulare, and Yolo-Solano.

Detailed Element 2 also applies to the following rural Districts: El Dorado, Kings, Los Angeles, Madera, Merced, Placer, San Bernardino, Tulare, and Yolo-Solano.

3. (For Districts in air basins having control councils and covered by 1 and/or 2), the District will take action as may be necessary to ensure that the Control Council has had an opportunity to consider rules covered by Detailed Elements 1 and 2 so that the Council's position can be considered at the District's public hearings.
4. During the 1981-82 fiscal year, inspect bulk plants once and terminals located in the District at least twice, and during the 1981-82 fiscal year the District will observe bulk drops equivalent to 5% of the total number (or an alternative which is acceptable to ARB) of Stage I installations on underground storage tanks once on a random selection basis.
5. During the 1981-82 fiscal year, the District will inspect all stations where complaints indicate some sort of malfunction, reinspect those stations where malfunctions or poor maintenance were detected, and other stations on a random basis. The total number of inspections shall equal at least 25% of the station population for the District.

#### SPECIAL APPLICATION:

Detailed Element 4 applies to the following rural Districts: Kings, Madera, Merced, Placer, San Luis Obispo, Tulare, and Yolo-Solano.

Detailed Element 5 applies to the following rural Districts: Kings, Madera, Merced, Tulare, and Yolo-Solano. It does not apply to the Small Urban Monterey Bay Unified APCD.

#### EVALUATION CRITERION C - AIR QUALITY MONITORING

##### BASIC ELEMENTS:

1. Districts that operate any station designated by the ARB as a proposed State and Local Air Monitoring Station (SLAMS) shall have an air monitoring program plan which includes procedures and time tables for implementing federal monitoring, quality assurance, and data reporting regulations (40 CFR Part 58, May 10, 1979).

2. Submit to the ARB monthly for all air monitoring sites at which air monitoring has been conducted for a consecutive period of three months or longer, all gaseous, tape sampled particulate (AISI), and high volume sampled total suspended particulate matter air monitoring data either: (1) on forms prescribed by the ARB within 21 days after the end of the month in which the data were collected, or (2) on computer magnetic tape or key punch cards with computer printout sheets within 45 days after the end of the month in a format approved by the ARB. "Variable" and "Method" codes, and site identification codes shall conform to the ARB's latest codes. Notwithstanding the foregoing, submit to the ARB data for lead, sulfate, and nitrate, and for organic analyses of high volume filters within 45 days after the end of each month in which the data were collected, in the format and using the codes specified above.

3. Documentation of Nondistrict Monitoring

Advise the ARB in writing on a quarterly basis of known air quality surveillance operations conducted within the District's jurisdiction by parties other than the District or the ARB. This information should include the name and address of the party or parties conducting such monitoring and the nature of the monitoring project.

#### DETAILED ELEMENTS: SPECIAL APPLICATION:

Detailed elements 1, 2, and 3 apply to the large urban Districts only.

1. In accordance with the timetable established in the District's monitoring plan, meet all federal requirements for a "reporting organization" as defined in 40 CFR Part 58, and submit to the ARB and the EPA quarterly and annual reports for precision and accuracy estimates for all ambient air quality data.
2. Participate in the ARB's performance audit program for selected pollutants at selected sites. Such audits shall be scheduled with District concurrence to assure minimal disruption of the District's ongoing monitoring activities.
3. Conduct an annual review of SLAMS, National Air Monitoring Station (NAMS), and Special Purpose Monitoring (SPM) monitoring programs and, with ARB concurrence, make the necessary changes to the SLAMS monitoring program (including site upgrade or relocation) to meet the ongoing monitoring requirements of the SIP.

#### SPECIAL APPLICATION:

Detailed elements 4 and 5 apply only to those small urban and rural Districts that operate air monitoring analyzers and samplers.

4. Conduct all activities, including collocated high-volume sampling, bi-weekly precision tests, as are necessary and required to determine and report individual analyzer and sampler precision estimates, and agency precision estimates for each criteria pollutant measured under the SLAMS/NAMS network. Prepare and submit to the ARB quarterly and annual reports for data precision.

5. Participate in the ARB's performance audit program at all District-operated SLAMS and NAMS.

#### EVALUATION CRITERION D - ATTAINMENT PLANNING

##### BASIC ELEMENTS:

Participate in the development, adoption, and implementation of air quality plans required to achieve and maintain state and federal ambient air quality standards.

##### DETAILED ELEMENTS:

1. Complete those technical work products necessary for an approvable 1982 NAP (i.e., emission inventory and projections, air quality analyses, air quality monitoring, stationary and area source control measures).
2. Work with the appropriate local and state agencies to develop those coordinative mechanisms (e.g., MOUs, resolutions) necessary to insure the development, adoption, and implementation of an approvable 1982 NAP.
3. Submit (or work with the NAP lead agency to submit) to ARB by July 1, 1982 the second annual report on NAP implementation of maintenance of Reasonable Further Progress.

#### EVALUATION CRITERION E - PREVENTION OF SIGNIFICANT DETERIORATION

##### BASIC ELEMENT:

Consider adoption of the New Source Review/Prevention of Significant Deterioration (NSR/PSD) rule being jointly developed by ARB and CAPCOA as a Suggested Control Measure.

#### EVALUATION CRITERION F - California Environmental Quality Act (CEQA) REVIEWS

##### BASIC ELEMENT:

Review and comment upon the air quality impacts of proposed major private and public projects in accordance with the (CEQA) to the extent resources are available to the District.

##### DETAILED ELEMENTS:

In cooperation with ARB staff:

1. Continue to investigate simplification of the process for preparing air quality impact analysis in CEQA statements;

2. Review for and urge consistency between proposed project and adopted NAP; and
3. Recommend and urge emissions and air quality mitigation when needed.

EVALUATION CRITERION G - PUBLIC INVOLVEMENT/PARTICIPATION

BASIC ELEMENT:

Encourage and provide for public involvement participation in developing and implementing District policies and programs.

DETAILED ELEMENTS:

1. Solicit active public involvement in the development of rules and regulations and in the development, adoption, and implementation of the NAP.
2. Establish and/or maintain a program to inform citizens of the extent and nature of the air pollution problem in the District.

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider Amendments to Title 17, California Administrative Code, Regarding the Air Resources Board's Subvention Program and to Adopt Local District Program Objectives and Classifications for the 1981-82 Fiscal Year.

Public Hearing Date: April 23, 1981

Response Date: April 23, 1981

Issuing Authority: Air Resources Board

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

Response: N/A

CERTIFIED:

*Sally Rump*  
Board Secretary

Date:

*June 22, 1981*

RECEIVED BY  
Office of the Secretary

JUN 22 1981

Resources Agency of California

# Memorandum

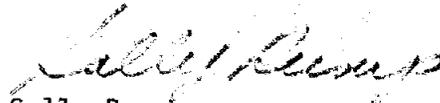
Huey D. Johnson  
Secretary  
Resources Agency

Date : June 22, 1981

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

From : 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 decision and response to environmental comments raised during the comment period.

  
Sally Rump  
BOARD SECRETARY

att. Res. 81-11  


RECEIVED BY  
Office of the Secretary

JUN 22 1981

Resources Agency of California

State of California  
AIR RESOURCES BOARD

Resolution 81-35

April 23, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, a solicited research Proposal Number 1027-82 entitled, "A Characterization of Hazardous and Toxic Waste Materials Disposed of in California," has been submitted by the Science Applications, Inc. to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 1027-82 entitled, "A Characterization of Hazardous and Toxic Waste Materials Disposed of in California," submitted by the Science Applications, Inc. for an amount not to exceed \$199,903.

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1027-82 entitled, "A Characterization of Hazardous and Toxic Waste Materials Disposed of in California," submitted by the Science Applications, Inc. for an amount not to exceed \$199,903.

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$199,903.

I certify that the above is a true  
and correct copy of Resolution 81-35  
as passed by the Air Resources Board..

  
\_\_\_\_\_  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO.: 81-6-3b1  
DATE: April 22, 1981

ITEM: Research Proposal No. 1027-82 entitled, "A Characterization of Hazardous and Toxic Waste Materials Disposed of in California".

RECOMMENDATION: Adopt Resolution 81-35 approving Research Proposal No. 1027-82 for funding in an amount not to exceed \$199,903.

SUMMARY: Disposal of hazardous and toxic waste materials, whether at the site where they are generated or at a centralized facility, creates a potential for the release of air pollutants. In California, an assessment of the environmental impact of these pollutants is hampered by a lack of reliable data on the nature, source and quantity of these wastes. Accordingly, the staff, in consultation with representatives of the Water Resources Control Board, the Solid Waste Management Board, the Department of Water Resources and Health Services and the Office of Appropriate Technology, prepared a Request for Proposals for a study to provide necessary data. The information to be produced by the study will be used by all of these agencies.

The objectives of this research proposal are to identify and quantify the toxic and hazardous waste materials generated in California (90 percent of the generated wastes are disposed of on-site); to verify by limited chemical testing the nature of these waste materials; to identify the potential for airborne emissions from these wastes and estimate possible health effects on exposed population; and to evaluate the present and potential disposal methods for these wastes, with emphasis toward on-site disposal.

The Contractor will identify generator sources and quantify waste materials using information culled from a number of data bases; relate waste by industry types according to Standard Industrial Classification Codes (SICs) and industrial processes by Source Classification Codes (SCCs); estimate the potential contribution of individual waste stream to air pollution; relate toxicity of airborne emissions to TLV standards; and rank the toxic materials according to dosage required to produce harmful health effects. This scale will be based on EPA's Multimedia Environmental Goals publication which gives estimated permissible concentrations of pollutants for continuous exposure. The Contractor will also sample four or five sites for confirmatory analysis, taking both surface samples and air samples (upwind and downwind) to determine the concentrations of toxic materials, background concentrations, and the effect of atmospheric transport. The Contractor will perform detailed studies of present and future disposal methods.

The Research Screening Committee approved the Request for

State of California  
AIR RESOURCES BOARD

Resolution 81-36

April 23, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, a solicited research Proposal Number 1002-81(R) entitled "Characterization and Impact of Electronic Automotive Emission Control Systems," has been submitted by Systems Control, Inc. to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

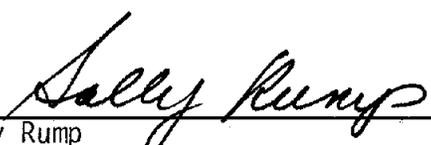
Proposal Number 1002-81(R) entitled, "Characteristics and Impact of Electronic Automotive Emission Control Systems," submitted by Systems Control, Inc. for an amount not to exceed \$119,288.

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board under the powers and authority granted by the Health and Safety Code, Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following proposal:

Proposal Number 1002-81(R) entitled, "Characteristics and Impact of Electronic Automotive Emission Control Systems," submitted by Systems Control, Inc. for an amount not to exceed \$119,288.

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$119,288.

I certify that the above is a true  
and correct copy of Resolution 81-36  
as passed by the Air Resources Board.

  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-6-3b2  
DATE: April 22, 1981

- ITEM: Research Proposal 1002-81 (R) entitled "Characteristics and Impact of Electronic Automotive Emission Control Systems".
- RECOMMENDATION: Adopt Resolution 81-36, approving Research Proposal 1002-81 (R) for funding in an amount not to exceed \$119,288.
- SUMMARY: The regulation of fuel economy and exhaust emissions has prompted automobile manufacturers to develop increased precision in engine control. As a result, mechanical means of controlling engine parameters are being replaced by electronic control systems (ECS). These systems provide interactive control of various engine operating functions by the use of a microprocessor and a network of sensors and actuators. In some cases, a malfunction in these systems does not result in a noticeable degradation of vehicle performance but does result in increased emissions. For example, should a particular sensor fail, the software will bypass the inoperative element by substituting one or more fixed values. Driveability will be maintained, but the loss of feedback signal may cause a significant increase in emissions. However, the driver would have indication of the need to seek corrective action.
- The increasing complexity of automotive engine electronics raises serious questions concerning the capability of the automotive service industry to diagnose and correct electronic malfunctions. Future vehicle inspection and maintenance programs will need to take such limitations into account. Relatively simple additions to or modifications of ECSs might allow checking of the ECS system itself, including assorted sensors, thus simplifying the vehicle inspection process.
- The first objective of this proposal is to quantify the impact of malfunction of the ECS upon emissions, fuel economy and driveability. This will be accomplished by testing the effect of up to ten induced malfunctions on each of ten 1980 or 1981 model-year vehicles.
- The second objective is to assess the capability of the service industry to diagnose and correct malfunctions

State of California  
AIR RESOURCES BOARD

Resolution 81-37

April 23, 1981

WHEREAS, pursuant to Health and Safety Code Section 39606, the Air Resources Board (Board) has established a statewide ambient air quality standard for hydrogen sulfide ( $H_2S$ );

WHEREAS, emissions of  $H_2S$  associated with geothermal development have degraded air quality in the Geysers Known Geothermal Resources Area (KGRA) and have caused the state ambient air quality standard for  $H_2S$  to be exceeded;

WHEREAS, Health and Safety Code Sections 39003, 39500, and 41500 authorize the Board to coordinate, encourage, and review efforts to attain and maintain state ambient air quality standards;

WHEREAS, the Lake County and Northern Sonoma County Air Pollution Control Districts have adopted or are considering amendments to their rules and regulations which will reduce  $H_2S$  emissions from new and existing geothermal operations in the Geysers;

WHEREAS, on April 22 and 23, 1981, the Board held a duly noticed public meeting to hear comments concerning the staff's proposed suggested control measure for the control of hydrogen sulfide emissions from geothermal operations in the Geysers KGRA;

WHEREAS, the Board finds that in order to permit the development of the Geysers KGRA to its full electrical generating potential and at the same time improve air quality in the Geysers KGRA so as to achieve and maintain the state  $H_2S$  standard, reductions in  $H_2S$  emissions from existing geothermal operations<sup>2</sup> as well as the application of state-of-the-art advanced control technology on new geothermal operations will be necessary;

WHEREAS, the technology for reducing  $H_2S$  emissions from existing and new geothermal power plants and stacking to the emission levels set forth in the proposed suggested control measure is technically feasible and economically achievable;

WHEREAS, the Board finds that the air quality impacts of geothermal operations may be more severe in areas near the operations and that the districts may find that requirements more stringent than those in the proposed suggested control measure are necessary and appropriate for geothermal operations close to populated areas;

WHEREAS, the Board finds that the slight potential decrease in total electrical generating capacity in the Geysers by the power required to operate H<sub>2</sub>S control systems is not significant when compared to total generating capacity, and that the operation of advanced H<sub>2</sub>S control systems will significantly improve air quality at the Geysers;

WHEREAS, the Board finds that if the H<sub>2</sub>S emissions from new and existing geothermal operations in the Geysers are reduced, the total amount of solid waste potentially generated from the operation of H<sub>2</sub>S control systems or geothermal operations in the Geysers is not expected to increase and may decrease;

WHEREAS, the Board finds that power plant operators and steam suppliers in the Geysers area are undertaking research projects to improve existing H<sub>2</sub>S control systems and to develop new, efficient and cost-effective H<sub>2</sub>S control systems;

WHEREAS, an adequate ambient air quality monitoring network does not now exist and should be established in the Geysers to assess H<sub>2</sub>S emissions from new and existing geothermal operations and to take into account the complex terrain and meteorological conditions in the Geysers;

WHEREAS, the California Environmental Quality Act and Board regulations require that a proposed action may not be adopted as proposed if mitigation measures or alternatives exist which would substantially reduce any significant adverse environmental effects of the proposed action, and further require that the Board respond in writing to significant environmental issues raised; and

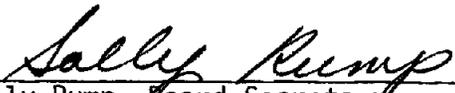
WHEREAS, the Board finds that the environmental issues associated with the concepts contained in the staff's suggested control measure have been adequately addressed and the Board concurs in the staff's findings that no significant adverse environmental effects are likely to result from the adoption and implementation of those concepts.

NOW THEREFORE BE IT RESOLVED that:

1. The Air Resources Board approves the following concepts as necessary to control H<sub>2</sub>S emissions from geothermal operations at the Geysers:
  - (a) for new power plants at the Geysers, an H<sub>2</sub>S emission limit of 5 pounds/hour, 50 gr/GMW/hr, 5 pounds per million pounds of steam or equivalent as proposed by the staff and the Air Pollution Control Officers of Northern Sonoma County and Lake County Air Pollution Control Districts;
  - (b) for existing power plants, H<sub>2</sub>S emissions limits as set forth in Appendix A, Table I of the Suggested Control Measure For The Control Of Hydrogen Sulfide Emissions From Geothermal Operations at the Geysers Known Geothermal Resources Area, Staff Report No. 81-6-1, dated April 22, 1981, and as proposed by the Northern Sonoma County Air Pollution Control Officer;

- (c) for stacking from new and existing geothermal power plants, an H<sub>2</sub>S emission limit which approximates the H<sub>2</sub>S emission limit for power plants and shall be achieved within the shortest practicable time after the power plant outage, as proposed by the staff and the Air Pollution Control Officers of Northern Sonoma County and Lake County Air Pollution Control Districts;
- (d) appropriate criteria for more stringent H<sub>2</sub>S emission limits applicable to new geothermal operations located close to populated areas or close to other geothermal operations analogous to the proposal of the Lake County Air Pollution Control Officer.
2. The Board directs the Executive Officer to forward this resolution to the Northern Sonoma County Air Pollution Control District and Lake County Air Pollution Control District for their consideration and direct the staff to support the districts' efforts to adopt regulations consistent within the findings of this resolution;
  3. The Board also directs the Executive Officer to forward this resolution and the proposed suggested control measure to the Geothermal Policy Committee of the California Air Pollution Control Officers' Association for their consideration;
  4. In view of the current research and development projects of power plant operators and steam suppliers on H<sub>2</sub>S emissions control systems, the Board recommends that the Lake County Air Pollution Control District and the Northern Sonoma County Air Pollution Control District, or the Air Resources Board at the request of either district, hold a public meeting in 1985 to review H<sub>2</sub>S control system improvements, air quality data, and the need for additional control of H<sub>2</sub>S emissions in the Geysers;
  5. The Board directs the Executive Officer to work with and provide assistance to the local air pollution control districts in the Geysers area to design and establish a comprehensive network to monitor H<sub>2</sub>S in the Geysers;
  6. If, within 120 days from the date of adoption of this resolution, the Lake County Air Pollution Control District and the Northern Sonoma County Air Pollution Control District have not adopted provisions for the control of H<sub>2</sub>S emissions from geothermal operations in the Geysers which are at least as effective as the concepts outlined in this resolution, the Executive Officer shall schedule a public hearing to consider adopting for these districts appropriate rules to control H<sub>2</sub>S emissions from geothermal operations at the Geysers.

I certify that the above is a true and correct copy of Resolution 81-37 as adopted by the Air Resources Board.

  
Sally Rump, Board Secretary

## PROPOSED

State of California  
AIR RESOURCES BOARD

April 22, 1981

SUGGESTED CONTROL MEASURE FOR THE CONTROL OF HYDROGEN SULFIDE EMISSIONS  
FROM GEOTHERMAL OPERATIONS AT THE GEYSERS KNOWN GEOTHERMAL RESOURCES AREAI. Applicability

This rule shall apply to hydrogen sulfide emissions in the Geysers Known Geothermal Resources Area from existing geothermal power plants, new geothermal power plants, and stacking.

For the purposes of this rule, power plants which receive a permit to construct from an Air Pollution Control District or a certificate from the California Energy Conservation and Development Commission on or after July 1, 1981, are deemed new power plants.

II. Definitions

A. Geothermal power plant means any thermal power plant which uses geothermal resources as the principal energy source for the generation of electrical power.

B. Gross megawatt (GMWe) means the total rated electrical generating capacity of a geothermal power plant as specified on the name plate of the turbine.

C. Stacking means the venting of steam into the atmosphere during power plant shutdowns or outages, both scheduled and unscheduled.

D. Dual units means two or more electrical power generating turbines which are located within or part of the same structure and which may be operated independently.

E. Single unit means all electrical power generating turbines not defined as dual units.

### III. Emissions Limitations

No person shall cause or allow the discharge into the atmosphere of hydrogen sulfide (H<sub>2</sub>S) from new geothermal power plants, existing geothermal power plants, or stacking at a rate which exceeds those set forth in Table I of this rule.

### IV. Exemption from New Source Review Rule

H<sub>2</sub>S emissions from new geothermal power plants, including stacking, which comply with the emissions limitations specified in Section III of this rule shall be exempt from those sections of the district's new source review rule which require offsets, best available control technology, and air quality impact analyses.

### V. Operating Protocol

Each permit to operate shall include an operating protocol which specifies the manner in which the power plant and related facilities will be operated to meet the emissions limitations set forth in Table I of this rule.

#### A. General Requirements

1. Each operating protocol shall include a requirement that a log be kept indicating for each power plant outage the date, the duration, and the estimated amount of H<sub>2</sub>S emissions. This log shall be made available, upon request, to the district or the Air Resources Board.

### III. Emissions Limitations

No person shall cause or allow the discharge into the atmosphere of hydrogen sulfide (H<sub>2</sub>S) from new geothermal power plants, existing geothermal power plants, or stacking at a rate which exceeds those set forth in Table I of this rule.

### IV. Exemption from New Source Review Rule

H<sub>2</sub>S emissions from new geothermal power plants, including stacking, which comply with the emissions limitations specified in Section III of this rule shall be exempt from those sections of the district's new source review rule which require offsets, best available control technology, and air quality impact analyses.

### V. Operating Protocol

Each permit to operate shall include an operating protocol which specifies the manner in which the power plant and related facilities will be operated to meet the emissions limitations set forth in Table I of this rule.

#### A. General Requirements

1. Each operating protocol shall include a requirement that a log be kept indicating for each power plant outage the date, the duration, and the estimated amount of H<sub>2</sub>S emissions. This log shall be made available, upon request, to the district or the Air Resources Board.

Effective Date	New Geothermal Power Plants		Existing Geothermal Power Plants		Stacking	
	Less than 50 GMWe	50 GMWe or greater	Direct Contact Condenser	Surface Condenser	New Power Plants	Existing Power Plants
July 1, 1981	50 grams/gross megawatt-hour	five (5) pounds per hour or 40 grams/gross megawatt-hour, whichever is greater	Units 3, 4, & 11: 90% reduction of the H <sub>2</sub> S in the incoming steam to each unit. Units 5, 6, & 12: 200 grams/gross megawatt-hour for each unit.		Same emissions limitations as power plant, at all times	
		five (5) pounds per hour	Units 1 & 2: 50% reduction of the H <sub>2</sub> S in the incoming steam to each unit. Units 3, 4, 5, 6, 7, 8, 9, 10, 11, & 12: 200 grams/gross megawatt-hour for each unit.	Units 13, 14, 15, 17 & NCPA #2: 50 grams/gross megawatt-hour		Same emissions limitations as the power plant, within two hours of the outage
July 1, 1990			Units 1 & 2: 50% reduction of the incoming steam to each unit. Units 3, 4, 5, 6, 7, 8, 9, 10, 11, & 12: 100 grams/gross megawatt-hour for each unit.			

Table I

2. The operating protocol for each power plant shall specify the frequency and method of source tests, the frequency and method of sampling the H<sub>2</sub>S concentration in the incoming steam, the predicted relationship between hydrogen sulfide emissions and chemical feed rates, the location of the record of all source tests, and a requirement that source tests will be performed with the power plant operating at a minimum of 80 percent of rated capacity.

3. The operating protocol for stacking emissions controls shall specify the steam flow rates, chemical feed rates, and all other parameters which determine the degree of H<sub>2</sub>S control.

B. Procedures

1. New Facilities: Each applicant for a permit to operate for a new power plant shall submit an operating protocol. The steam supplier for a new power plant shall submit an operating protocol for stacking emissions from facilities it operates.

2. Existing Facilities: Each operator of an existing power plant shall submit an operating protocol for each unit, including all facilities operated by the same person, to the Air Pollution Control Officer within 60 days after the adoption of this rule. The steam supplier for each existing power plant shall submit an operating protocol for stacking emissions from all facilities it operates within 60 days after the adoption of this rule. The Air Pollution Control Officer shall approve, disapprove, or modify the operating protocols.

2. The operating protocol for each power plant shall specify the frequency and method of source tests, the frequency and method of sampling the H<sub>2</sub>S concentration in the incoming steam, the predicted relationship between hydrogen sulfide emissions and chemical feed rates, the location of the record of all source tests, and a requirement that source tests will be performed with the power plant operating at a minimum of 80 percent of rated capacity.

3. The operating protocol for stacking emissions controls shall specify the steam flow rates, chemical feed rates, and all other parameters which determine the degree of H<sub>2</sub>S control.

B. Procedures

1. New Facilities: Each applicant for a permit to operate for a new power plant shall submit an operating protocol. The steam supplier for a new power plant shall submit an operating protocol for stacking emissions from facilities it operates.

2. Existing Facilities: Each operator of an existing power plant shall submit an operating protocol for each unit, including all facilities operated by the same person, to the Air Pollution Control Officer within 60 days after the adoption of this rule. The steam supplier for each existing power plant shall submit an operating protocol for stacking emissions from all facilities it operates within 60 days after the adoption of this rule. The Air Pollution Control Officer shall approve, disapprove, or modify the operating protocols.

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Meeting to Consider Suggested Control Measure for the Control of Hydrogen Sulfide Emissions from Geothermal Operations at the Geysers Known Geothermal Resources Area.

Agenda Item No: 81-6-1

Public Meeting Date: April 22, 1981

Response Date: April 22, 1981

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:

Sally Rump  
Board Secretary

Date:

5/28/81

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Off. of the Secretary  
MAY 28 1981  
Resources Agency of California

# Memorandum

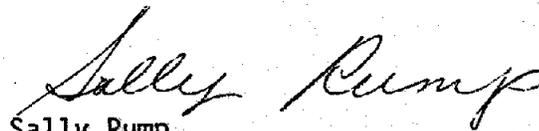
Huey D. Johnson  
Secretary  
Resources Agency  
1416 9th Street

Date : May 28, 1981

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

From : 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 decision and response to environmental comments raised during the comment period.

  
Sally Rump  
Board Secretary

Attachments  
~~\_\_\_\_\_~~

OFF: RECEIVED BY  
MAY 28 1981  
Resources Agency of California

State of California  
AIR RESOURCES BOARD

Resolution 81-38

May 4, 1981

WHEREAS, on September 12, 1979, the Air Resources Board (the "Board") adopted Resolution 79-68 which amended Rule 210.1 (Standard for Authority to Construct) of the Kern County Air Pollution Control District ("KCAPCD");

WHEREAS, the Board in Resolution 79-68 offered preliminary guidelines as official policy guidance for the application of the KCAPCD's new source review rules to proposed major new sources of emissions; and stated that the Board shall review and revise the guidelines as appropriate;

WHEREAS, the guidelines have now been in effect for over one and one half years;

WHEREAS, experience and application of these guidelines indicates the guidelines can be improved to provide the Kern County Air Pollution Control District and applicants with additional flexibility without adversely affecting air quality;

WHEREAS, Dr. Laurence Caretto, Board Vice Chairman, has met with representatives of the Kern County Air Pollution Control District staff, industry and ARB staff to discuss the guidelines, and has recommended that they be revised, in certain particulars;

WHEREAS, the Board finds that it is appropriate to amend Guideline 6 as recommended by Dr. Caretto to provide for the more effective application of KCAPCD's Rule 210.1;

NOW, THEREFORE BE IT RESOLVED, that the Air Resources Board hereby amends Guideline 6 to read as follows:

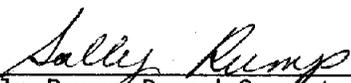
Guideline 6:

- 1) "Offsets of emissions of particulate matter from combustion sources shall be from substantially similar combustion sources.
- 2) If it is infeasible for offsets from like combustion sources to be made, then offsets of particulate matter from other point sources are acceptable.
- 3) Fugitive emissions should only be used for offsetting directly emitted particulate emissions if, in the judgment of the air pollution control officer, no other directly emitted particulates (or inter-pollutant tradeoffs) are available. In cases where fugitive particulate emissions are controlled for use as offsets, the air pollution control officer should consider special measures to assure that these offsets result in an effective net air quality benefit. Among the special measures that the APCO should consider are:

- a) A requirement that a proportion of the tradeoffs be obtained in a fine particle size range, in proportion to the amount of new emissions in a fine particle size range.
- b) That fugitive emissions be offset at a higher ratio (e.g. 2:1).
- c) That the company obtaining offsets commit to experimental programs to develop cost-effective technology for improved control of directly emitted particulates.
- d) Any other considerations that the APCO determines will provide an effective present and/or future control of particulate emissions."

BE IT FURTHER RESOLVED, that it is the Board's intent that the revision to the Guidelines adopted by this Resolution shall apply only to applications, or amended applications, for new and modified sources filed on and after May 4, 1981.

I certify that the above is  
a true and correct copy of  
Resolution 80-38, as adopted  
by the Air Resources Board

  
Sally Rump, Board Secretary

State of California  
AIR RESOURCES BOARD

Resolution 81-39

May 4, 1981

A. WHEREAS, Section 39602 of the Health and Safety Code designates the Air Resources Board (ARB or Board) as the air pollution control agency for all purposes set forth in federal law and designates the ARB as the state agency responsible for the preparation of the State Implementation Plan (SIP) required by the Clean Air Act (CAA);

B. WHEREAS, the CAA as amended in 1977 mandates the revision of the SIP in designated nonattainment areas of the state in order to assure the attainment and maintenance of the National Ambient Air Quality Standards (NAAQS) by specified deadlines;

C. WHEREAS, the California and Nevada portions of the Lake Tahoe Basin were designated nonattainment for carbon monoxide and oxidant under Section 107(b) of the CAA;

D. WHEREAS, the ARB, pursuant to authority delegated to it by the Governor, certified on June 7, 1978, that it would retain the lead agency responsibility for the preparation of the 1979 carbon monoxide and oxidant nonattainment plan for the California portion of the Lake Tahoe Basin;

E. WHEREAS, on January 26, 1979, the Environmental Protection Agency (EPA) relaxed the 0.08 ppm oxidant standard for which the Lake Tahoe Basin was in violation to a 0.12 ppm ozone standard for which the Lake Tahoe Basin was not in violation;

F. WHEREAS, after both the State of California and the State of Nevada informed the EPA that their respective portions of the Lake Tahoe Basin were attaining the revised national ozone standard, the EPA on March 3, 1981, redesignated the Lake Tahoe Basin from nonattainment for oxidant to attainment for ozone;

G. WHEREAS, the Lake Tahoe Basin remains a nonattainment area for carbon monoxide;

H. WHEREAS, because at higher elevations humans are susceptible to adverse health impacts at lower concentrations of ambient carbon monoxide, the ARB has established an 8-hour carbon monoxide ambient air quality standard of 6 ppm for the Lake Tahoe Air Basin which is more stringent than for the remainder of the state;

I. WHEREAS, the State of Nevada has established state ambient air quality standards for carbon monoxide, oxidant and visibility which are identical to California's standards for the Lake Tahoe Air Basin;

J. WHEREAS, the revised bi-state compact (Public Law #96-551) mandates the Tahoe Regional Planning Agency (TRPA) to develop a new Lake Tahoe Basin Plan incorporating the more stringent of local, state and federal regulations and standards;

W. WHEREAS, the ARB and the State of California Water Resources Control Board (SWRCB) have developed air quality and water quality plans that are compatible and consistent;

X. WHEREAS, the ARB and the SWRCB believe that development on fragile lands must be curtailed and that irreversible further damage to Lake Tahoe will be the inevitable consequence of delay in restricting development on fragile lands;

1. NOW, THEREFORE BE IT RESOLVED, that the TRPA should be responsive to environmental concerns and committed to the principle of achieving clean air in the Lake Tahoe Basin;

2. BE IT FURTHER RESOLVED, that the TRPA, as mandated by the new bi-state compact, incorporate into its comprehensive plan an air quality plan which provides control strategies capable of attaining at least the California and Nevada state standards for carbon monoxide, ozone, and visibility;

3. BE IT FURTHER RESOLVED, that the TRPA is hereby requested to:

a) demonstrate that it has the capability to influence implementing agencies to commit to the planning process, including cooperative commitments to implement transportation and land use controls necessary to achieve and maintain air and water quality as well as other standards for the Basin;

b) move rapidly to prohibit development on fragile lands;

c) take actions which demonstrate preference for public transportation over expanded automobile use into and within the Lake Tahoe Basin;

d) commit to a coordinated planning approach which would result in California's and Nevada's joint desire and commitment to assure attainment of environmental thresholds and standards in the Basin;

4. BE IT FURTHER RESOLVED, that if the TRPA is designated local lead agency for the California portion of the Lake Tahoe Basin it must have the authority and commitment to cause implementation of the 1979 SIP and to develop, implement and enforce the 1982 update by the requisite deadline;

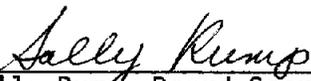
5. BE IT FURTHER RESOLVED, that if the TRPA is designated local lead agency for the California portion of the Lake Tahoe Basin, the ARB would, as in the case of other nonattainment areas and as a partner in the air quality planning process for the California portion of the Lake Tahoe Basin, have principal responsibility for liaison with the EPA and for state review, approval, and submission to EPA of the locally adopted NAP as a SIP revision;

6. BE IT FURTHER RESOLVED, that if the TRPA is designated local lead agency for the California portion of the Lake Tahoe Basin the ARB would, in addition to providing certain technical assistance, maintain its statewide role in motor vehicle emission control programs including the development of in-use control measures;

7. BE IT FURTHER RESOLVED, that if the TRPA is designated local lead agency for the California portion of the Lake Tahoe Basin, the present methodologies for determining carbon monoxide violations at hot spot locations shall be continued and utilized as a basis for the 1982 SIP updates;

8. BE IT FURTHER RESOLVED, that the Board acknowledges that the Executive Officer, subsequent to receipt and review of written comments postmarked no later than May 12, 1981, shall take appropriate action regarding the request that the TRPA become the local lead agency for nonattainment air quality planning for the California portion of the Lake Tahoe Basin.

I certify that the above is  
a true and correct copy of  
Resolution 81-39, as adopted  
by the Air Resources Board

  
\_\_\_\_\_  
Sally Rump, Board Secretary

State of California  
AIR RESOURCES BOARD

RESOLUTION 81-40

April 23, 1981

**WHEREAS**, the week of April 20, 1981, has been designated as "National Secretaries Week"; and

**WHEREAS**, the Air Resources Board has a large number of extremely competent, dedicated, and hard working secretaries who handle the scheduling, typing, and meeting-related business of the Board; and

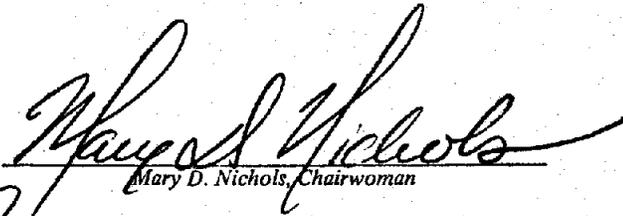
**WHEREAS**, these secretaries willingly work odd hours, often working into the evening and coming in early in the morning to get things done, so that the Board can operate in a most efficient manner, and still remain pleasant and cooperative; and

**WHEREAS**, it is not possible to accomplish anything without the wonderful backup support the Board always gets from the secretaries;

**NOW, THEREFORE, BE IT RESOLVED**, That the secretaries of the Air Resources Board be commended and paid special tribute to thank them for all their efforts on behalf of the cause of clean air; and

**BE IT FURTHER RESOLVED**, That the Board singles them out for public recognition for the outstanding job and the special contribution they have made to that cause; and

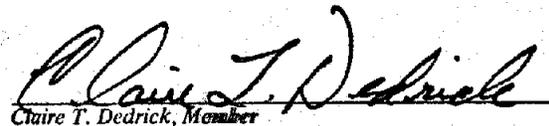
**BE IT FURTHER RESOLVED**, That the Board requests the Executive Officer to transmit forthwith a copy of this resolution to every secretary of the Air Resources Board.

  
Mary D. Nichols, Chairwoman

  
Laurence S. Caretto, Vice-Chairman

  
Alvin S. Gordon, Member

  
James G. Leathers, Member

  
Claire T. Dedrick, Member

State of California  
AIR RESOURCES BOARD

RESOLUTION 81-40A

April 23, 1981

**WHEREAS**, the week of April 20, 1981, has been designated as "National Secretaries Week"; and

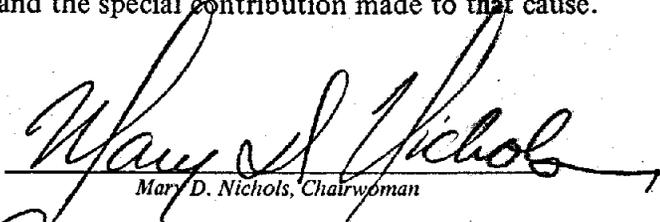
**WHEREAS**, Sally Rump has served as Board Secretary in an absolutely superb fashion in managing the meetings and testimonies of the Board; and

**WHEREAS**, she willingly works odd hours, often working into the evening and coming in early in the morning to get things done, so that the Board can operate in a most efficient manner, and still remain pleasant and cooperative; and

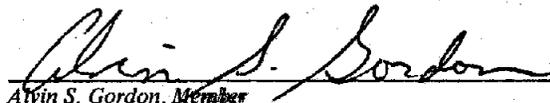
**WHEREAS**, it is not possible to accomplish anything without the wonderful backup support the Board always gets;

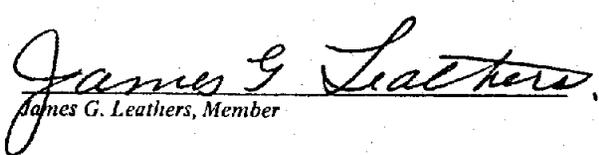
**NOW, THEREFORE, BE IT RESOLVED**, That the Board Secretary, Sally Rump, be commended and paid special tribute to thank her for all her efforts on behalf of the cause of clean air; and

**BE IT FURTHER RESOLVED**, That the Board wishes to express its appreciation for the outstanding job and the special contribution made to that cause.

  
Mary D. Nichols, Chairwoman

  
Laurence S. Caretto, Vice-Chairman

  
Alvin S. Gordon, Member

  
James G. Leathers, Member

  
Claire T. Dedrick, Member

State of California  
AIR RESOURCES BOARD

Resolution 81-41

June 24, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 1029-83 entitled, "The Effects of Present and Potential Air Pollution on Important San Joaquin Valley Crops", has been submitted by the University of California, Riverside to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

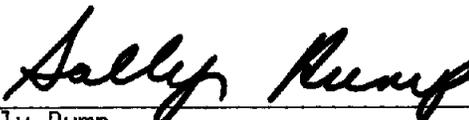
Proposal Number 1029-83 entitled, "The Effects of Present and Potential Air Pollution on Important San Joaquin Valley Crops", submitted by the University of California, Riverside for an amount not to exceed \$66,044;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1029-83 entitled, "The Effects of Present and Potential Air Pollution on Important San Joaquin Valley Crops", submitted by the University of California, Riverside for an amount not to exceed \$66,044,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$66,044.

I certify that the above is a true and correct copy of Resolution 81-41 as adopted by the Air Resources Board.

  
Sally Rump  
Board Secretary

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-11-3b  
DATE: June 24, 1981

ITEM: Research Proposal No. 1029-83 entitled, "The Effects of Present and Potential Air Pollution on Important San Joaquin Valley Crops".

RECOMMENDATION: Adopt Resolution 81-41 approving Research Proposal No. 1029-83 for funding in an amount not to exceed \$66,044.

SUMMARY: Although considerable research has been conducted to determine the effects of air pollutants on various plant species, the majority of this research has focused on either acute exposures to plants or the study of annual, as contrasted with perennial, crops. This study was undertaken in the spring of 1979 to evaluate the potential oxidant damage to two of the most important perennial San Joaquin Valley crops grown under field conditions, alfalfa and Thompson Seedless grapes. This proposed study is for the third year effort of what was originally planned as a three-year effort.

The major objectives of this study are to:

- o determine whether Thompson Seedless grapes are being damaged by existing levels of oxidant-type air pollution (reduction in yields and/or fruit quality).
- o determine the effects of SO<sub>2</sub> and ambient, subambient, and artificially elevated oxidant concentrations on alfalfa growth and quality.

Alfalfa and Thompson Seedless grapes are being grown in open-top growth chambers under actual field conditions supplied with air containing pre-determined levels of pollutants. In the proposed third year of the alfalfa study, the air pollutant treatments are as they were last year: (1) ambient, non-filtered air, (2) carbon-filtered air, (3) carbon-filtered air to which SO<sub>2</sub> is added, (4) ambient air to which SO<sub>2</sub> is added, (5) carbon-filtered air to which ozone is added to increase ozone dose by 50 percent, and (6) a non-enclosed ambient plot to test chamber effects. For the third year of the Thompson Seedless grapes study, treatments will be: (1) filtered air and (2) ambient (non-filtered) air. All plant responses are correlated with calculated pollution dose, as well as oxidant and/or SO<sub>2</sub> concentration.

State of California  
AIR RESOURCES BOARD

Resolution 81-42

June 24, 1981

Agenda Item No.: 81-11-2

WHEREAS, The Air Resources Board ("Board") pursuant to Health and Safety Code Section 39606 and the Environmental Protection Agency (the "EPA") under the provisions of the federal Clean Air Act have established state and national ambient air quality standards, respectively, including standards for nitrogen dioxide, sulfur dioxide, hydrocarbons, suspended particulate matter, oxidant and ozone;

WHEREAS, Health and Safety Code Sections 39003, 39602, and 41500 authorize the Board to coordinate, encourage, and review efforts to attain and maintain state and national ambient air quality standards;

WHEREAS, Health and Safety Code Sections 39600 and 39605 authorize the Board to act as necessary to execute the powers and duties granted to and imposed upon the Board and to provide assistance to the air pollution control districts;

WHEREAS, two California public utility companies have proposed to construct coal-fired power plants in California which would emit substantial amounts of nitrogen oxides (NOx), sulfur oxides (SOx), hydrocarbons, and particulate matter (TSP) to the detriment of California's air quality;

WHEREAS, air pollution control technology is presently available to permit such facilities to be built to protect California air quality and to satisfy other environmental protection requirements;

WHEREAS, pursuant to Section 111 of the Clean Air Act, the EPA has established new source performance standards (NSPS) applicable to new coal-fired power plants;

WHEREAS, Board staff has reviewed these NSPS, and the emission limitations contained in permits issued by EPA for power plants in other states for their adequacy for the protection of California air quality in view of their potential applicability to coal-fired power plants proposed for California through EPA approvals;

WHEREAS, the Board staff has also reviewed recent developments in air pollution control technology for coal-fired power plants;

WHEREAS, the Board staff has developed draft minimum guidelines for the control of air contaminant emissions from new coal-fired power plants in California;

WHEREAS, on June 24, 1981, the Board held a duly noticed public meeting to consider the staff's proposed minimum guidelines and to hear and consider the comments of the public and interested persons on the staff proposal;

WHEREAS, the Board has determined that substantially lower (more stringent) levels of air pollutant emissions than those specified by the EPA NSPS have been achieved with current technology and are necessary for the protection of air quality in California;

WHEREAS, new sources, which are subject to local new source review rules as well as federal requirements, must apply the best available air pollution control technology (BACT);

WHEREAS, the Board finds:

That combustion process modification is a proven and commercially available technology for the reduction of oxides of nitrogen (NO<sub>x</sub>) emissions from coal-fired power plants;

That combustion process modifications have been shown to reduce NO<sub>x</sub> emissions to less than 0.45 lb/10<sup>6</sup> BTU over the full load range;

That the selective catalytic reduction (SCR) flue gas treatment technique is also a proven, commercially available NO<sub>x</sub> control technology;

That tests on specific coal types are required before the installation of SCR units;

That SCR flue gas treatment systems have been demonstrated to reduce flue gas NO<sub>x</sub> concentrations by over 80% and as much as 95% over the load range of 50% to 100% of full load;

That a NO<sub>x</sub> flue gas emissions rate of 0.45 lb/10<sup>6</sup> BTU, achieved with combustion modification techniques, in combination with an SCR flue gas treatment system designed and operated for an 80% flue gas NO<sub>x</sub> emissions reduction, will result in a total NO<sub>x</sub> emissions reduction to a level of 0.09 lb/10<sup>6</sup> BTU or less over a load range of 50% to 100% of full load.

That fabric filter systems (baghouses) are a commercially available and proven technology for the control of particulate matter emissions from coal-fired power plants;

That particulate matter emission levels of 0.005 gr/ACF and lower have been demonstrated on commercial pulverized coal-fired units;

That baghouses, at emission levels of 0.005 gr/ACF and less, as a baghouse manufacturer guaranteed maximum emission rate for a properly designed, engineered and maintained fabric filtration system, are commercially competitive with other particulate matter (fly ash) control technologies;

That flue gas desulfurization (FGD) systems have achieved wide-spread acceptability as the primary sulfur oxide (SO<sub>x</sub>) control technology for coal-fired power plants;

That a flue gas SO<sub>x</sub> emissions control level of 95% or more for coal-fired power plants is technologically feasible, economically reasonable, and commercially demonstrated without coal pretreatment or sulfur credits, using FGD systems;

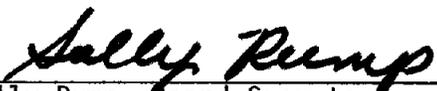
WHEREAS, the California Environmental Quality Act and Board regulations require that no project having significant adverse environmental impacts be adopted as originally proposed if feasible alternatives or mitigation measures are available; and

WHEREAS, the Board has reviewed the staff's analysis of environmental impacts associated with the proposed guidelines and finds that no significant adverse environmental impacts are likely to result from the implementation of the proposed minimum guidelines for the control of air contaminant emissions from new coal-fired power plants in California.

NOW, THEREFORE, BE IT RESOLVED, that the Board adopts the minimum guidelines shown in Attachment A hereto for the control of emissions from coal-fired power plants in California;

BE IT FURTHER RESOLVED, that the Board encourages local air pollution control districts to adopt these, or more stringent, emissions control requirements to be applied to new coal-fired power plants on a case-by-case basis in addition to local new source review requirements.

I certify that the above is  
a true and correct copy of  
Resolution 81-42, as adopted  
by the Air Resources Board.

  
Sally Rump, Board Secretary

Attachment A  
to Resolution 81-42

MINIMUM GUIDELINES FOR THE CONTROL OF  
EMISSIONS FROM COAL-FIRED POWER PLANTS

A. MINIMUM GUIDELINES FOR NO<sub>x</sub> EMISSION CONTROL

1. Minimum Guideline for NO<sub>x</sub> Removal

After the date on which the initial performance test is completed, no owner or operator shall cause to be discharged into the atmosphere from any affected facility burning coal, any gases which contain nitrogen oxides (expressed as nitrogen dioxide) in excess of 0.09 pound per million BTU of heat input when the boiler is operated at or above 50 percent of its rated capacity and 0.45 pound per million BTU of heat input when the boiler is operated below 50 percent of its rated capacity.

2. Compliance

Compliance with the minimum guidelines shall continuously be established by the owner or operator of the affected facility on a three-hour moving average using continuous emission monitoring.

3. Continuous Emission Monitoring

The owner or operator of a coal-fired power plant shall install, calibrate, maintain and operate a continuous monitoring system and record the data produced in the measurement of nitrogen dioxide emissions. All continuous nitrogen dioxide monitors shall be required to meet the performance specifications outlined in 40 CFR Part 60, Appendix B, Performance Specification 2.

## B. MINIMUM GUIDELINE FOR PARTICULATE MATTER EMISSION CONTROL

### 1. Minimum Guideline for Particulate Matter Removal

After the date on which the initial performance test is completed, no owner or operator shall cause to be discharged out of the particulate matter collection device, any gases which contain particulate matter in excess of 0.005 grain per actual cubic foot of flue gas.

### 2. Compliance

Compliance with the minimum guidelines shall be established by the owner or operator of the affected facility by the average of three 3-hour tests by EPA Method 5, or equivalent. The owner or operator of the affected facility shall also install a continuous opacity monitor and conduct performance tests to establish the relationship of opacity and particulate matter mass emission rate for the specific source over a load range up to the full rated capacity.

### 3. Continuous Mass Rate Emission Monitoring

While highly desirable, current state of the art monitoring techniques preclude recommending continuous mass rate particulate matter monitoring. However, continuous monitoring of particulate matter emissions is a developing technology, and monitors may be commercially available prior to the operational date of a new coal-fired power plant in California. For a detailed discussion of the measurement of particulate matter emissions, see Appendix A of staff report 81-11-2,

#### 4. Opacity Monitoring

The owner or operator of a coal-fired power plant shall install, calibrate, maintain, and operate a continuous opacity monitoring system, and record the data produced in the measurement of opacity of emissions. All opacity monitors shall be required to meet the performance specifications outlined in 40 CFR Part 60, Appendix B, Performance Specification 1.

### C. MINIMUM GUIDELINE FOR SO<sub>2</sub> EMISSION CONTROL

#### 1. Minimum Guideline for SO<sub>2</sub> Removal

After the date on which the initial performance test is completed, no owner or operator shall cause to be discharged into the atmosphere from any affected facility any gases which contain SO<sub>2</sub> in excess of five percent (95 percent reduction) of the inlet concentration to the SO<sub>2</sub> removal device when the inlet SO<sub>2</sub> concentration exceeds 300 ppm. If the inlet SO<sub>2</sub> concentration is equal to or less than 300 ppm, the removal efficiency may be relaxed as long as the outlet SO<sub>2</sub> concentration is no greater than 15 ppm.

#### 2. Compliance

Compliance with the minimum guidelines shall continuously be established by the owner or operator of the affected facility on a three-hour moving average using continuous emission monitoring.

#### 3. Continuous Emission Monitoring

The owner or operator of a coal-fired power plant shall install, calibrate, maintain and operate a continuous monitoring system, and record

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Meeting to Consider Minimum Guidelines for the Control  
of Emissions from Coal-Fired Power Plants

Agenda Item No.: 81-11-2

Public Hearing Date: June 24, 1981

Response Date: June 24, 1981

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:

*Sally Rump*  
Board Secretary

Date:

6/30/81

RECEIVED BY  
Office of the Secretary

JUN 30 1981

Resources Agency of California

# Memorandum

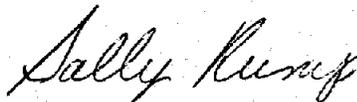
: Huey D. Johnson  
Secretary  
Resources Agency

Date : June 30, 1981

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

From : 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 decision and response to environmental comments raised during the comment period.



Sally Rump  
BOARD SECRETARY

att. Res. 81-42

RECEIVED BY  
Office of the Secretary

JUN 30 1981

Resources Agency of California

State of California  
AIR RESOURCES BOARD

RESOLUTION 81-43

June 25, 1981

*WHEREAS*, Vapor Recovery Task Force Chairman, Peter J. Fearey, and members, Jim Campbell, Milton Feldstein, C. Robert Lupcho, Joseph A. Stuart, B. S. DiGiovanni, Ruth Koehler, and Mary Solow, have unselfishly given their talents and time to assist the Air Resources Board in its efforts to improve the Phase II vapor recovery program;

*WHEREAS*, the task force members, who represent a broad diversity of interests and viewpoints, have worked together promptly and effectively to produce a thorough review of the vapor recovery program;

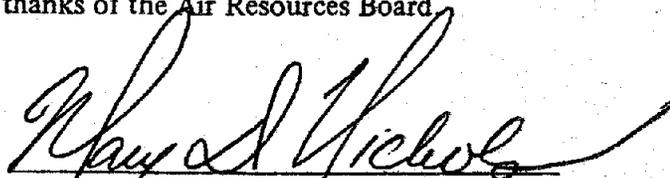
*WHEREAS*, the task force brought together state and local fire, weights and measures, and air pollution control interests and has helped improve program understanding and communication among them;

*WHEREAS*, the Board intends to consider all the recommendations of the task force and knows the recommendations will contribute significantly to needed improvements in the program; and

*WHEREAS*, many of the task force recommendations have already been incorporated into amendments to pending legislation in the California State Legislature.

*NOW, THEREFORE BE IT RESOLVED*, that the Vapor Recovery Task Force be commended for its outstanding contributions to the vapor recovery program thereby making a significant step toward the goal of clean air in California.

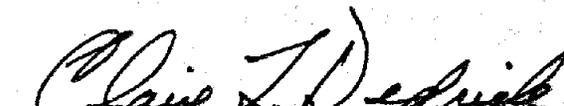
*BE IT FURTHER RESOLVED*, that a copy of this resolution be transmitted to each task force member with the thanks of the Air Resources Board.

  
Mary D. Nichols, Chairwoman

  
Laurence S. Caretto, Vice-Chairman

  
Alvin S. Gordon, Member

  
James G. Leathers, Member

  
Claire T. Dedrick, Member

State of California  
AIR RESOURCES BOARD

RESOLUTION 81-44

June 25, 1981

Francis Richard Perry devoted over thirty years to dedicated state service and over ten years to the Air Resources Board.

During the past seven years, Mr. Perry served as a branch chief responsible for engineering evaluation and the state certification program for gasoline vapor recovery systems.

Mr. Perry made an immense contribution to the states effort to control air pollution and improve the health and welfare of the state citizenry.

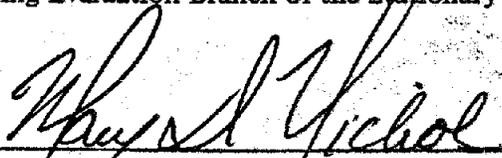
Mr. Perry was universally known by the Board, its staff, local air pollution control districts and representatives of industry for his honesty, his decency, his sincerity, and his dedication to his duties.

Mr. Perry's untimely passing on May 28, 1981, leaves a void at the Board that will not be easily filled, and Mr. Perry will be sorely missed by his friends and colleagues at the board.

**NOW, THEREFORE BE IT RESOLVED**, that the Board expresses its sorrow over the loss of Mr. Perry, and further expresses its deeply felt gratitude for the many valuable contributions Mr. Perry made to the Board's programs.

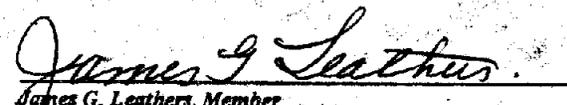
**BE IT FURTHER RESOLVED**, that a memorial plaque be placed at the Stationary Source Control Division Testing Laboratory which will dedicate the laboratory to his memory in recognition of his services to the people of California.

**BE IT FURTHER RESOLVED**, the Board directs that a copy of this resolution be transmitted to his widow, Mrs. Clarice C. Perry, and another copy be prominently displayed in the offices of the Engineering Evaluation Branch of the Stationary Source Control Division.

  
Mary D. Nichols, Chairwoman

  
Lawrence S. Caretto, Vice-Chairman

  
Alvin S. Gordon, Member

  
James G. Leathers, Member

  
Claife T. Dedrick, Member

State of California  
AIR RESOURCES BOARD

Resolution 81-46  
September 24, 1981

Agenda Item No.: 81-19-1

WHEREAS, Section 39601 of the Health and Safety Code authorizes 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, Sections 43013, 43100 and 43101 of the Health and Safety Code authorize the Board to adopt vehicle emission standards in order to control or eliminate air pollution caused by motor vehicles;

WHEREAS, heavy-duty engine emission standards were adopted in 1976 to apply to the 1983 model year but their application was postponed one year, to the 1984 model year, for economic reasons;

WHEREAS, as a result of testimony presented by several manufacturers in January 1981, the Board directed the staff to study further the feasibility of the 1984 standards;

WHEREAS, the Board staff has collected information from the manufacturers and reported the results of its study to the Board;

WHEREAS, emissions from heavy-duty engines are projected to contribute a major portion of oxides of nitrogen emissions to the atmosphere as controls on other mobile sources are made more stringent;

WHEREAS, control of oxides of nitrogen and hydrocarbon emissions is of critical importance in efforts to reduce air pollution in urban areas of California;

WHEREAS, the Board has considered the air quality impacts of the standards and regulations for 1984 model heavy-duty engines, and finds that any further delay of these standards would have a significant adverse environmental impact; and

WHEREAS, the Board has reviewed the 1984 heavy-duty engine exhaust emission standards and finds them technologically and economically feasible.

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby reaffirms the 1984 model heavy-duty engine exhaust emission standards and test procedures.

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider the Feasibility of 1984 and Subsequent Model Heavy-Duty Engine Emission Standards and to Consider a Proposed Amendment to Title 13, California Administrative Code, Section 1956.7 Regarding Exemptions from Emission Standards for Heavy-Duty Vehicles

Agenda Item No.: 81-19-1

Public Hearing Date: September 24, 1981

Response Date: September 24, 1981

Issuing Authority: Air Resources Board

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

Response: N/A

CERTIFIED:

*Sally Kemp*  
Board Secretary

RECEIVED BY  
Office of the Secretary

OCT 07 1981

Date:

10/6/81

Resources Agency of California

# Memorandum

10  
: Huey D. Johnson  
Secretary  
Resources Agency

Date : April 6, 1981

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

From : 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 decision and response to environmental comments raised during the comment period.

*Sally Rump*  
Sally Rump  
BOARD SECRETARY

RECEIVED BY  
Office of the Secretary

OCT 07 1981

Resources Agency of California

## Attachments

~~Resolution 81-59~~  
Resolution 81-59  
Resolution 81-61

State of California  
AIR RESOURCES BOARD

Resolution 81-47

July 30, 1981

Agenda Item: 81-14-1

WHEREAS, the Air Resources Board ("Board") has established air quality standards for sulfur dioxide (SO<sub>2</sub>), sulfates and suspended particulate matter, as well as for visibility-reducing particles;

WHEREAS, the Environmental Protection Agency (EPA) has also adopted health-related national ambient air quality standards (NAAQS) for SO<sub>2</sub> and suspended particulate matter;

WHEREAS, Health and Safety Code Section 39602 requires the State Implementation Plan to include only those measures necessary to meet the requirements of the Clean Air Act;

WHEREAS, the Clean Air Act (42 USC Section 7401 et seq.; see Sections 7410 and 7502) requires the state to attain and maintain the NAAQS for SO<sub>2</sub> and suspended particulate matter by December 31, 1982, through the adoption and implementation of all reasonably available control measures as expeditiously as practicable;

WHEREAS, the Board is authorized, pursuant to the authority set forth in Health and Safety Code Sections 39002, 39600, 39602, 43013, and 43101, to adopt regulations governing the composition of motor vehicle emissions; and such regulations are necessary in order to implement, interpret, or make specific Health and Safety Code Sections 39000, 39001, 39003, 39606, and 43000;

WHEREAS, Health and Safety Code Section 39605 permits the Board to provide any assistance to any district;

WHEREAS, the South Coast Air Quality Management District has included, as a measure in its subsequently ARB-approved non-attainment plan, the control of the sulfur content of motor vehicle diesel fuel;

WHEREAS, the South Coast Air Quality Management District Board by Resolution 78-37 requested the Air Resources Board to adopt a regulation to limit the sulfur content of diesel fuel for use in motor vehicles to 0.05 percent by weight (500 ppm) and reaffirmed that commitment at the April 22 and 23, 1981 ARB public hearings;

WHEREAS, the California Environmental Quality Act and Air Resources Board regulations require that an activity not be adopted as proposed if feasible alternatives or other measures are identified which can be incorporated into the proposal to substantially mitigate any adverse environmental impact, if any;

WHEREAS, the Board has held two duly noticed public hearings on this matter, and has heard and considered the comments presented by representatives of the ARB, districts, affected industries, and other interested persons and agencies; and

WHEREAS, the Board finds:

That the state 24-hour ambient air quality standard for sulfur dioxide has been consistently violated over the past years in California, particularly in the South Coast Air Basin;

That the state 24-hour ambient air quality standard for sulfates has been consistently violated over the past years in California, particularly in the South Coast Air Basin;

That sulfates are a substantial part of total suspended particulates, and sulfates significantly reduce visibility;

That the national and state standards for particulate matter and the state standard for visibility-reducing particles have been consistently violated over the past years in California, particularly in the South Coast Air Basin;

That the Board currently regulates the sulfur content of unleaded gasoline in order to reduce motor vehicle emissions as set forth in 13 CAC Section 2252(a), which specifies that the current sulfur content limit for unleaded gasoline is 0.04 percent by weight, and will become 0.03 percent by weight on January 1, 1982;

That sulfur compounds in diesel fuel contribute significantly to the amount of SO<sub>2</sub>, sulfates, suspended particulate matter, and visibility-reducing particles in the air, both as products of combustion and as secondary products of atmospheric chemical reactions;

That emissions of sulfur compounds from the combustion of diesel fuel in motor vehicles are expected to increase significantly over the next ten years because of the anticipated rapid penetration of diesel-powered motor vehicles into the new vehicle sales market and are expected to account for approximately 24 percent of all sulfur oxide emissions in the South Coast Air Basin in 1990;

That a reduction in the sulfur content of diesel fuel will reduce the quantity of sulfur-bearing air contaminants which are emitted from vehicles which use diesel fuel;

That (with the exception of small refiners' production) reduction of the sulfur content of diesel fuel in the South Coast Air Shed to 0.05 percent sulfur by weight will result in a refinery weighted average cost of approximately \$1.38 per pound of SO<sub>2</sub> removed and hence is a cost-effective measure;

That a reduction of the sulfur content of diesel fuel to 0.05 percent by weight is technologically feasible and readily available;

That a reduction of the sulfur content of diesel fuel to 0.05 percent by weight (approximately an 80 percent reduction) will significantly reduce ambient concentrations of sulfur dioxide and sulfates and will significantly improve visibility. In addition, ambient concentrations of suspended particulate matter will be reduced;

That the improvement in air quality attributable to the reduction in sulfur compound emissions from motor vehicles is expected to result in substantial health benefits;

That the overall air quality benefits of the regulation from reduced health and materials damage are economically significant;

That this action amending Board regulations is necessary and appropriate to attain and maintain separately and independently each of the state and national ambient air quality standards referred to above which are violated in the South Coast Air Basin;

That the problems of inter-basin air transfer and pollutant mixing between the South Coast Air Basin and Ventura County are well known and documented and that therefore any regulation limiting the sulfur content of diesel fuel should be applicable throughout the entire South Coast Air Shed, i.e., the South Coast Air Basin and Ventura County;

That there are a sufficient number and variety of refiners who produce and/or market diesel fuel in the South Coast Air Shed to ensure that adequate supplies of both vehicular diesel fuel and non-vehicular diesel fuel will be available in the South Coast Air Shed under this regulation;

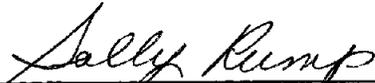
That the Board has examined both the direct and indirect costs to the public of adopting this regulation and has determined that those costs are justified by the emissions reductions which will result from the regulation;

That an exemption for small refiners in the South Coast Air Shed from a regulation to control the sulfur content of motor vehicle diesel fuel to 0.05 percent by weight is necessary to prevent an undue economic hardship on such refiners;

That the February 9, 1981 and June 12, 1981 staff reports, the Response to Significant Environmental Issues dated July 30, 1981, and the information presented at the April 22 and 23, 1981 Board hearings and July 29 and 30, 1981 Board hearings adequately address the environmental issues and other impacts associated with this proposed regulation and that the Board concurs in the staff's finding that no significant adverse environmental or other impacts are likely to result from adoption and implementation of the proposed regulation.

NOW, THEREFORE BE IT RESOLVED, that the Board amends Title 13, California Administrative Code, Chapter 3, Subchapter 5, Section 2252, to add a regulation limiting the sulfur content of diesel fuel for use in motor vehicles in the South Coast Air Basin and Ventura County as set forth in Attachment A to this Resolution.

I certify that the above is a true and correct copy of Resolution 81-47, as adopted by the Air Resources Board

  
\_\_\_\_\_  
Sally Rump, Board Secretary

ATTACHMENT A

REGULATION TO CONTROL THE SULFUR CONTENT  
OF MOTOR VEHICLE DIESEL FUEL IN THE SOUTH COAST  
AIR BASIN AND VENTURA COUNTY

2252. Sulfur Content

(a) No person shall sell, offer for sale, or deliver for sale at retail in California, any unleaded gasoline which has a sulfur content greater than 400 parts per million by weight after November 13, 1978, or greater than 300 parts per million by weight after January 1, 1982.

(b) The maximum sulfur content limitations specified in the foregoing subdivision (a) shall be determined by ASTM Test Method D 2622 (67 or latest).

(c) For the purposes of this section, the term "unleaded gasoline" shall mean gasoline with a lead content no greater than 0.05 gram per gallon as determined by ASTM Test Method D 3237.73.

(d) Effective January 1, 1985, no person shall sell, produce for sale, offer for sale, or deliver for sale in the South Coast Air Basin or Ventura County any diesel fuel, except that specifically exempted by the Executive Officer pursuant to subdivision (h), for use in motor vehicles which has a sulfur content greater than 500 parts per million (0.05 percent) by weight.

(e) The sulfur content limitation specified in subsection (d) shall be determined by ASTM Test Method D 2622 (77), or equivalent.

(f) For the purposes of this section, the term "diesel fuel" shall mean any petroleum distillate as defined by ASTM Test Method D 975 (77), excluding No. 4-D.

(g) For the purposes of this section, the term "small refiner" shall mean any refiner who owns or operates a refinery (or refineries) located in the South Coast Air Basin and/or Ventura County with a total combined crude oil capacity of not more than 50,000 barrels per day and who does not own or operate refineries in the United States with a total combined crude oil capacity of more than 137,500 barrels per day.

(h) (1) The provisions of subsection (d) shall not apply to an amount of diesel fuel produced by a small refiner as defined in subsection (g) in the South Coast Air Basin and/or Ventura County equal to 120 percent of the highest annual diesel fuel production level in the South Coast Air Basin and/or Ventura County of the three calendar years immediately preceding the date of adoption of subsection (d). This exemption shall not apply to any fuel not produced in the South Coast Air Basin or Ventura County.

(2) To qualify for this exemption, a refiner shall submit to the Executive Officer of the Air Resources Board an Application for Exemption for each refinery which shall specify the quantity and ASTM grade of diesel fuel produced at each refinery in the South Coast Air Basin or Ventura County during each of the three calendar years immediately preceding the date of adoption of subsection (d) and data on crude oil capacity and ownership for the refineries which it owns and operates in the South Coast Air Basin and/or Ventura County and in the United States. Within 90 days

of receipt of the application, the Executive Officer of the Air Resources Board shall grant or deny the exemption, in writing. The exemption shall be granted if the Executive Officer determines that the applicant meets the provisions of this subsection and subsection (g) and shall be rescinded when such provisions are no longer met.

(3) In addition to the reporting requirements of subsection (i) below, beginning on January 1, 1985, each small refiner who is granted an exemption shall report on a quarterly basis to the Executive Officer of the Air Resources Board the quantity and ASTM grade of diesel fuel produced in the South Coast Air Basin and Ventura County during that calendar quarter. Such reports shall be provided within 45 days of the close of each quarter. Each such refiner shall also be required to report to the Executive Officer within 90 days of project completion, any refinery addition or modification which would affect the crude oil capacity for refineries owned and operated in the South Coast Air Basin, Ventura County and the United States.

(i) (1) Each refiner shall perform sampling and testing of the diesel fuel stored in all refinery tank(s) owned or operated in the South Coast Air Basin and Ventura County as set forth in this subsection. If a refiner blends diesel fuel components directly to pipelines, tankships, railway tankcars or trucks and trailers, the loading(s) shall be sampled and tested for sulfur content by the refiner or authorized contractor. All sampling and testing shall be performed a minimum of four times per month at least six days apart and the results shall be reported individually (and, for information purposes only, as a diesel fuel production weighted average sulfur content) to the Executive Officer of the Air Resources Board within

45 days of the close of each quarter. In the event a refiner in the South Coast Air Basin or Ventura County produces diesel fuel not specifically exempt from the provisions of subsection (d) with a sulfur content exceeding that allowed in subsection (d), such refiner shall maintain records acceptable to the Executive Officer of the Air Resources Board which show that the diesel fuel is being produced for transshipment out of the South Coast Air Basin or Ventura County or sold for non-vehicular use. Failure to provide such documentation upon request shall be deemed a violation of subsection (d).

(2) Each person importing diesel fuel for sale into the South Coast Air Basin or Ventura County by tankship, pipeline, railway tankcars, or trucks and trailers, shall sample and test such fuel. The results of such tests shall be reported on a quarterly basis to the Executive Officer of the Air Resources Board within 45 days of the close of each quarter.

(3) The Executive Officer of the Air Resources Board may perform any sampling and testing deemed necessary to determine compliance by any person with the requirements of subsection (d) and may require that special samples be drawn and tested at any time.

~~(d)(1)~~ (j)(1) Any person who cannot comply with the requirements set forth in subdivision (a) or (d) of this section because of unreasonable economic hardship, unavailability of equipment or lack of technological feasibility may apply to the Executive Officer of the Air Resources Board for a variance.

The application shall set forth:

- (A) The specific grounds upon which the variance is sought;
- (B) The proposed date(s) which compliance with the sulfur content limitations in subdivision (a) or (d) will be achieved; and

(C) A plan reasonably detailing the method by which compliance will be achieved.

(2) Upon receipt of an application for a variance, the Executive Officer shall hold a hearing to determine whether, and under what conditions and to what extent, a variance from the requirements established by subdivision (a) or (d) of this section is necessary and will be permitted. Notice of the time and place of the hearing shall be sent to the applicant by certified mail not less than 30 days prior to the hearing. Notice of the hearing shall also be published in at least one newspaper of general circulation and shall be sent to every person who requests such notice, not less than 30 days prior to the hearing.

(3) At least 30 days prior to the hearing, the application for the variance shall be made available to the public for inspection. Interested members of the public shall be allowed a reasonable opportunity to testify at the hearing and their testimony shall be considered.

(4) No variance shall be granted unless all of the following findings are made:

(A) That the applicant for the variance is, or will be, in violation of the requirements established by subdivision (a) or (d) of this regulation;

(B) That, due to unreasonable economic hardship, unavailability of equipment or lack of technological feasibility beyond the reasonable control of the applicant, requiring compliance would result in either (i) an arbitrary or unreasonable taking of property, or (ii) the practical closing and elimination of a lawful business; and

(C) That such taking or closing would be without a corresponding benefit in reducing air contaminants.

(5) Any variance order shall include the date(s) by which compliance with the sulfur content limitations in subdivision (a) or (d) will be achieved and any other condition(s) including, where appropriate, increments of progress, that the Executive Officer of the Air Resources Board, as a result of the testimony received at the hearing, finds necessary.

(6) If the Executive Officer determines that, due to conditions beyond the reasonable control of the applicant, the applicant needs an immediate variance from the requirements established by subdivision (a) or (d) of this section, the Executive Officer may hold a hearing without complying with the provisions of subdivision ~~(d)(2)~~ (j)(2) or subdivision ~~(d)(3)~~ (j)(3) above. No variance granted under the provisions of this paragraph may extend for a period of more than 45 days. The Executive Officer shall maintain a list of persons who in writing have informed the Executive Officer of their desire to be notified by telephone in advance of any hearing held pursuant to this subdivision, and shall provide advance telephone notice to any such person.

(7) Upon the application of any person, the Executive Officer of the Air Resources Board may review and for good cause modify or revoke a variance from the requirements of subdivision (a) or (d) after holding a hearing in accordance with the provisions of this subdivision.

# Memorandum

To : Huey D. Johnson  
Secretary  
Resources Agency

Date : August 19, 1981

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

From : 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 decision and response to environmental comments raised during the comment period.

  
Sally Rump  
Board Secretary

attachments  
Resolution 81-47

RECEIVED BY  
Office of the Secretary

AUG 19 1981

Resources Agency of California

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Further Consider Amendment to Title 13, California Administrative Code, Chapter 3, Subchapter 5 to Add a Regulation Limiting the Sulfur Content of Diesel Fuel for Use in Motor Vehicles in California.

Agenda Item Nos: 81-6-2, 81-14-1

Public Hearing Dates: April 22 and 23, 1981 and July 29 and 30, 1981

Response Date: July 30, 1981

Issuing Authority: Air Resources Board

Comment: The regulation may result in increased fuel costs to public and private transit operators which will be passed on to consumers in the form of increased fares or will result in reduced public transportation service. A decrease in service may result in increases in vehicular-generated pollutant emissions due to a shift of ridership from buses to private automobiles.

Response: SCRTD indicated in its testimony that adopting a sulfur content of vehicular diesel fuel regulation would result in increased fuel costs to SCRTD requiring either an increase in bus fares or a reduction in public transportation service.

If SCRTD chooses to reduce its public transportation service in response to increased fuel costs, a negative environmental impact could result if riders choose to drive private automobiles instead of riding the bus. However, SCRTD can choose the more likely option of increasing fares rather than reducing service. Page 72 of the June 12, 1981 staff report indicates that if the increased cost were uniformly passed on to the riders, a commuter who boards the bus 500 times per year would incur a total cost increase of \$2.15 to \$3.20 per year. SCRTD agreed during the hearing that, based on the assumption that the increased fuel cost would be 6.2¢ per gallon, the staff's analysis was correct.

Additionally, page 73 of the staff report discusses the relationship between fare increases and ridership. Studies show that the relationship is inelastic; that is, ridership is not sensitive to increased fares. History has shown that recently SCRTD has, in fact, increased its base fare by 44%, while ridership increased 18.3% over the same period of time.

Therefore, since SCRTD has the option of increasing its fares to recover any increase in the price of diesel fuel without incurring a loss in ridership, the adoption of the regulation is not expected to result in a negative environmental impact due to a switch from buses to private automobiles.

RECEIVED BY  
Office of the Secretary

AUG 19 1981

Resources Agency of California

State of California  
AIR RESOURCES BOARD

Resolution 81-48

July 29, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 1035-83a entitled "Assessment of Gaseous and Particulate Dry Acid Deposition in California," has been submitted by the Air and Industrial Hygiene Laboratory, California Department of Health Services, to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

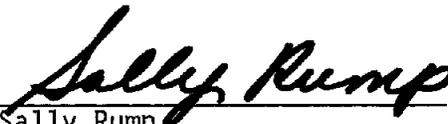
Proposal Number 1035-83a entitled, "Assessment of Gaseous and Particulate Dry Acid Deposition in California," submitted by the Air and Industrial Hygiene Laboratory, California Department of Health Services for a total amount not to exceed \$155,254,

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1035-83a entitled, "Assessment of Gaseous and Particulate Dry Acid Deposition in California," submitted by the Air and Industrial Hygiene Laboratory, California Department of Health Services for a total amount not to exceed \$155,254.

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed, in an amount not to exceed \$155,254.

I certify that the above is a true and correct copy of Resolution 81-48 as passed by the Air Resources Board.

  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO.: 81-14-3b.1  
DATE: July 29, 1981

ITEM: Research Proposal No. 1035-83a entitled "Assessment of Gaseous and Particulate Dry Acid Deposition in California."

RECOMMENDATION: Adopt Resolution 81-48 approving Proposal No. 1035-83a for funding in an amount not to exceed \$155,254.

SUMMARY: The importance of dry deposition processes in the overall phenomenon of acid deposition has only recently been recognized. Specifically, a recent model of the South Coast Air Basin showed that dry deposition accounted for approximately 30 percent of the emitted acid precursors, which is about fifteen times the wet deposition value. It is also thought that the potential for environmental insult is greater for dry deposition owing to an undiluted and highly localized acidic dose to the receptor surface.

Although dry deposition samples are being collected on a routine basis by the national monitoring network, the data collected thus far are not well understood. In fact, there is no currently existing methodology that is widely accepted as adequate for quantifying dry acid deposition.

The objective of this two-year, two-phase project are to: 1) assess the magnitude of gaseous and particulate dry acid deposition at various California sites and compare these values to wet deposition values which have been documented in earlier studies; 2) provide reference dry deposition values for comparison with future data in order to establish trend information; 3) develop measurement techniques; and 4) investigate acidic particle size distributions and deposition on test surfaces.

In Phase I of the study, acid gases SO<sub>2</sub> and NO<sub>2</sub> will be measured at various sampling sites. Ambient concentrations of these acids and their precursors will be used, together with known deposition velocity values, to estimate deposition rates. The technique, known as the concentration method, will be compared

with the gradient method, which will be developed during Phase II of the study.

In the gradient method, acid precursor samples will be obtained at several levels above the ground, and deposition rates be calculated based on the vertical concentration gradient. Particle deposition will also be studied on various types of surfaces, and size distribution of acidic aerosol particles will be obtained using a newly developed acid particle filter sampler.

This study will provide valuable information on the relative contribution of dry deposition to the overall phenomenon of acid deposition in California. In addition, the proposed study would increase our understanding of the chemistry and formation of atmospheric acidity. This is expected to be critical to the Board in developing strategies to ensure acceptable levels of atmospheric acidity are not exceeded.

State of California

AIR RESOURCES BOARD

Resolution 81-49

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Section 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 1038-83 entitled " Health Effects from the Inhalation of Oxidant Air Pollutants as Related to the Immune System" has been submitted by the University of California at Davis to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 1038-83 entitled "Health Effects from the Inhalation of Oxidant Air Pollutants as Related to the Immune System" submitted by the University of California at Davis for an amount not to exceed \$100,372;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1038-83 entitled "Health Effects from the Inhalation of Oxidant Air Pollutants as Related to the Immune System" submitted by the University of California at Davis for an amount not to exceed \$100,372.

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed, in an amount not to exceed \$100,372.

I certify that the above is a true and correct copy of Resolution 81-49 as passed by the Air Resources Board.

  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-14-3b.2  
DATE: July 29, 1981

- ITEM: Research Proposal Number 1038-83 entitled "Health Effects from the Inhalation of Oxidant Air Pollutants as Related to the Immune System".
- RECOMMENDATION: Adopt Resolution No. 81-49 approving Research Proposal No. 1038-83 for funding in an amount not to exceed \$100,372
- SUMMARY: This proposal is submitted to extend research efforts by the proponents. The previously reported work was done under ARB sponsorship. Findings of this earlier work indicate that ozone at concentrations as low as 0.16 ppm (the lowest value tested), administered over a two-week period, produced responses closely related to asthma in the mice under study. This response was due to an ozone-induced increase in sensitivity to a common allergen. This increased sensitivity was associated with increased numbers of immunologically active cells in the airway membranes of such animals. The earlier studies also demonstrated an unexpected finding in terms of viral infectivity. Two weeks of ozone exposure at 0.64 or 0.40 ppm inhibited respiratory viral infection in the mice studied.

#### Ozone-Lung Sensitization Experiments

The work to be performed in these experiments is related to the asthma initiation process and would be done primarily with the mouse model. Mice do not exhibit an obvious asthma-like reaction to inhaled allergens. However, much of what is known about the human immune system has been inferred from experimental work with mice. The end points to be assessed in the mice are analogous to asthma, in that similar immune system components and agents are actively involved. Ozone at 0.10 ppm would be employed in this study as well as one other level, depending on the initial study results.

While inhaled allergens do not provoke a direct asthmatic response in mice, guinea pigs do respond somewhat as human asthmatics respond, mainly with marked constriction of pulmonary smooth muscle. The investigators would attempt to demonstrate that the protocols employed to produce effects in mice would produce an asthma-like constriction of airways of the guinea pigs. The exposure and sensitization protocol employed in the first two studies on mice would be employed in these experiments.

Ozone at 0.2 ppm would be used for the first of two studies. The ozone level for the second study would be derived from the results of the initial effort. End points to be assayed for the guinea pigs would include observation of airway constriction following allergen inhalation, tissue alteration, and possible cellular changes.

#### Ozone-Viral Infectivity Experiments

The previous findings of ozone inhibition of the viral infection process by the investigator were totally unexpected. While they have postulated explanations for their observations further investigation was deemed necessary by them to allow for a fuller understanding of this phenomenon. The work proposed would be directed at investigating the nature of interaction between 0.16 ppm ozone given before and after viral infection initiation. The lower ozone level may well produce findings different from the previous work. The infectivity study would employ 250 mice. They would be split into control and exposed groups. The exposed animals would be exposed to 14 days of ozone. At the end of this period the differential mortality rates will be analyzed and a visual number survey, as well as interferon and antibody levels, and location studies will be undertaken.

State of California

AIR RESOURCES BOARD

Resolution 81-50

WHEREAS, an unsolicited proposal to augment Contract Number AO-100-32, entitled, "Rebuild California Air Resources Board Field Fumigation Facility and Maintain for Experimental Use" has been submitted by the University of California, Riverside to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

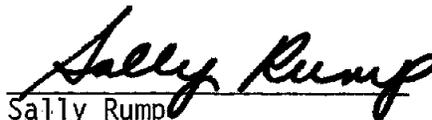
An Augmentation to Contract Number AO-100-32 entitled "Rebuild California Air Resources Board Field Fumigation Facility and Maintain for Experimental Use" for an amount not to exceed \$9,168,

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

An Augmentation to Contract Number AO-100-32 entitled "Rebuild California Air Resources Board Field Fumigation Facility and Maintain for Experimental Use" for an amount not to exceed \$9,168.

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed, in an amount not to exceed \$9,168.

I certify that the above is a true and correct copy of Resolution 81-50 as passed by the Air Resources Board.



Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-14-3b.3  
DATE: July 29, 1981

- ITEM: Proposal to augment Contract Number A0-100-32 entitled "Rebuild California Air Resources Board Field Fumigation Facility and Maintain for Experimental Use", University of California, Riverside, Dr. Ray Thompson.
- RECOMMENDATION: Adopt Resolution No. 81-50 approving Proposed Augmentation of Contract A0-100-32 for an amount not to exceed \$9,168.
- SUMMARY: This proposal is a request for augmentation of an ongoing effort to rebuild, improve and refurbish 20 plant fumigation chambers located at University of California, Riverside. After the original contract was signed, a decision was made by staff and the contractor to rebuild the chambers on a larger site on the west campus. Chamber design was also changed to increase useable experimental area, improve temperature control and allow for quick disassembly in case of severe weather. The original chamber facility relied on ambient oxidants for fumigations. The new facility will have the added flexibility of controlling ozone concentration through an ozonizer. These improvements require (1) repair of an existing OREC ozonizer, (2) additional charcoal filters, and (3) Teflon sampling tubing.

State of California  
AIR RESOURCES BOARD

RESOLUTION 81-51

July 30, 1981

**WHEREAS**, Thomas C. Austin served as the Air Resources Board's Vehicle Pollution Advisor in 1975 and 1976, a Deputy Executive Officer in 1977 to 1978, and Executive Officer since November 1978; and

**WHEREAS**, he is nationally recognized for his talents as an automotive engineer, particularly for his understanding of emission control systems; and

**WHEREAS**, his personal commitment has advanced the development of air pollution control technology and contributed to increased automotive energy efficiency; and

**WHEREAS**, his administrative policies have strengthened the technical expertise of the staff, for which the Board will benefit for many future years; and

**WHEREAS**, his expertise has enabled the Air Resources Board to operate an air pollution control program that is a trend-setter for the nation's clean air policies; and

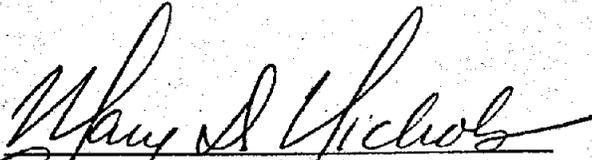
**WHEREAS**, his forceful personality and uncompromising principles have earned him the enmity as well as the respect of some of those who have challenged him; and

**WHEREAS**, his leadership has enabled the Board to maintain the world-wide reputation it has earned in the field of air pollution research and regulation; and

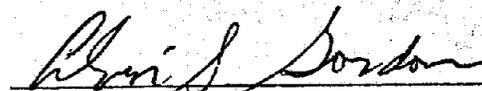
**WHEREAS**, Thomas C. Austin is leaving the ARB to create his own consulting firm.

**NOW, THEREFORE, BE IT RESOLVED**, the Air Resources Board appreciates his years of dedicated leadership that contributed greatly to the Board's accomplishments; and

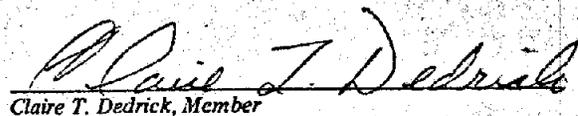
**BE IT FURTHER RESOLVED**, that the Board expresses its best wishes for his future success.

  
Mary D. Nichols, Chairwoman

  
Laurence S. Caretto, Vice-Chairman

  
Alvin S. Gordon, Member

  
James G. Leathers, Member

  
Claire T. Dedrick, Member

State of California  
AIR RESOURCES BOARD

RESOLUTION 81-52

July 30, 1981

**WHEREAS**, Gary Rubenstein has been an Air Resources Board staff member since graduating from the California Institute of Technology in 1973, working in the Vehicle Emissions Control and Stationary Source Control Divisions, and has been a Deputy Executive Officer since July 1977; and

**WHEREAS**, he is widely respected for his technical knowledge of air pollution control systems for both automobiles and industrial sources; and

**WHEREAS**, his technical expertise has been valuable in influencing the policies of many ARB programs; and

**WHEREAS**, his broad technical knowledge has enabled him to develop many innovative solutions to regulatory problems; and

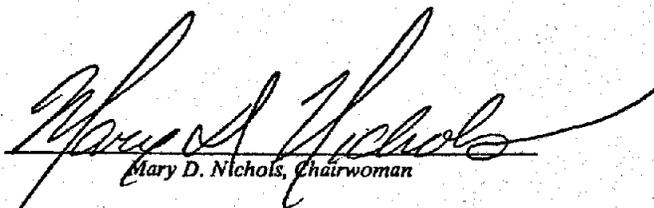
**WHEREAS**, he energetically and capably represented the ARB in many legislative hearings; and

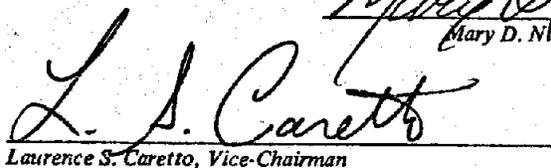
**WHEREAS**, his high spirits and good humor failed to cover up a deep, serious commitment to the success of the California air pollution control program; and

**WHEREAS**, Gary Rubenstein is leaving the ARB to create his own consulting firm.

**NOW, THEREFORE, BE IT RESOLVED**, the Air Resources Board appreciates his many contributions to its efforts; and

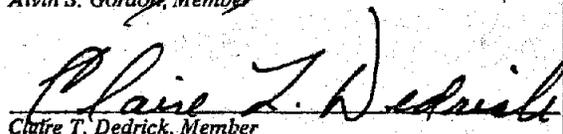
**BE IT FURTHER RESOLVED**, that the Board expresses its best wishes for his future success.

  
Mary D. Nichols, Chairwoman

  
Laurence S. Caretto, Vice-Chairman

  
Alvin S. Gordon, Member

  
James G. Leathers, Member

  
Claire T. Dedrick, Member

State of California  
AIR RESOURCES BOARD

Resolution 81-53

August 26, 1981

Agenda Item No.: 81-16-1

WHEREAS, Section 39601 of the Health and Safety Code authorizes the Air Resources Board (ARB) 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, Sections 43101 and 43104 of the Health and Safety Code authorize the Board to adopt new vehicle emission standards and test procedures in order to control or eliminate air pollution caused by motor vehicles;

WHEREAS, Section 43100 of the Health and Safety Code authorizes the Board to certify new motor vehicles and engines;

WHEREAS, Section 43102 of the Health and Safety Code prohibits certification of new vehicles or engines which do not meet the applicable standards and test procedures;

WHEREAS, Section 43151 of the Health and Safety Code prohibits the use or registration of a new motor vehicle or a new vehicle engine which has not been certified as meeting California emission standards;

WHEREAS, the Board has established in Sections 1956.6 and 1956.7 of Title 13, California Administrative Code, exhaust emission standards and test procedures for 1980 and subsequent model heavy-duty engines and vehicles which are generally applicable to engines used in buses;

WHEREAS, such standards require significantly lower emissions of oxides of nitrogen than the equivalent heavy-duty engine standards promulgated by the Environmental Protection Agency;

WHEREAS, hydrocarbons and oxides of nitrogen are precursors of oxidant (smog), oxides of nitrogen emissions contribute to ambient concentrations of nitrogen dioxide, total suspended particles and visibility reducing particles, and oxides of nitrogen are major contributors to acid rain in California;

WHEREAS, the South Coast Air Basin experiences frequent exceedances of the national and state ambient air quality standards for nitrogen dioxide, total suspended particles, and oxidant/ozone (smog) and the state ambient air quality standard for visibility;

WHEREAS, similar exceedances (except for national ambient air quality standard for nitrogen dioxide) occur in most air basins in the state;

WHEREAS, the Southern California Rapid Transit District (RTD) has petitioned the ARB to be allowed to use federally-certified engines rather than California-certified engines in the substantial number of buses it purchases between 1980 and 1982, on the basis of fuel penalty, performance loss, and inability to purchase a specific 30-foot bus with a California engine;

WHEREAS, after considering RTD's petition at a public hearing on August 27, 1980, the Board determined it could not take final action on the record before it and appointed a subcommittee of members Dr. Laurence Caretto and Dr. Alvin Gordon to analyze new information presented by RTD at the hearing, to resolve questions that had arisen at the hearing, and to present a full report to the Board;

WHEREAS, the Legislature is presently considering proposed legislation which would provide that no engine in a bus, as defined in the Health and Safety Code, and used for transporting passengers shall be required to meet emission standards more stringent than those adopted by the Environmental Protection Agency;

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

WHEREAS, the subcommittee of Dr. Caretto and Dr. Gordon has submitted to the Board its report, which concludes that application of the California standards to buses operated by RTD and others is a significant, feasible and cost-effective means of reducing emissions of hydrocarbons plus oxides of nitrogen;

WHEREAS, the Board has scheduled a hearing for September 23, 1981, to consider amending its exhaust emission standards and test procedures for 1981 and subsequent model year heavy-duty engines to establish criteria and procedures under which the Executive Officer may permit the use of federally-certified heavy-duty engines in limited situations when California-certified engines are unavailable;

WHEREAS, the Board has conducted a public hearing to consider the petition submitted by RTD; and

WHEREAS, the Board finds:

That the use of California-certified engines rather than federally-certified engines in the 940 buses recently purchased by RTD would result in a reduction of at least 1.4 tons per day of hydrocarbons plus oxides of nitrogen emissions at a cost of \$0.47 to \$0.53 per pound of pollutant, taking into account fuel penalties, asserted performance penalties and emissions which may arise from diversion of passengers to private automobiles;

That there appear to be 30-foot buses with California engines available to RTD;

That the current exhaust emission standards and test procedures for heavy-duty engines do not permit waivers or exemptions from the standards;

That the California heavy-duty emissions standards are more cost-effective than most stationary source control measures now being considered by air pollution control districts;

That denial of the RTD petition would have no significant adverse environmental impact and therefore no feasible alternatives or mitigation measures are required; and

That requiring emission standards for California buses to be no more stringent than those adopted by the Environmental Protection Agency would ultimately increase hydrocarbon plus oxides of nitrogen emissions statewide by approximately 21.3 tons per day.

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby denies the petition of the Southern California Rapid Transit District.

BE IT FURTHER RESOLVED, that if the Board at its September 23 hearing amends the heavy-duty engine standards and test procedures to permit the use of federally-certified engines in limited situations when California-certified engines are unavailable, and the Southern California Rapid Transit District is unable to obtain California-certified engines for its 30-foot buses, the District may seek such relief pursuant to the amended standards and test procedures.

BE IT FURTHER RESOLVED, that the Board urges the Legislature to retain the authority of the Air Resources Board to set more stringent standards for buses in California than applicable federal standards.

I certify that the above is a true and correct copy of Resolution 81-53, as adopted by the Air Resources Board.

  
\_\_\_\_\_  
Sally Rump, Board Secretary

State of California  
AIR RESOURCES BOARD

Resolution 81-54

August 26, 1981

Agenda Item No.: 81-16-2

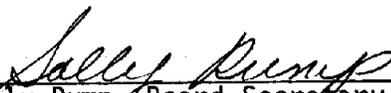
BE IT RESOLVED, that the Air Resources Board recognizes the need to develop an effective program to conserve and to protect those areas in the State of California where air quality standards are not exceeded.

BE IT FURTHER RESOLVED, that the Air Resources Board endorses the process by which the California Air Pollution Control Officers' Association/Air Resources Board committee developed the model rule presented to the Board at the August 26 meeting.

BE IT FURTHER RESOLVED, that in recognition of the need for flexibility in adopting local rules, the Board encourages local districts to develop rules which are consistent with the following concepts and which are equivalent in impact to the rule developed by the CAPCOA/ARB committee:

- (1) A single one-step permitting process, for attainment as well as nonattainment pollutants, administered by air pollution control districts.
- (2) The requirement of best available control technology as defined by applicable local district rules and regulations for all new and modified sources in California.
- (3) Inclusion of cargo carrier emissions to determine the net emissions from all new sources.
- (4) Requirement of offsets in nonattainment areas and in Class I and Class I impact areas in all cases and in all other attainment areas when available.
- (5) The use of emission increments for attainment pollutants when offsets are not available.

I certify that the above  
is a true and correct copy  
of Resolution 81-54, as adopted  
by the Air Resources Board.

  
Sally Rump, Board Secretary

State of California  
AIR RESOURCES BOARD

Resolution 81-55

September 24, 1981

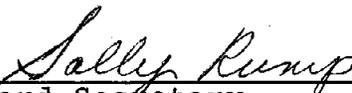
WHEREAS, John Gibson has regularly attended Citizens Advisory Council meetings for the past three years on behalf of John Sproul;

WHEREAS, John Gibson has extensive background and interest in the legal aspects of air pollution control as assistant general counsel for Pacific Gas and Electric;

WHEREAS, John Sproul has been unable to attend Citizens Advisory Council meetings because of his responsibilities as executive vice-president of Pacific Gas and Electric;

NOW, THEREFORE, BE IT RESOLVED, that John Gibson is appointed to membership on the Citizens Advisory Council replacing John Sproul.

I certify that the above is a true and correct copy of Resolution 81-55 as adopted by the Air Resources Board.

  
\_\_\_\_\_  
Board Secretary

State of California  
AIR RESOURCES BOARD

Resolution 81-56

September 24, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 929-76 entitled "Responses to Oxidants" has been submitted by the University of California at Santa Barbara to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

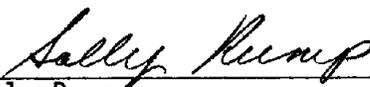
Proposal Number 929-76 entitled "Responses to Oxidants" has been submitted by the University of California at Santa Barbara for an amount not to exceed \$167,030;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 929-76 entitled "Responses to Oxidants" submitted by the University of California at Santa Barbara for an amount not to exceed \$167,030,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$167,030.

I certify that the above is a true and correct copy of Resolution 81-56 as adopted by the Air Resources Board.

  
\_\_\_\_\_  
Sally Rump  
Board Secretary

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-19-3 b1  
Date: September 23, 1981

ITEM: Research Proposal No. 929-76 entitled "Responses to Oxidants."

RECOMMENDATION: Adopt Resolution 81-56 approving Research Proposal No. 929-76 for funding in an amount not to exceed \$167,030.

SUMMARY: California smog is a mixture of many compounds. Prominent are photochemical oxidants, NO<sub>2</sub>, aerosols and hydrocarbons. The photochemical oxidant portion is a complex mix of ozone, peroxides and other organic oxidizers, particularly peroxyacyl nitrates (PANs). Considerable research effort has been brought to bear on elucidating the effects of ozone on plants and animals to the extent that a fair picture now exists of the hazards associated with this pollutant. PANs, (specifically peroxyacetyl nitrate) are another case. Early vegetation research was done to identify PAN damage followed by limited exposure work to confirm the field finding that concentrations in the 100-1000 ppb range affect certain plants. Very limited work has been done employing PAN in human or animal exposure work. Among such limited research is the early work by Drs. Gliner and Horvath at U.C. Santa Barbara showing pulmonary function effects at 0.24 ppm PAN.

Recent regulatory actions by EPA have brought up the question of how adverse effects of the oxidant complex might differ from those of ozone alone. EPA has now established an ozone standard numerically less stringent than the earlier oxidant standard. Such a standard may well protect most of the U.S. where ozone rather than other oxidants is present. One of the central issues regarding their change in the standard from oxidant to ozone was whether removing other oxidants from consideration might allow potentially harmful effects. In order to investigate this more fully, the Board funded a study last year to begin a planned three-year effort. This proposal is to complete year two. One element of this study is to determine whether acute interaction effects can be seen between O<sub>3</sub> and PAN (peroxyacetyl nitrate) on metabolic, pulmonary and neurological responses in man. Subjects numbering between 10 and 15 will undergo moderate exercise (at approximately 50 percent of their maximal capacity) in 30-minute shifts followed by a 30-minute intermission of exercise, and then repeated exercise for another hour. During the rest periods the subjects will perform mental accuracy, motor-skill and pulmonary function testing. Previous studies by the proponent

have demonstrated these factors to be affected by ozone exposure. Heart rate, oxygen consumption and carbon dioxide production will also be measured to indicate the metabolic state of the individuals at various times during the exposure. E.E.G. tracings will also be taken at the end of each exercise period to obtain information on nervous system status.

The second part of this study would extend previous efforts to examine the response of subjects to different regimes of repeated ozone exposure. Specifically, work would be done to: 1) provide a more definitive statement concerning effects of prior exposure to low levels of O<sub>3</sub>; 2) determine the variables that will predict whether an individual will be sensitized by low levels of ozone, and; 3) determine the extent of sex differences in sensitivity to ozone, and the degree to which these differences are related to differences in pulmonary capacities and to differences in work capacity.

State of California  
AIR RESOURCES BOARD

Resolution 81-57  
September 24, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 1042-85 entitled, "Effects of SO<sub>2</sub> and Ozone on Growth Productivity, Physiology and Biochemistry of Crops", has been submitted by the University of California at Davis to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

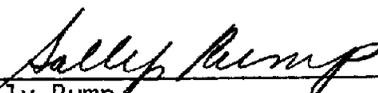
Proposal Number 1042-85 entitled, "Effects of SO<sub>2</sub> and Ozone on Growth Productivity, Physiology and Biochemistry of Crops", submitted by the University of California at Davis, for an amount not to exceed \$115,531;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1042-85 entitled, "Effects of SO<sub>2</sub> and Ozone on Growth Productivity, Physiology and Biochemistry of Crops", submitted by the University of California at Davis, for an amount not to exceed \$115,531,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$115,531.

I certify that the above is a true and correct copy of Resolution 81-57 as adopted by the Air Resources Board.

  
\_\_\_\_\_  
Sally Rump  
Board Secretary

State of California  
AIR RESOURCES BOARD

ITEM NO.: 81-19-3 b2  
DATE: September 23, 1981

ITEM: Research Proposal No. 1042-85 entitled "Effects of SO<sub>2</sub> and Ozone on Growth Productivity, Physiology and Biochemistry of Crops".

RECOMMENDATION: Adopt Resolution 81-57 approving Research Proposal No. 1042-85 for funding in an amount no to exceed \$115,531.

SUMMARY: Much of the work that makes up our current understanding of how air pollution affects plants is derived from the study of rather simple end points such as visible foliar injury or the reduction in the overall weight of plant material at the end of a growing season. Such work has commonly been done under uncontrolled field conditions or in greenhouses. More recently, we and others have tried to consider more subtle factors like protein or carbohydrate content. What is proposed here is a major departure from the more traditional field or greenhouse studies. The proponent would apply potentially more sensitive plant physiological and biochemical methods in conjunction with careful control of environmental parameters to assure a straightforward assessment of effects. In effect, this study would investigate the cellular level implications of air pollution in terms of whole plant exposure. Sulfur dioxide and ozone are the pollutants of interest. They would be employed at several concentrations, both singly and in combination. As with cellular-level assessments of pollutant effects on animal systems, the information obtained would help explain related whole-plant effects. This would allow detection of changes before visible injury occurs and may provide data that can be readily extrapolated to other species. This is the second year of a projected three year study.

This study is divided into three related efforts which address different facets of O<sub>3</sub> and SO<sub>2</sub> effects as a multi-disciplinary effort. In all cases the investigators intend to employ several different plant species and varieties within each species to allow addressing of possible mechanisms for expected variation in sensitivity to the pollutants to be employed.

The first part of this study will concentrate on the effects of SO<sub>2</sub> and O<sub>3</sub> on the viability of pollen and pollen tube growth under controlled temperature and humidity conditions. This would allow careful study of

the effects of  $\text{SO}_2$  and  $\text{O}_3$  on this important stage of plant reproduction.

The second part of the study would center on how exposure to  $\text{SO}_2$  and ozone would affect leaf function in terms of water and solute movement. Air pollutants are known to affect the stomata of many plants. These act as the "first line of defense" for plants to prevent the entry of pollutants to less protected internal air space cell surfaces. Once inside, it is thought that the pollutants will have an effect on the metabolic activity of cells through effects on membrane function of such cells.

Finally, the third part of this study will concentrate on the biochemical effects of  $\text{SO}_2$  on plants. It is the investigator's observation that  $\text{SO}_2$  exposures initiate the release of "stress" ethylene and ethane in response to lipid peroxidation. Ethylene is also known to be produced in response to other stresses like physical injury.

Specifically the investigators would expose plants to varying amounts of  $\text{SO}_2$  and measure the levels of "stress" ethylene and ethane. An attempt will be made to study whether the level of ethylene produced is related to the relative sensitivity of the plants employed. Efforts will also be made to determine if ethylene enhances or reduces the plant's tolerance to  $\text{SO}_2$  through the use of agents known to block its production. The investigator would also study the fate of atmospheric  $\text{SO}_2$  in soils by employing radio-chemical methods.

The results of these studies should provide valuable insight into the cellular level effects of pollutants on vegetation and improve our total understanding of the effects of pollutants on California crops.

State of California  
AIR RESOURCES BOARD

Resolution 81-58

September 24, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 1043-85 entitled "Characterization and Control of Primary Carbon Particle Air Quality in the South Coast Air Basin", has been submitted by California Institute of Technology, to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

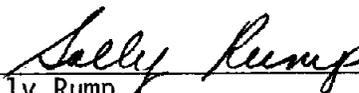
Proposal Number 1043-85 entitled, "Characterization and Control of Primary Carbon Particle Air Quality in the South Coast Air Basin", submitted by the California Institute of Technology for a total amount not to exceed \$321,561;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1043-85 entitled, "Characterization and Control of Primary Carbon Particle Air Quality in the South Coast Air Basin", submitted by the California Institute of Technology for a total amount not to exceed \$321,561,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$321,561

I certify that the above is a true and correct copy of Resolution 81-58 as adopted by the Air Resources Board.

  
\_\_\_\_\_  
Sally Rump  
BOARD SECRETARY

State of California  
AIR RESOURCES BOARD

ITEM NO. 81-19-3 b3  
DATE: September 23, 1981

ITEM: Research Proposal No. 1043-85 entitled "Characterization and Control of Primary Carbon Particle Air Quality in the South Coast Air Basin"

RECOMMENDATION: Adopt Resolution 81-58 approving Proposal No. 1043-85 for funding in an amount not to exceed \$321,561.

SUMMARY: The objective of this project is to establish the technical foundation for the development of primary carbon particle air quality control strategies in the South Coast Air Basin. Elemental and organic particulate carbon concentrations will be determined by a year-long 10-station monitoring network calendar year 1982. An emissions inventory will be developed to account for the emissions of primary organic and elemental carbon in the Los Angeles basin. The salient features of particulate carbon air quality behavior in the South Coast Air Basin that must be reproduced by a successful air quality model will be identified. Then candidate emissions to air quality models for particulate carbon will be reviewed in light of their data requirements. The most effective approach to primary particulate carbon control strategy development will be established.

This three year study will provide valuable information on the occurrence and control of primary carbonaceous aerosol emissions in the South Coast Air Basin. The proposed study is timely in view of the fact that carbonaceous particle emissions from diesel vehicles and wood burning are increasing in the South Coast Air Basin. Substantial deterioration of visibility and air quality are expected to result from the continued increase of such emissions unless appropriate control strategies are designed and implemented. The results from this research are expected to be critical to the Board in developing strategies to ensure that acceptable levels of air quality are not exceeded.

State of California  
AIR RESOURCES BOARD

Resolution 81-59  
September 24, 1981

Agenda Item No.: 81-19-1

WHEREAS, Section 39601 of the Health and Safety Code authorizes 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, Sections 43013, 43100 and 43101 of the Health and Safety Code authorize the Board to adopt vehicle emission standards in order to control or eliminate air pollution caused by motor vehicles;

WHEREAS, the Board has adopted exhaust emission standards and test procedures for 1981 and subsequent model heavy-duty engines contained in Section 1956.7, Title 13, California Administrative Code;

WHEREAS, manufacturers of certain heavy-duty vehicles have requested permission to use non-California certified engines because no suitable California certified engines are available;

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

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; and

WHEREAS, the Board finds:

That, as certain heavy-duty engines are phased out of production for California, the manufacturers of vehicles designed for those engines can no longer obtain suitable engines for those vehicles;

That suitable engines which meet federal emission standards may be available for vehicles for which no suitable California engine exists;

That the affected vehicles are manufactured in such small volume that it is economically infeasible to redesign the vehicles for the purpose of accommodating new California engines;

That discontinuation of some vehicles could result in extreme cost penalties and disruption of business; and

That allowing very limited use of engines meeting federal emission standards in heavy-duty vehicles until they can be redesigned to accept complying California engines would result in no significant adverse impact on air quality.

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby amends Section 1956.7, Title 13, California Administrative Code, as set forth in Attachment A.

BE IT FURTHER RESOLVED, that the Board finds that the regulations as amended herein, individually and in the aggregate, are at least as protective of public health and welfare as comparable federal regulations and are consistent with Section 202(a) and (b) of the federal Clean Air Act.

BE IT FURTHER RESOLVED, that the amendment adopted hereby be forwarded to the Environmental Protection Agency with a request for confirmation that the amendment is covered by an existing waiver of federal preemption 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 81-59, as adopted by the Air Resources Board.

  
\_\_\_\_\_  
Sally Rump, Board Secretary

Attachment A

Amend Section 1956.7, Article 2, Subchapter 1, Chapter 3, Title 13, California Administrative Code, to read as follows:

1956.7 Exhaust Emission Standards and Test Procedures--1981 and Subsequent Model Heavy-Duty Engines and Vehicles.

(a) The exhaust emissions from new 1981 and subsequent model heavy-duty engines, except engines used in medium-duty vehicles, shall not exceed:

Primary Exhaust Emission Standards  
(grams per brake horsepower hour)

Model Year	Hydrocarbons	Carbon Monoxide	Hydrocarbons plus Oxides of Nitrogen
1981-1983	1.0	25	6.0
OR*	-	25	5
1984 and subsequent	0.5	25	4.5

\*The two sets of standards for each model year are alternatives. A manufacturer has this option for each engine family of showing compliance with either set. Separate deterioration factors shall be established, where applicable, for HC, CO, NOx and/or the combined emissions of HC and NOx.

The following optional exhaust emission standards are applicable to engines tested pursuant to the optional federal test procedures and regulations for 1984 and subsequent model heavy-duty engines. These standards replace the federal standards in CFR Sections 86.084-10, 86.084-11, and 86.085-11 for hydrocarbons, carbon monoxide and oxides of nitrogen.\*\*

Optional Exhaust Emission Standards  
(grams per brake horsepower hour)

Model year	Hydrocarbons	Carbon Monoxide	Oxides of Nitrogen
1984 and subsequent	1.3	15.5	5.1

\*\*The federal 13-mode optional standards for 1984 model year diesel-powered engines do not apply.

(b) The test procedures for determining compliance with 1981 standards are set forth in the "California Exhaust Emission Standards and Test Procedures for 1981 Model Heavy-Duty Engines and Vehicles," adopted April 23, 1980.

(c) The test procedures for determining compliance with standards applicable to 1982 and subsequent are set forth in the "California Exhaust Emission Standards and Test Procedures for 1982 and Subsequent Model Heavy-Duty Engines and Vehicles," adopted October 5, 1976, as last amended January 21, 1981.

(d) A manufacturer may elect to certify heavy-duty vehicles of less than 10,000 pounds maximum gross vehicle weight rating as medium-duty vehicles under Section 1960.1 of this Chapter, in which event heavy-duty emission standards and test procedures shall not apply.

(e)(1) The Executive Officer may authorize use of engines certified to meet federal emission standards, or which are demonstrated to meet appropriate federal emission standards, in up to a total of 100 heavy-duty vehicles in any one calendar year when the Executive Officer has determined that no engine certified to meet California emission standards exists which is suitable for use in the vehicles.

(2) In order to qualify for an exemption, the vehicle manufacturer shall submit, in writing, to the Executive Officer the justification for such exemption. The exemption request shall show that, due to circumstances beyond the control of the vehicle manufacturer, California certified engines are unavailable for use in the vehicle. The request shall further show that redesign or discontinuation of the vehicle will result in extreme cost penalties and disruption of business. In evaluating a request for an exemption, the Executive Officer shall consider all relevant factors, including the number of individual vehicles covered by the request and the anti-competitive effect, if any, of granting the request. If a request is denied, the Executive Officer shall state in writing the reasons for the denial.

(3) In the event the Executive Officer determines that an applicant may meet the criteria for an exemption under this subsection, but that granting the exemption will, together with previous exemptions granted, result in over 100 vehicles being permitted under this subsection to use non-California engines in heavy-duty vehicles in any one calendar year, the exemption may be granted only by the Board, under the criteria set forth herein.

NOTE: Authority: Sections 39515, 39600, 43013, and 43101, Health and Safety Code. References: Sections 39515, 39516, 43013, 43100, 43101, 43102, and 43104, Health and Safety Code.

# Memorandum

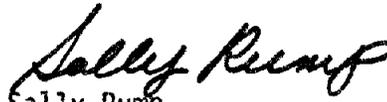
To : Huey D. Johnson  
Secretary  
Resources Agency

Date : April 6, 1981

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

From : 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 decision and response to environmental comments raised during the comment period.

  
Sally Rump  
BOARD SECRETARY

Attachments  
Resolution 81-46  
~~Resolution 81-47~~  
Resolution 81-61

RECEIVED BY  
Office of the Secretary

OCT 07 1981

Resources Agency of California

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider the Feasibility of 1984 and Subsequent Model Heavy-Duty Engine Emission Standards and to Consider a Proposed Amendment to Title 13, California Administrative Code, Section 1956.7 Regarding Exemptions from Emission Standards for Heavy-Duty Vehicles

Agenda Item No.: 81-19-1

Public Hearing Date: September 24, 1981

Response Date: September 24, 1981

Issuing Authority: Air Resources Board

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

Response: N/A

CERTIFIED:

Sally Kemp  
Board Secretary

RECEIVED BY  
Office of the Secretary

OCT 07 1981

Date:

10/6/81

Resources Agency of California

State of California  
AIR RESOURCES BOARD

Resolution 81-60

November 18, 1981

Agenda Item No.: 81-23-1

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, Assembly Bill 2248 (Statutes 1980, Chapter 1134) adds Sections 41970-41974 to the Health and Safety Code, which establish an optional alternative to the criminal penalties set forth in Health and Safety Code Section 42400 in cases involving gasoline cargo tanks subject to state laws concerning gasoline vapor recovery;

WHEREAS, Health and Safety Code Section 41970 provides that when a person is cited with a notice pursuant to the optional alternative, the applicable charges will be dismissed by the court if the cited person presents proof of correction of the alleged violation;

WHEREAS, Sections 41971 and 41972 of the Health and Safety Code provide that proof of correction of the alleged violation may be made by verification by the owner or operator of the cargo tank if specified conditions are met;

WHEREAS, Section 41972 of the Health and Safety Code requires the Board to adopt regulations for the making of verifications of the correction by the owner or operator of the gasoline cargo tank;

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;

WHEREAS, the Board finds:

That the regulation set forth in Attachment A establishes requirements for the making and submission of verifications of correction by the cargo tank operator when such verifications are authorized by Sections 41970-41972 of the Health and Safety Code;

That adoption of said regulation is reasonably necessary to implement the mandate of Section 41972 of the Health and Safety Code and to assure that persons submitting such verifications have made the required corrections and met the required conditions for use of the verification;

That the form set forth in Attachment B permits the submittal of the information required by said regulation in a uniform fashion;

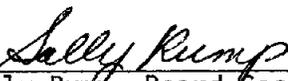
That the regulation set forth in Attachment A would have no substantial adverse environmental impact, and therefore no alternative and/or mitigation measures are required; and

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.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby adopts Section 94005 of Part III, Chapter 1, Subchapter 8, Title 17 of the California Administrative Code as set forth in Attachment A hereto.

BE IT FURTHER RESOLVED that the Board hereby adopts the form set forth in Attachment B as the approved form for preparation and submittal of a Proof of Correction by Verification pursuant to Section 94005 of Title 17, California Administrative Code.

I certify that the above is  
a true and correct copy of  
Resolution 81-60, as adopted  
by the Air Resources Board

  
\_\_\_\_\_  
Sally Rump, Board Secretary

ATTACHMENT A

Add Section 94005 to Part III, Chapter 1, Subchapter 8 in Title 17 of the California Administrative Code.

NOTE: Authority cited: §§ 39600, 39601, and 41972 Health and Safety Code. Reference: §§ 41970 and 41972, Health and Safety Code.

Subchapter 8. Compliance With Non-vehicular Emission Standards

Article 1. General Provisions

94005. Preparation and Submittal of Proof of Correction for Gasoline Cargo Tanks. (a) Whenever any person has received a notice to appear issued pursuant to Health and Safety Code Section 41970, and the preparation and submittal of a proof of correction by verification is authorized by Health and Safety Code Section 41972, such proof of correction shall contain:

(1) Name of owner or operator, company name (if applicable), and address.

(2) Date, time, and violation specified in notice to appear.

(3) State Fire Marshal cargo tank number.

(4) Manufacturer's number of tank.

(5) California Air Resources Board vapor-emission-certification decal number.

(6) License number of vehicle carrying cargo tank at the time of issuance of notice to appear.

(7) A statement that the violation was corrected, including the following information and documentation:

(A) A brief description of the corrections that were made.

(B) The date on which the corrections were made.

(C) The name, address, and company affiliation (if any) of the person making the correction.

(D) If the violation consists of operation of the cargo tank without issuance of the required vapor recovery certification, a copy of the application for vapor recovery certification and a copy of the issued certification.

(E) If in order to correct the violation it was necessary to test the cargo tank to determine compliance with the annual leak rate criteria, (i) the name, address and company affiliation (if any) of the person conducting the test; (ii) the date of the test; (iii) pressure change in five minutes (in inches of water); (iv) vacuum change in five minutes (in inches of water); (v) a statement by the person conducting the test that the cargo tank was tested in accordance with the procedures established by the Air Resources Board (Board or ARB).

(8) Date, time, and means by which the issuing agency was notified of the opportunity to inspect the corrections.

(9) Location of cargo tank and time specified for inspection.

(A) A brief description of the corrections that were made.

(B) The date on which the corrections were made.

(C) The name, address, and company affiliation (if any) of the person making the correction.

(D) If the violation consists of operation of the cargo tank without issuance of the required vapor recovery certification, a copy of the application for vapor recovery certification and a copy of the issued certification.

(E) If in order to correct the violation it was necessary to test the cargo tank to determine compliance with the annual leak rate criteria, (i) the name, address and company affiliation (if any) of the person conducting the test; (ii) the date of the test; (iii) pressure change in five minutes (in inches of water); (iv) vacuum change in five minutes (in inches of water); (v) a statement by the person conducting the test that the cargo tank was tested in accordance with the procedures established by the Air Resources Board (Board or ARB).

(8) Date, time, and means by which the issuing agency was notified of the opportunity to inspect the corrections.

(9) Location of cargo tank and time specified for inspection.

(10) Statement that the representative of the issuing agency failed to appear at the designated place and time.

(11) Declaration under penalty of perjury by person making correction and/or conducting test that the information contained in Item 7 is true and correct.

(12) Declaration under penalty of perjury by owner or operator named in the notice to appear that all information submitted is true and correct and the violation has been corrected.

(b) The executive officer shall have the authority to approve any modification to the form used for submittal of the information set forth in subsection (a) and provide the form to the State Fire Marshal and all air pollution control districts. Every "Proof of Correction by Verification" shall be prepared in triplicate on the form approved by the ARB. The original, along with the copy of the notice to appear, shall be submitted pursuant to Health and Safety Code Section 41970 to the court specified in the notice to appear. No later than the date of presentment to the court, copies shall be mailed to the agency issuing the notice to appear and to the Enforcement Division of the ARB.

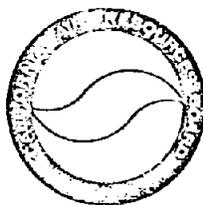
NOTE: Authority cited: §§ 39600, 39601, and 41972 Health and Safety Code. Reference: §§ 41970 and 41972, Health and Safety Code.

REPLACE FOUR COPIES:

Submit one copy each to:

1. Court specified in notice to appear, along with copy of the notice to appear.
2. Agency issuing the notice to appear.
3. Air Resources Board Enforcement Division  
1101 Q Street  
P. O. Box 2815  
Sacramento, CA 95812
4. Keep one copy for Personal records.

CALIFORNIA  
AIR RESOURCES BOARD



**PROOF OF  
CORRECTION BY  
VERIFICATION**

PLEASE PRINT OR TYPE

(Complete this form in full)

**NOTICE TO COURT**

This form developed in accordance with Section 41970 of the Health & Safety Code. If the arrested person presents, by mail or in person, proof of correction as prescribed in Section 41971 of the Health & Safety Code on or before the date on which he or she promised to appear, the court shall dismiss the applicable charges.

**OWNER/OPERATOR INFORMATION**

NAME OF OWNER/OPERATOR:

TELEPHONE NUMBER:

COMPANY NAME:

MAILING ADDRESS - NUMBER &amp; STREET:

CITY:

ZIP CODE:

VIOLATION SPECIFIED IN NOTICE TO APPEAR (Rule or Regulation Cited)

DATE:

TIME:

**CARGO TANK INFORMATION**

TANK NUMBER:

MANUFACTURER NUMBER:

ARB DECAL NUMBER:

LICENSE NUMBER OF VEHICLE:

**PROOF OF CORRECTION INFORMATION**

NAME OF COMPANY AND PERSON MAKING CORRECTIONS

COMPANY NAME:

PERSON MAKING CORRECTION:

ADDRESS:

DATE:

BRIEF DESCRIPTION OF REPAIRS MADE TO CORRECT VIOLATION:

TANK TESTING

If in order to correct the violation it was necessary to test the cargo tank to determine compliance with the annual leak rate criteria, please submit the results of tank testing and certification on the application for cargo tank certification form approved by the State Fire Marshal.

I certify under penalty of perjury that I made the necessary corrections and/or conducted the test to rectify the violation and the information contained under proof of correction information is true and correct.

Signature

If the violation consists solely of operation of the cargo tank without issuance of the required vapor recovery certification, please submit a copy of application for vapor recovery certification and a copy of the issued certification.

VERIFICATION OF CORRECTION

ISSUING AGENCY NOTIFIED TO INSPECT:

DATE:

TIME:

MEANS (TELEPHONE, IN-PERSON)

LOCATION OF CARGO TANK:

DATE AND TIME SPECIFIED FOR INSPECTION:

Did representative of issuing agency appear at designated place and time?

ANSWER:

OWNER OR OPERATOR NAMED IN NOTICE TO APPEAR

I declare under penalty of perjury that all information submitted herein is true and correct and the violation has been corrected.

Signature

# Memorandum

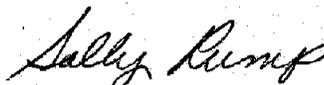
Huey D. Johnson  
Secretary  
Resources Agency

Date : December 9, 1981

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

From : 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 decision and response to environmental comments raised during the comment period.



Sally Rump  
Board Secretary

attachment  
Resolution 81-60

RECEIVED BY  
Office of the Secretary

DEC 10 1981

Resources Agency of California

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Proposed Regulation Section 94005, Preparation and Submittal of Proof of Correction for Gasoline Cargo Tanks, to be Added to Part III, Chapter 1, Subchapter 8 of Title 17 of the California Administrative Code

Agenda Item No.: 81-23-1

Public Hearing Date: November 18, 1981

Response Date: November 18, 1981

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:

Sally Rump  
Board Secretary

Date:

12/1/81

RECEIVED BY  
Office of the Secretary

DEC 10 1981

Resources Agency of California

State of California  
AIR RESOURCES BOARD

Resolution 81-61

September 24, 1981

Agenda Item No.: 81-19-2

WHEREAS, Health and Safety Code Section 39601 requires the Air Resources Board to adopt rules and regulations necessary for the proper execution of the powers and duties granted to and imposed upon the state board;

WHEREAS, the Board has adopted rules and regulations governing procedures for the conduct of its public business in Title 17, California Administrative Code, Sections 60000-60023 and 93000-93003;

WHEREAS, Government Code Section 11349.7 of the Administrative Procedure Act enacted by AB 1111 and AB 939 (Stats. 1979, Chapter 567 and 1203, respectively) requires the ARB to review all regulations administered by it for compliance with the statutory criteria of necessity, clarity, consistency, authority, and reference in accordance with a schedule approved by the Office of Administrative Law on February 11, 1981;

WHEREAS, public comments on the ARB's procedural regulations were solicited by public notice dated February 9, 1981;

WHEREAS, in consideration of these public comments and based on the staff's analysis of the regulations, staff has proposed specific changes to these regulations designed to reduce significantly the total volume of the regulations, enhance public participation, eliminate unnecessary repetition of statutory provisions and other excess verbiage, add references to appropriate statutes, and simplify or clarify language in those regulations proposed for retention;

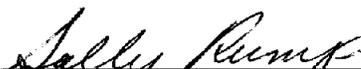
WHEREAS, a public hearing has been held on September 24, 1981, on the proposed amendments, pursuant to public notice dated July 31, 1981;

WHEREAS, the Board finds that the amendments proposed by staff comply with the letter and the spirit of the review process set forth in the Administrative Procedure Act and conform to the five statutory criteria; and

WHEREAS, the Board further finds that no significant environmental issues have been raised with regard to these regulations and that all opposing considerations have been adequately responded to.

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby adopts, repeals, and amends the regulations contained in Title 17, California Administrative Code, Part III, Chapter 1, Subchapters 1 and 7, as set forth in Attachment A.

I certify that the above is a true and correct copy of Resolution 81-61, as adopted by the Air Resources Board.

  
Sally Rump, Board Secretary

ATTACHMENT A

SUBCHAPTER 1. ADMINISTRATIVE PROCEDURES

Article 1. Board Meetings and Executive-Officer Hearings

60000. Purpose. The regulations set forth in this subchapter shall supplement provisions in the Mulford-Carrell Air Resources Act (Division 26 of the Health and Safety Code), the Administrative Procedure Act, and the California Environmental Quality Act with regard to meetings and hearings of the state board and the executive officer.

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

Reference: Sections 39000, et seq., Health and Safety Code;  
Sections 11340, et seq., Government Code; and  
Section 21080.5, Public Resources Code.

600001. Regular Scheduling of Meetings. The chairperson or the Executive Officer of the state board shall schedule and the state board shall hold regular meetings at least twice a month. The chairperson Meetings shall be scheduled by the chairperson or the executive officer of the state board, who may for good cause with appropriate notice change the starting time of any meeting proceeding or reschedule, cancel, or continue the meeting proceeding.

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

Reference: Sections 39513, 39515, 39516, and 39600, Health and Safety Code; Section 11129, Government Code.

60001.---Notice.---(a)---Notice of regular meetings of the state board shall be sent by first-class mail, dispatched not later than seven days preceding such meeting, and shall contain an agenda or description of all items to be considered at that meeting.

(b)---Notice of regular meetings of the state board shall be mailed to all state board members, to all parties to proceedings on the agenda, to interested federal, state and local agencies, and to persons who request such notice in writing.---For public information purposes, the agenda shall be provided to newspapers of general circulation.

(c)---When a public hearing is required, pursuant to the requirements of Chapter 3.5 (commencing with Section 11340), Part 1, Division 3, Title 2 of the Government Code, for the adoption, amendment, or repeal of any rule, regulation, order, or standard of general application in order to implement, interpret, or make specific the law enforced or administered by the state board or the Executive Officer, notice shall be given in accordance with the requirements of said Chapter 3.5.---Notice shall also be given to all state and local governmental agencies having jurisdiction by law with respect to a proposed activity of the state board.

(d)---Before taking any action pursuant to Health and Safety Code Sections 41503 to 41505, inclusive, or Health and Safety Code Section 41650, notice shall be given as provided in Health and Safety Code Section 41502, and to all state board members, members of the public requesting such notice in writing, and all state and local governmental agencies having jurisdiction by law with respect to the proposed action.

60002.---Special Meetings.---The chairperson or the Executive Officer may schedule and the state board may hold a special meeting; provided that the notice for such special meeting specifies in detail the date, location, and subject matter of such special meeting.---Notice of such special meeting shall be given in the same manner as provided in Section 60001.

60002. Notice. In addition to providing notice of state board meetings and hearings as required by statute, notice shall be mailed to state and local government agencies having jurisdiction by law with respect to a proposed activity of the state board and to persons who request such notice in writing. For informational purposes, notice may be provided to newspapers of general circulation, to all persons believed to be interested in the proceeding, and to the State Clearinghouse for circulation to public agencies.

Note: Authority cited: Sections 39600 and 39601, Health and Safety Code.  
Reference: Sections 39002, 41502 and 41650, Health and Safety Code;  
Sections 11125 and 111346.5, Government Code.

#### Article 2, -- Emergency Meetings

~~60009. -- Government Code Section 11125. -- In accordance with Government Code Section 11125, this article establishes the procedures and requirements for emergency meetings of the state board, for which seven days advance agenda notice cannot be given. -- Where such notice can be given, it shall be done in compliance with the requirements established in Government Code Section 11125 and other applicable provisions of the law.~~

~~60010. -- Unforeseen Emergency Conditions. -- For the purposes of Section 11125 of the Government Code, an unforeseen emergency which shall justify the holding of a public meeting with less than seven days notice shall include the following situations: -- (1) -- evidence of the existence of a concentration of air contaminants in any place in the state that is presenting an imminent and substantial endangerment to the health of persons and with respect to which the district or districts affected are not taking reasonable action to abate the concentration of air contaminants; -- (2) -- issuance of a court order or passage of an urgency statute or resolution by the state legislature or federal government requiring immediate action by the state board in order to preserve the public health,~~

safety, or general welfare; and (3) any other circumstances affecting air quality such that the state board reasonably believes that it is necessary to take immediate action in order to preserve the public health, safety, or general welfare.

60011.---Notification.---The state board shall make a reasonable effort to give notice in writing or orally to all persons who may be directly affected by the state board's proposed action in order that such persons may be present during the emergency meeting.---Actions taken pursuant to Sections 41503-41505 of the Health and Safety Code shall be preceded by at least 24 hours written or oral notice to the basinwide air pollution control council, if any, and to the affected districts.---The notice shall include a statement of facts which prevented the Board from giving the usual advance notice as required.

60012.---Procedures.---Any emergency meeting held pursuant to this article shall be conducted according to the procedures in Article 1 governing regular meetings of the state board.

60013.---Confirmation of Emergency Action.---Where the state board takes action under emergency conditions, and such action is subject to Chapter 3.5 (commencing with Section 11340), Part 1, Division 3, Title 2, of the Government Code, the state board or the Executive Officer shall confirm such action within 120 days in accordance with the provisions of Government Code Section 11346.1 if it is determined that the action should have legal effect for more than 120 days.

~~the South Coast Air Quality Management District, or the Bay Area Air Pollution Control District.~~

~~93002.--- Unforeseen Emergency Conditions.--- For the purpose of Section 11125 of the Government Code, an unforeseen emergency which shall justify the holding of a public meeting with less than one week's notice shall include the following situations:-- (a) evidence of the existence of a concentration of air contaminants in any place in the state that is presenting an imminent and substantial endangerment to the health of persons, and with respect to which the district or districts affected are not taking reasonable action to abate the concentration of air contaminants;-- (b) issuance of a court order or passage of an urgency statute or resolution by the state legislature or the federal government requiring immediate action by the State Board in order to preserve the public health, safety, and general welfare; and (c) any other set of circumstances affecting air quality such that the State Board reasonably believes that it is necessary to take immediate action in order to preserve the public health, safety, and general welfare.~~

~~93003.--- Notification.--- The State Board shall make a reasonable effort to give notice in writing or orally to all persons that may be directly affected by the State Board's proposed action in order that such persons may be present during the emergency meeting.~~

~~SUBCHAPTER 7. . . EMERGENCY MEETINGS.~~

~~Article 1. . . General Provisions.~~

~~93000. . . Government Code Section 11125. . . Section 11125 of the Government Code (amended Stats., 1973, Ch. 1126; Stats., 1975, Ch. 708) provides as follows:~~

~~"11125. . . (a) . . . The state agency shall prepare an agenda for and provide notice of its meetings to any person who requests such notice in writing. Notice shall be given at least one week in advance of and shall include the agenda for the meeting, provided that emergency meetings may be held with less than one week's notice when such meetings are necessary to discuss unforeseen emergency conditions, as defined by published rule of the agency adopted pursuant to the provisions of Chapter 4.5 (commencing with Section 11371) of this part. . . The agenda need not include a list of any witnesses expected to appear at the meeting.~~

~~"(b) . . . Notice shall include the items of business to be transacted, and no item shall be added to the agenda subsequent to the provisions of such notice, absent unforeseen emergency conditions, as provided in subdivision (a).~~

~~"(c) . . . A person may request, and shall be provided, notice pursuant to subdivision (a) for all meetings of the agency, or only for a specific meeting or meetings. . . In addition, at the agency's discretion, a person may request, and may be provided, notice of only those agency meetings at which a particular subject or subjects specified in the request will be discussed. . . A request for notice of more than one meeting of an agency shall be subject to the provisions of Section 14911."~~

~~93001. . . Definitions. . . As used in this subchapter: . . . (a) . . . "air contaminant" means pollutants discharged into the air from any source which may create a danger to public health; (b) . . . "State Board" means the California Air Resources Board; and (c) . . . "District" means each county air pollution control district, regional air pollution control district, unified air pollution control district.~~

60003. Quorum. The presence of a majority of the total appointed members of the state board shall constitute a quorum, and formal decisions shall be by vote of a majority of the quorum. No action formal decision on any item shall be taken made in the absence of a quorum. ~~except that a lesser number of members may continue a meeting from time to time until a quorum is present, and may receive information or status reports on non-action items. Except as otherwise provided in Division 26 of the Health and Safety Code or in these regulations, actions of the state board shall be by vote of a majority of the quorum.~~

Note: Authority cited: Sections 39600 and 39601, Health and Safety Code.  
Reference: FTC v. Flothill Products, 389 U.S. 179, 183 (1967);  
Vita-Pharmaceuticals v. Board of Pharmacy, 110 C.A.2d 826  
(1952); Robert's Rules of Order.

~~60004. Testimony and Record of Proceedings. (a) It is the board's policy to encourage and allow interested persons to present oral as well as written testimony at public hearings and meetings held by the board or the Executive Officer. Oral testimony shall be permitted if, no later than 15 days prior to the hearing, an interested person or duly authorized representative submits in writing to the board secretary a request to present oral testimony. Except for hearings held pursuant to Section 41650 of the Health and Safety Code, where no such request is received, the state board or the Executive Officer, as the case may be, shall have discretion to limit interested persons to the presentation of written testimony only. The chairperson, or the Executive Officer, may impose reasonable limitations on the scope, duration, and manner of presentation of oral testimony. To the extent practicable, such limitations shall be set forth in the hearing notice.~~

(b)--The state board may specify the date by which comments submitted in writing must be received for them to be considered, provided that, except for emergency hearings, the deadline for filing written comments shall be at least 45 days from the date of publication of the staff report. Any deadline for receipt of written comments shall be contained in the hearing notice. The state board shall accept for consideration written comments submitted after the deadline specified in the hearing notice but by the hearing date on a detailed factual showing that the comments could not have been provided to the state board by the deadline by reason of factors beyond the control of the person submitting the comments, and that the comments were submitted as expeditiously as reasonably practicable following the deadline.

(c)--At any public hearing held pursuant to Health and Safety Code Section 41650, regarding state board review of nonattainment area plans, representatives from districts included within the nonattainment area and the designated air quality planning agency shall have the right to question and solicit testimony from qualified representatives of the state board staff on the matter being considered. The state board may, by affirmative vote of four members, place reasonable limits on such right. With regard to any Executive Officer hearing held under Section 41650, the state board may impose such limits as part of its delegation to the Executive Officer.

(d)--The proceedings shall be recorded electronically, or by other appropriate means. At the request of the state board, the Executive Officer, or any interested person, the hearing shall be recorded by a certified court reporter and the cost thereof borne by the person making the request.

60008.3--Rulemaking File--For every rulemaking for which a public hearing is required pursuant to Chapter 3:5 (commencing with Section 11340), Part 1, Division 3, Title 2 of the Government Code, the secretary of the state board shall maintain a file as required by Government Code Section 11347.3.

60004. Record of Proceedings. (a) Board proceedings shall be recorded electronically, or by other appropriate means. The recording or transcript shall be made available to the public for review at the state board's main office. At the request of the state board, the executive officer, or any interested person, the proceedings shall be recorded by a certified court reporter and the cost thereof borne by the person making the request. Upon a showing of need, economic hardship, and the public interest to be served, any person may request, and the state board or executive officer may grant, a transcript of specified proceedings at state board expense.

(b) For every rulemaking proceeding, the secretary of the state board shall maintain a file as required by Government Code Section 11347.3.

Note: Authority cited: Section 39601, Health and Safety Code.  
Reference: Section 39600, Health and Safety Code; Sections 6250 et seq., and 11347.3, Government Code.

~~60008.2. ---Statement of Reasons for Proposed Rulemaking.---(a)---Where a public hearing is required pursuant to Chapter 3.5 (commencing with Section 11340) Part 1, Division 3, Title 2 of the Government Code, the statement required by Government Code Section 11346.7 shall be prepared by the staff of the state board prior to the time the notice referred to in Section 60001(c) is published and made available to the public.---The notice shall inform the reader that such statement has been prepared.~~

~~(b)---Prior to final adoption of a regulation, the statement shall be updated pursuant to Government Code Section 11346.7.~~

60005. -- Staff Reports. -- (a) -- Where a public hearing by the state board is required by law, or when the Executive Officer proposes to take action following a public hearing or public comment period, a staff report, together with the proposed rule, regulation, order, or standard, shall be prepared and published by the staff of the state board. -- Where a public hearing is required pursuant to the requirements of Chapter 3.5 (commencing with Section 11340), Part 1 Division 3, Title 2 of the Government Code, the staff report shall be published at least 45 days before the date of the public hearing. -- For all other public hearings, the staff reports shall be published at least 30 days before the date of the public hearing. -- Notwithstanding the foregoing provisions, if the state board proposes to take emergency action after public hearing, including but not limited to action pursuant to Government Code Section 11346.1(b) and the emergency provisions of Health and Safety Code Section 41502, the staff report shall be published as early as reasonably practicable prior to the public hearing. Staff reports shall be distributed to all governmental agencies having jurisdiction by law with respect to the proposed activity and to persons who have requested such reports.

(b) -- Except for documents determined to be a trade secret pursuant to Sections 91000 et seq., of Title 17, California Administrative Code, or documents otherwise exempt from disclosure pursuant to the Public Records Act (Gov. Code Secs. 6250 et seq.), copies of documents reviewed in connection with the consideration of issues discussed in staff reports, and written comments received from interested persons, shall be made available for inspection and copying upon request.

(c) -- It is the policy of the state board to provide a reasonable opportunity for interested persons to review and comment upon staff reports prepared on items for which a public hearing is required. -- The notice required by Section 60001 shall therefore describe the manner in which a staff report may be obtained for review and comment, and general subject matter addressed in the staff report and the specific staff person to whom the request for a copy and any comment shall be addressed.

(d) -- It is the policy of the state board to prepare staff reports in a manner consistent with the environmental protection purposes of the state board's regulatory program and with the goals and policies of the California Environmental Quality Act (CEQA: -- Public Resources Code Sections 21000 et seq.). -- Therefore, all staff reports shall contain a description of the proposed action and in a separate section, an assessment of anticipated significant long or short-term adverse environmental impacts associated with the proposed action and a succinct analysis of those impacts. -- The adverse impacts to be considered are direct and indirect effects on land, air, water, and minerals (including energy supply or use, flora, fauna, noise, and objects of historic or aesthetic significance). -- The analysis shall address possible mitigation measures and alternatives to the proposed action and any irreversible environmental changes or growth-inducing impacts.

(e) -- The Executive Officer shall prescribe guidelines for reimbursement of the state board's cost of compliance with subsection (a), for the format of staff reports, and such other related requirements as the Executive Officer deems appropriate.

60005. Staff Reports. (a) Where a public hearing is required by law or where the action contemplated may have a significant effect on the environment, a staff report, together with the proposed rule, regulation, order, standard or plan shall be prepared and published by the staff of the state board. For rulemaking proceedings governed by the Administrative Procedure Act, the staff report shall be published at least 45 days before the date of the public hearing. For all other such proceedings, the staff report shall be published as early as reasonably practicable prior to the proceeding. Staff reports shall be available for public review and comment and shall be distributed to all governmental agencies having jurisdiction by law over the proposed activity and to persons who have requested such reports.

(b) It is the policy of the state board to prepare staff reports in a manner consistent with the environmental protection purposes of the state board's regulatory program and with the goals and policies of the California Environmental Quality Act (CEQA; Public Resources Code Sections 21000 et seq.). All staff reports shall contain a description of the proposed action, an assessment of anticipated significant long or short term adverse and beneficial environmental impacts associated with the proposed action and a succinct analysis of those impacts. The analysis shall address feasible mitigation measures and feasible alternatives to the proposed action which would substantially reduce any significant adverse impact identified.

Note: Authority cited: Sections 39600 and 39601, Health and Safety Code.  
Reference: Section 21080.5, Public Resources Code.

~~60006--Environmental-Alternatives--Any-action-for-which-a-public-hearing by-the-state-board-is-required-by-law,-or-for-which-an-Executive-Officer-public hearing-or-comment-period-is-likewise-required,-and-for-which-significant-adverse environmental-effects-have-been-identified-during-the-hearing,-shall-not-be approved-or-adopted-as-proposed-if-there-are-feasible-alternatives-or-feasible mitigation-measures-available-which-would-substantially-lessen-any-significant adverse-impact-which-the-action-may-have-on-the-environment.--For-purposes-of this-subsection,-"feasible"-means-capable-of-being-accomplished-in-a-successful manner-within-a-reasonable-period-of-time,-taking-into-account-economic, environmental,-social,-and-technological-factors,-and-consistent-with-the-state board's-legislatively-mandated-responsibilities-and-duties-~~

Adopt:

60006. Environmental Alternatives. Any action or proposal for which significant adverse environmental impacts have been identified during the review process shall not be approved or adopted as proposed if there are feasible mitigation measures or feasible alternatives available which would substantially reduce such adverse impact. For purposes of this section, "feasible" means capable of being accomplished in a successful manner within a reasonable period of time taking into account economic, environmental, social, and technological factors, and consistent with the state board's legislatively mandated responsibilities and duties.

Note: Authority cited: Sections 39600 and 39601, Health and Safety Code.  
Reference: Section 21080.5, Public Resources Code.

60007.---State-Board-Response-to-Environmental-Assessment.---(a)---If comments-are-received-at-a-state-board-public-hearing-or-by-written-communication prior-to-such-hearing-relating-to-significant-environmental-issues-raised-by-the proposed-board-action,-the-staff-of-the-state-board-shall-summarize-and-respond to-the-comments-at-the-public-hearing-of-the-state-board,-either-orally-or-in-a supplemental-written-report,---Final-action-on-any-proposal-for-which-significant adverse-environmental-effects-have-been-identified-shall-include-a-written response-to-significant-environmental-points-raised-during-the-hearing,-either in-a-formal-resolution-of-the-state-board-or-other-written-statement-adopted by-the-state-board,---The-written-response-must-be-approved-by-the-state-board before-final-action-is-taken,-or-the-state-board-may-delegate-to-the-Executive Officer-the-responsibility-for-approving-the-written-response,-and-for-taking- action-consistent-therewith.

(b)---Notice-of-the-decision-of-the-state-board-on-any-action-required-to be-taken-at-a-public-hearing-and-involving-the-adoption,-amendment-or-repeal-of a-rule,-regulation,-order-or-standard,-shall-be-filed-with-Secretary-of-the Resources-Agency,-to-be-posted-for-public-inspection-for-a-period-of-30-days.

60008.---Executive-Officer-Response-to-Environmental-Assessment.---(a)---If comments-relating-to-significant-environmental-issues-raised-by-the-proposed action-are-received-at-Executive-Officer-public-hearing-or-during-a-comment period-pending-rule-making-action-by-the-Executive-Officer,-the-staff-of-the state-board-shall-prepare,-and-the-Executive-Officer-shall-approve-and-issue, a-written-response-to-the-comments-before-final-action-is-taken.

(b)---Notice-of-the-decision-of-the-Executive-Officer-on-any-action-involving the-adoption,-amendment-or-repeal-of-a-rule,-regulation,-order-or-standard-shall be-filed-with-the-Secretary-of-the-Resources-Agency,-to-be-posted-for-public inspection-for-a-period-of-30-days.

60007. Response to Environmental Assessment (a) If comments are received during the evaluation process which raise significant environmental issues associated with the proposed action, the staff shall summarize and respond to the comments either orally or in a supplemental written report. Prior to taking final action on any proposal for which significant environmental issues have been raised, the decision maker shall approve a written response to each such issue.

(b) Notice of the final action and the written response to significant environmental issues raised shall be filed with the Secretary of the Resources Agency for public inspection.

Note: Authority cited: Sections 39600 and 39601, Health and Safety Code.  
Reference: Section 21080.5, Public Resources Code.

~~60008. Local District-Enforcement-and Amendment of Regulations~~  
Adopted by State Board. (a) ~~Any program or portion thereof or rule or regulation which the state board adopts for a district, pursuant to Health and Safety Code Section 40451 or 41504, shall be enforced by the district as long as such program or rule or regulation remains in effect.~~ For one year after the state board's adoption for a district of any program or portion thereof or rule, or regulation, any amendment by a district pursuant to its own regulations, of such program or portion thereof or rule, or regulation, shall not be effective for any purpose unless and until the state board finds that such amendment will not interfere with the district's ability to achieve and maintain the state's ambient air quality standards. The state board may at any time, by resolution adopted either on its own motion or at the request of an affected district, exempt from the provisions of this section any program or portion thereof or rule, or regulation adopted by it for a local district.

(b) Upon amendment by a district, within the one-year period provided in paragraph (a), of a program or portion thereof or rule, or regulation, adopted for it by the state board, the district shall file such amendment with the General Counsel of the state board, accompanied by a request for review pursuant to this section. Within thirt (30) days of such filing, the board's executive officer shall review the amendment for the purpose of making the state board finding set forth in paragraph (a). In the event the executive officer finds that the amendments do not satisfy the requirements of paragraph (a), the executive officer shall notify the district in writing of such finding and set forth the specific reasons therefor. Unless the executive officer so notifies the district within the thirty-day period specified herein, the state board shall be deemed to have made the finding set forth in paragraph (a) of this section.

(c) The determination of the executive officer pursuant to paragraph (b) of this section shall be reviewable by the state board pursuant to Health and Safety Code Section 39515(e) and the procedures set forth in Sections 60020-60023 of Title 17 of the California Administrative Code.

Note: Authority cited: Sections 39600, 39601 and 41504, Health and Safety Code.

Reference: Sections 39002, 39500, 39600 and 41500, Health and Safety Code.

~~60020.--Petition-for-Board-Review-of-Executive-Officer-Actions;~~

~~Time-for-Filing.--(a)--Any-affected-member-of-the-public,-affected-air-pollution control-district,-or-designated-air-quality-planning-agency-may-petition-the state-board-to-review-any-action-taken-by-the-executive-officer-relating-to-any-of-the-following:~~

~~{1}--action-taken-pursuant-to-Section-40451-(review-of-action-or-failure to-act-by-the-SCAQMD-Board-),-Section-40465-(review-of-the-SCAQMD-air-quality plan),-Section-41503-(establishment-of-a-basinwide-air-pollution-control-plan),~~

~~Section 41504 (establishment of a program, rules, or regulations for a district), and Section 41505 (assumption of the enforcement powers of a district);~~

~~(2) orders issued pursuant to Section 41507 (review of a basinwide control plan for revision to achieve and maintain NAAQS), Section 41602 (review of a basinwide control plan for revision to achieve and maintain state standards); and Section 41603 (revision of a district program to implement the basinwide control plan); and~~

~~(3) action taken pursuant to Sections 41650, 41651, and 41652 (review and revision of nonattainment area plans to assure compliance with the requirements of the Clean Air Act).~~

~~(b) Any such petition must be received by the state board, or, if mailed, postmarked no later than thirty (30) days from the date of the action sought to be reviewed.~~

~~(c) Any air pollution control district, air quality planning agency or member of the public shall, upon the filing with the board secretary of a written request for notice of a specific executive officer action, be mailed notice of such action at the time it is taken.~~

## Article 2. State Board Review of Executive Officer Actions

60020. Petition. (a) A petition to the state board for review of action taken by the executive officer relating to the matters set forth in Health and Safety Code Section 39515(c) must be received by the state board or postmarked no later than thirty (30) days from the date of the action sought to be reviewed.

(b) Any air pollution control district, air quality planning agency, or member of the public shall, upon written request to the Board Secretary, be mailed notice of such executive officer action at the time it is taken.

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

Reference: Section 39515, Health and Safety Code.

60021. Scheduling of Board Review; Procedure for Stay. (a) Upon receipt of a petition for review of an Executive Officer action, the matter shall be placed on the agenda of the next regularly scheduled board meeting to take place at least ten (10) days following receipt of the petition, a notice shall be promptly mailed to the petitioner and to all parties who participated in any Executive Officer hearing on the action being reviewed.

(b) The Executive Officer action shall remain in full force and effect pending state board review unless petition for review demonstrates to the satisfaction of the Executive Officer that a stay of the action is needed to prevent irreparable injury to the public or an affected member thereof. If, in its initial consideration of a petition for review, the board does not take final action on the petition, or at any other time, the board may, at the request of the petitioner or on its own motion, grant a stay of the Executive Officer action pending final board action.

(c) The board or the Executive Officer shall have the power, on a showing of good cause by the petitioner, to continue the hearing on the petition to the next regularly scheduled board meeting following the meeting at which the petition is originally scheduled for hearing.

Note: Authority cited: Sections 39600 and 39601, Health and Safety Code.  
Reference: Section 39515, Health and Safety Code.

60022. Record Before the State Board. (a) The state board shall review the executive officer action based upon (1) the record on which the executive officer action was based; and (2) the contents of the petition(s) requesting state board review. Additionally, where the state board determines that additional evidence is necessary to its review of the action of the executive officer, it may consider such new evidence, provided that all interested persons who participated in any proceeding before the executive officer are given at least fifteen (15) days to respond to any evidence accepted by the board. Any

person desiring the board to consider new evidence shall submit such evidence in writing no later than three (3) days prior to the hearing. Where the executive officer acted pursuant to a hearing, only persons who participated in the hearing may submit new evidence to the board.

(b) At the hearing at which the board considers the petition, the petitioner shall be afforded the opportunity to comment in support of the petition.

Note: Authority cited: Sections 39600 and 39601, Health and Safety Code.  
Reference: Section 39515, Health and Safety Code.

60023. State Board Action on Review. Upon completing its review of the executive officer action, the state board may:

- (1) affirm the action of the executive officer; or
- (2) set aside or modify the action of the executive officer; or
- (3) direct the executive officer to take appropriate action as directed by the state board.

Note: Authority cited: Sections 39600 and 39601, Health and Safety Code.  
Reference: Section 39515, Health and Safety Code.

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider Adoption, Repeal, and Amendment of Regulations Governing Air Resources Board Administrative Procedures Contained in Title 17, California Administrative Code, Sections 60000-60023 and 93000-93003.

Agenda Item No: 81-19-2

Public Hearing Date: September 24, 1981

Response Date: September 24, 1981

Issuing Authority: Air Resources Board

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

Response: N/A

CERTIFIED:

Sally Rump  
Board Secretary

RECEIVED BY  
Office of the Secretary

OCT 07 1981

Date:

10/2/81

Resources Agency of California

# Memorandum

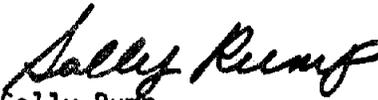
To : Huey D. Johnson  
Secretary  
Resources Agency

Date : April 6, 1981

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

From : Air Resources Board

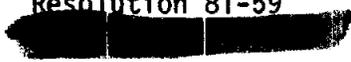
Pursuant to Title 17, Section 60007(b), and in compliance with Air Resources Board certification under section 21080.5 of the Public Resources Code, the Air Resources Board hereby forwards for posting the attached notice of decision and response to environmental comments raised during the comment period.

  
Sally Rump  
BOARD SECRETARY

RECEIVED BY  
Office of the Secretary

OCT 07 1981

Resources Agency of California

Attachments  
Resolution 81-46  
Resolution 81-59  


State of California  
AIR RESOURCES BOARD

Resolution 81-62

October 22, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 1046-86 entitled "Visibility Reduction as Related to Aerosol Constituents," has been submitted by the Air and Industrial Hygiene Laboratory, California Department of Health Services, to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

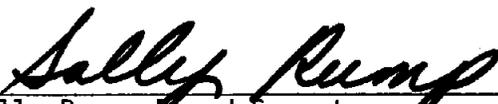
Proposal Number 1046-86 entitled, "Visibility Reduction as Related to Aerosol Constituents," submitted by the Air and Industrial Hygiene Laboratory, California Department of Health Services, for a total amount not to exceed \$170,284;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1046-86 entitled, "Visibility Reduction as Related to Aerosol Constituents," submitted by the Air and Industrial Hygiene Laboratory, California Department of Health Services, for a total amount not to exceed \$170,284,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$170,284.

I certify that the above is a true  
and correct copy of Resolution 81-62  
as adopted by the Air Resources Board.

  
Sally Rump, Board Secretary

State of California  
AIR RESOURCES BOARD

ITEM NO: 81-22-2b.1  
DATE: October 22, 1981

ITEM: Research Proposal No. 1046-86 entitled "Visibility Reduction as Related to Aerosol Constituents".

RECOMMENDATION: Adopt Resolution 81-62 approving Proposal No. 1046-86 for funding in an amount not to exceed \$170,284.

SUMMARY: Visibility reduction caused by air pollution, in addition to being an aesthetic blight, is linked to acid precipitation and possible adverse health effects, and it may result in significant economic losses either direct or indirect. California experiences both the best and poorest visibility conditions in the country, and a recent ARB sponsored study has shown that the poor visibility conditions result largely from poor air quality rather than being purely a meteorological phenomenon.

Several recent studies have attempted to relate air quality measurements to light extinction. However, recent research has shown that measurements of particulate nitrate and sulfate are prone to errors because of artifact loss and/or formation of sulfates and nitrates on filter surfaces. The Air and Industrial Hygiene Laboratory has just completed two successful research projects for the Air Resources Board that are helping to identify and to minimize artifact occurrence in sulfate and nitrate particle analysis.

Only recently have atmospheric researchers begun to understand the importance of carbonaceous particulate matter in visibility reduction. Primary carbon particulate emissions will increase drastically as dieselization of the light duty motor vehicle fleet occurs. Also, the role of water vapor and its effect on light scattering by particles has been confounded by possible sampling artifacts, and as a result, it is not yet well understood.

The objectives of this one-year study are to: 1) determine the relationship between visibility reduction and aerosol and gas concentrations under minimum artifact sampling conditions, 2) determine the total light extinction caused by scattering and absorption of light in the Bay Area and South Coast Air Basin,

3) measure the gaseous components which serve as precursors to visibility reducing particles, and 4) continue field measurements which will contribute to our ability to reduce sampling errors still further.

The proposed objectives will be accomplished through laboratory development of measurement techniques, field measurements at three urban sites for six days, and sample analysis. Interlaboratory comparison work as well as replicate analysis will determine the precision and accuracy of the measurement techniques employed in this study.

This study will provide valuable information on the relative roles of sulfate, nitrate and carbonaceous particles in visibility degradation in the state of California. The proposed work will also increase our understanding of the occurrence of artifact sampling problems and the importance of atmospheric water vapor in visibility reduction.

This information will assist the Board in developing strategies to protect against visibility degradation in California caused by excessive atmospheric concentrations of aerosol particles.

State of California  
AIR RESOURCES BOARD

Resolution 81-63

October 22, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 1045-85(R) entitled, "Health Effects in Children Exposed to Vinyl Chloride" has been submitted by Science Applications Inc., for an amount not to exceed \$110,788;

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

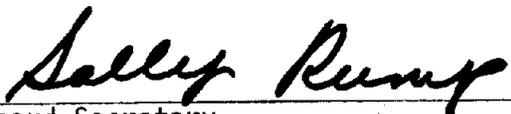
Proposal Number 1045-85(R) entitled, "Health Effects in Children Exposed to Vinyl Chloride", submitted by Science Application Inc., for an amount not to exceed \$110,788;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1045-85(R) entitled, "Health Effects in Children Exposed to Vinyl Chloride", submitted by Science Applications Inc., for an amount not to exceed \$110,788,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$66,044.

I certify that the above is a true and correct copy of Resolution 81-63, as adopted by the Air Resources Board.

  
Board Secretary

State of California  
Air Resources Board

ITEM NO: 81-22-2b.2  
DATE: October 22, 1981

ITEM : Research Proposal No. 1045-85(R) entitled "Health Effects in Children Exposed to Vinyl Chloride".

RECOMMENDATION: Adopt Resolution 81-63 approving Research Proposal No 1045-85(R) for funding not to exceed \$110,788.

SUMMARY: Vinyl chloride monomer (VCM) and its polymeric derivatives have an important place in today's marketplace. Such diverse products as records, pipe, wrapping films and glazing materials are common examples of products fabricated from polyvinyl chloride (PVC). The production of such PVC products from VCM has until recently involved the release of large amounts of the monomer and possibly dimer and trimer to the atmosphere. These substances have been shown to include compounds that can cause cancer and other adverse effects in humans.

The State of California (ARB), the US EPA and OSHA have all acted to reduce human exposure from VCM processing and use. The ARB's regulatory activities were initiated in part, by community concern regarding the safety of children attending an elementary school in the Saugus area approximately 1000 feet downwind of a facility using large quantities of VCM. The EPA and, more recently, the South Coast AQMD have also been active at this facility, attempting to reduce plant emissions to acceptable levels.

The EPA initiated a pilot investigation of the health status of former students of the Saugus Elementary School. Students who had attended during the period of 1958 -1964 were thought most likely to exhibit the adverse long-term effects of previous exposures; thus, most efforts were centered on obtaining information on this cohort. Science Applications, Inc. was awarded the contract for the pilot study, which was recently completed.

Several interesting health observations, came out of the pilot study. The two most intriguing were: 1) the association of VCM exposure with major illness in children of exposed mothers as well as with adverse pregnancy outcomes and 2) the highly unexpected occurrence of 2 deaths from rare cancers and a death from a rare skin disease in the very small number of reported deaths among the exposed cohort.

Science Applications was to have completed an in-depth investigation of health outcomes following VCM exposure of this exposed cohort under EPA funding. The contract was awaiting final signature by the Administrator, but was disapproved at that point because of the recent Federal budget rescissions.

It is submitted to ARB in somewhat modified form. The objectives of the currently considered study are:

1. Establishing a subject registry that includes the name and current address of all exposed students. Contact will be made with all possible subjects.
2. Conducting a mortality study on the entire exposed cohort as well as a carefully constituted control.
3. Conducting an in-depth evaluation of pregnancy outcomes in the exposed female group. Extensive efforts will center on confirmation by the subjects' physicians of the reported adverse outcome. The proponents also intend to employ a better control cohort for comparison with the results obtained in the exposed women.

A fourth task was deleted due to budget limitations. This involved the surveying of current health status of the entire exposed and control cohorts.

The results of this study should help answer many questions about the health risks associated with the exposure of children to low levels of an identified carcinogen. Information derived may also be directly useful in regulating future sources of VCM.

State of California  
AIR RESOURCES BOARD

Resolution 81-64

October 22, 1981

Agenda Item No.: 81-21-2

WHEREAS, the Air Resources Board (Board) and/or the federal Environmental Protection Agency have adopted ambient air quality standards for ozone (oxidant), nitrogen dioxide, particulate matter, and visibility, and these standards are consistently exceeded in several of the state's air basins, notably the South Coast Air Basin;

WHEREAS, Health and Safety Code Sections 39003, 39500, 39602, and 41500 authorize the Board to coordinate, encourage, and review efforts to attain and maintain state and national ambient air quality standards;

WHEREAS, Health and Safety Code Sections 39600 and 39605 authorize the Board to act as may be necessary to execute the powers and duties granted to and imposed upon the Board and to assist local air pollution control districts;

WHEREAS, the California Environmental Quality Act and Board regulations require that an activity not be adopted as proposed if mitigation measures or alternatives exist which would substantially reduce any significant adverse environmental effects of the proposed activity, and further require the Board to respond in writing to significant environmental issues raised;

WHEREAS, on October 22, 1981, the Board held a duly noticed public meeting to hear and consider the evidence and comments presented by the staff, affected industries, and other interested persons and agencies;

WHEREAS, the Suggested Control Measure for the Control of Emissions of Oxides of Nitrogen from Cement Kilns has been reviewed and approved by a technical review group consisting of representatives of the Environmental Protection Agency, the Air Resources Board, the Bay Area Air Quality Management District, the South Coast Air Quality Management District, and several other air pollution control agencies; and

WHEREAS, the Board finds:

That emissions of oxides of nitrogen (NO<sub>x</sub>) from cement kilns contribute to the formation of ozone and contribute significantly to concentrations of nitrogen dioxide (NO<sub>2</sub>), total suspended particulate matter (TSP), and visibility reducing particles;

That technology for reducing NO<sub>x</sub> emissions from cement kilns by approximately 38 percent from their uncontrolled rates is technologically feasible and cost-effective;

That the technologies anticipated to be used to meet the limitations of the Suggested Control Measure will likely result in energy savings; and

That the staff report and the information presented at the October 22, 1981 public meeting adequately address the environmental issues associated with this Suggested Control Measure, and the Board concurs in the staff's finding that no significant adverse environmental effects are likely to result from the adoption and implementation of the Suggested Control Measure.

NOW THEREFORE BE IT RESOLVED, that the Board approves the Suggested Control Measure for the Control of Emissions of Oxides of Nitrogen from Cement Kilns, as set forth in Attachment A to this resolution.

BE IT FURTHER RESOLVED, that the Executive Officer is directed to forward the Suggested Control Measure to air pollution control and air quality management districts with the recommendation that they consider adoption of the measure or a similar measure to the extent that such districts need to further reduce emissions of oxides of nitrogen in order to attain or maintain ambient air quality standards.

BE IT FURTHER RESOLVED, that the Executive Officer is directed to provide assistance to any district requesting assistance in adopting, interpreting or implementing the Suggested Control Measure.

I certify that the above is  
a true and correct copy of  
Resolution 81-64, as adopted  
by the Air Resources Board.

  
Sally Rump, Board Secretary

Attachment A

Suggested Control Measure for the Control of  
Emissions of Oxides of Nitrogen from Cement Kilns

On or after July 1, 1984, no person shall operate any cement kiln that discharges nitrogen oxides (NO<sub>x</sub>) into the atmosphere unless such operation complies with the following emission limit:

3.1 lbs NO<sub>x</sub>/Ton of Clinker (averaged over 3 hours\*)

For cogeneration installations, the emission limit shall be based on the following equation:

Cogeneration Based Emission Limit = Emission Limit x A

Where:  $A = 1 + \frac{\text{Electricity Cogenerated (Btu/hr)}}{\text{Kiln Heat Input (Btu/hr)}}$

Kiln heat input shall be based on the higher heating value of the fuel fired.

\* If a source installs and operates a continuous NO<sub>x</sub> monitor in accordance with conditions set forth by the Air Pollution Control Officer (APCO), the averaging time may be extended to 24 hours.

For the purpose of this rule, NO<sub>x</sub> shall be calculated as NO<sub>2</sub> on a dry basis.

All emission determinations shall be made at as found conditions excluding start-up, shutdown, or breakdown, and measured continuously using proposed ARB Method 100 or equivalent.

The following equation shall be used to convert uncorrected volume parts per million of NO<sub>x</sub> to pounds of NO<sub>x</sub> per ton of clinker produced at standard conditions of 68°F and 29 inches of mercury:

$$\frac{(\text{ppm}_v \text{ NO}_x)(46 \text{ gram/mole})(1.56 \times 10^{-7})(\text{SDCFM})}{(\text{Ton/Hour of Clinker})} = \frac{\text{lbs NO}_x}{\text{Ton of Clinker}}$$

After January 1, 1984, the APCO shall, within 60 days of receipt of a petition, conduct a public hearing to review the feasibility and cost-effectiveness of meeting the emission limit of 3.1 lbs of NO<sub>x</sub> per ton of clinker produced. If the APCO determines that the emission limit is not supported by the evidence presented at this public hearing, s(he) shall modify the compliance date or emission limit to the extent supported by the evidence. The review shall also assure that the cogeneration limits shall be consistent with the provisions of AB 1862 (Chapter 952, Statutes of 1981).

Note: This suggested control measure is to be used for interim determination of Best Available Control Technology (BACT) only.

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Meeting to Consider a Suggested Control Measure for  
the Control of Emissions of Oxides of Nitrogen from Cement Kilns

Agenda Item No.: 81-21-2

Public Hearing Date: October 22, 1981

Response Date: October 22, 1981

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:

Sally Rump  
Board Secretary

Date:

Nov. 9, 1981

State of California  
Air Resources Board

Resolution 81-65

October 21, 1981

Agenda Item No: 81-21-1

WHEREAS, Health and Safety Code Sections 39003 and 39500 provide that the Air Resources Board (the "Board") is the state agency responsible for coordinating efforts to attain and maintain ambient air quality standards and for coordinating, encouraging, and reviewing the efforts of all levels of government as they affect air quality;

WHEREAS, Health and Safety Code Section 39002 provides that local and regional authorities have primary responsibility for control of air pollution from all sources other than vehicular sources, but that the Board shall, after holding public hearings, undertake control activities in any area wherein it determines that the local or regional authority has failed to meet the responsibilities given to it by Health and Safety Code, Division 26, or by any other provision of law;

WHEREAS, Health and Safety Code Sections 39600 and 39605 authorize the Board to do such acts as may be necessary for the proper execution of its powers and duties;

WHEREAS, Health and Safety Code Section 39602 specifically designates the Board as the air pollution control agency for all purposes set forth in federal law and designates the Board as the state agency responsible for the preparation of the State Implementation Plan (SIP) required by the Clean Air Act (42 U.S.C. Sections 7401, et seq.);

WHEREAS, Health and Safety Code Section 40440 requires the Board of the South Coast Air Quality Management District (SCAQMD) to adopt rules and regulations that reflect the best available technological and administrative practices;

WHEREAS, Health and Safety Code Sections 41500, 41502, and 41504 provide that if after the review of the rules and regulations and programs submitted by a district pursuant to Sections 40704 and 41603 and after a public hearing, the Board finds that the rules and regulations or program of a district will not likely achieve and maintain the state's ambient air quality standards, the Board may establish rules and regulations it deems necessary to enable the district to achieve and maintain such ambient air quality standards;

WHEREAS, Health and Safety Code Section 41652 provides that if the Board finds that a locally approved nonattainment plan does not comply with the requirements of the Clean Air Act, the Board may adopt such revisions as necessary to comply with such requirements;

WHEREAS, Clean Air Act Sections 110(a)(2) and 172(a)(1) require that the SIP provide for the attainment of national ambient air quality standards as expeditiously as practicable, and Section 172(b)(2) requires the SIP to provide for the implementation of all reasonably available control measures as expeditiously as practicable;

WHEREAS, SCAQMD Rule 1113 adopted on September 2, 1977, was included as a baseline control measure in the 1979 SIP submittal to the US Environmental Protection Agency (EPA) pursuant to Section 172 of the Clean Air Act, for which emission reduction credit for volatile organic compounds (VOC) was claimed, and was approved for inclusion in the SIP by the EPA on March 28, 1979 (44 Federal Register 61, page 1849);

WHEREAS, the SCAQMD has not attained the national and state ambient air quality standards for ozone and oxidant respectively, and is designated as a nonattainment area for ozone;

WHEREAS, the SCAQMD Board, at its July 3, 1981 hearing, reduced the effectiveness of Rule 1113 below that achievable with reasonably available control technology;

WHEREAS, SCAQMD Rule 1113, as amended on July 3, 1981, does not contain provisions as stringent as control measures adopted by other districts in the state;

WHEREAS, a Technical Review Group (TRG) consisting of representatives of local air pollution control districts, EPA, and the ARB have developed a suggested control measure to limit the solvent content of architectural coatings based on several years of thorough investigation of the feasibility of reducing solvent content;

WHEREAS, the TRG has reexamined on the basis of presently available evidence the feasibility of meeting limitations of solvent of 350 grams per liter for interior nonflat and 250 grams per liter for interior flat and for all exterior coatings, and has reaffirmed its conclusion that these limitations are now feasible;

WHEREAS, the Board has received testimony from numerous coating manufacturers that they possess the ability to produce nonflat or enamel paints that will perform well and yet conform to a limitation of 380 grams of VOC per liter;

WHEREAS, the Board has received testimony that for most uses most manufacturers provide water-based nonflat paints that perform well and have the benefit of much lower emissions of VOC than occur with the use of solvent-based products;

WHEREAS, the Board has received testimony indicating that progress is being made to develop water-based nonflat paints that perform well in all applications, and that some manufacturers have produced products that appear fully competitive with conventional solvent-based products;

WHEREAS, representatives of the paint industry have agreed to participate in a task force to identify uses where water-based nonflat products cannot provide adequate performance, and to advise the Board and districts of any further changes to the rule that it deems appropriate; and

WHEREAS, the Board finds:

That emissions of VOC associated with the use of architectural coatings in the South Coast Air Basin (SCAB) are an important source of ozone precursors in the basin and in 1979 accounted for approximately 90 tons per day of emissions of VOC during the smog season, or 12 percent of the emissions of VOC from stationary sources, and that these emissions also contribute significantly to the formation of photochemically generated particulate matter;

That the state and national ambient air quality standards for oxidant, ozone, and suspended particulate matter are widely and frequently violated in the SCAB and further emission reductions of VOC are needed to attain and maintain these standards;

That the TRG has determined that reasonably available control technology exists to produce architectural coatings with lower solvent contents than those required by the amendments made to Rule 1113 on July 3, 1981, by the SCAQMD Board and that several of the districts represented on the TRG are successfully implementing rules that conform with the TRG recommendation;

That the technology to produce interior nonflat architectural coatings which comply with a 350 grams per liter solvent content limitation is generally available and that for exterior application water-based coatings that comply with a 250 grams per liter solvent limitation generally outperform solvent-based coatings;

That locally based architectural coating manufacturers who supply a substantial portion of the coatings used in the SCAQMD are presently experiencing difficulties in manufacturing interior nonflat coatings which comply with a 350 grams per liter solvent content or exterior nonflat coatings which comply with a 250 grams per liter solvent content, but are presently able to manufacture coatings with a 380 grams per liter solvent content;

That immediate implementation in the SCAQMD of the limits recommended by the TRG would result in severe financial hardship for some manufacturers in the SCAQMD and would likely result in some product unavailability in the SCAQMD;

That the technology to produce high quality solvent-based nonflat paints with VOC levels at or below 380 grams per liter is available;

That based on the facts set forth in this resolution, SCAQMD Rule 1113, as amended on July 3, 1981, will not meet and does not comply with the requirements of the Clean Air Act in that the rule:

Does not require that architectural coatings used in the SCAB reflect reasonably available control technology;

Would seriously compromise the ability of the SIP to provide for the attainment and maintenance of national ambient air quality standards for ozone in the SCAB;

Is less stringent than and inconsistent with SIP provisions adopted by the SCAQMD Board and approved by the Environmental Protection Agency;

Does not contain legally enforceable requirements which provide for attainment of national ambient air quality standards as expeditiously as practicable;

That the amendments to SCAQMD Rule 1113 adopted by this resolution will result in substantially lower emissions of VOC in the SCAB than under the Rule as amended July 3, 1981;

That SCAQMD Rule 1113 as amended by this resolution is technologically feasible and economically reasonable;

That the amendments to SCAQMD Rule 1113 adopted by this resolution are necessary to comply with the requirements of the Clean Air Act in that Rule 1113 as amended July 3, 1981, does not provide for the attainment of national ambient air quality standards as expeditiously as practicable and does not reflect reasonably available control technology;

That SCAQMD Rule 1113 as amended July 3, 1981, will not provide emission reductions needed to achieve and maintain the state ambient air quality standards in the SCAB;

That SCAQMD Rule 1113 as amended July 3, 1981, does not reflect the best available technologies and administrative practices; and

That the amendments to SCAQMD Rule 1113 adopted by this resolution are necessary to enable the SCAQMD to achieve and maintain the state ambient air quality standards.

NOW, THEREFORE, BE IT RESOLVED that Rule 1113 of the SCAQMD is hereby amended, effective December 31, 1981, as set forth in Attachment A.

BE IT FURTHER RESOLVED that the Executive Officer is directed to submit Rule 1113 as amended October 21, 1981, to EPA as a revision to California's state implementation plan.

BE IT FURTHER RESOLVED that the Board staff shall seek the cooperation of the Technical Review Group to establish a task force which includes a chairperson with acknowledged technical expertise concerning architectural coatings, four representatives of local air pollution control districts, one of whom shall be a representative of the SCAQMD and one of whom shall be a representative of the BAAQMD, three representatives of the paint industry, one representative of painting contractors and one member of the Board, to evaluate the performance of water-based nonflat paints and to make initial recommendations to the Board and the districts via the Technical Review Group prior to September 30, 1982, on modifications to district rules to allow the continued use of solvent-based products in those applications where the performance of water-based products is found to be inadequate.

I hereby certify that this is  
a true and correct copy of  
Resolution 81-65, as adopted by the  
Air Resources Board.

  
\_\_\_\_\_  
Sally Rump, Board Secretary

Attachment A

SCAQMD Rule 1113

(As Revised by The Air Resources Board on October 21, 1981)

- (a)(1) A person shall not sell, offer for sale, or apply any architectural coating manufactured after December 31, 1981, which, at the time of sale or manufacture:
- (A) contains more than 250 grams of volatile organic compounds per liter of coating (2.08 pounds per gallon), excluding any colorant added to tint bases, except as provided in section (a)(2); or
  - (B) is recommended for use as a bituminous pavement sealer unless it is an emulsion-type coating.
- (2) The provisions of section (a)(1) shall not apply to any architectural coating which, at the time of sale or manufacture:
- (A) contains no more than 380 grams of volatile organic compounds per liter of coating (3.17 pounds per gallon), excluding colorant added to tint bases, is defined as a nonflat coating, and is manufactured prior to September 2, 1983; or
  - (B) contains no more than 450 grams of volatile organic compounds per liter of coating (3.75 pounds per gallon), excluding colorant added to tint bases, is defined as a nonflat coating, and is manufactured by a small business prior to September 2, 1984.

- (b) The provisions of section (a) of this rule shall not apply to architectural coatings sold in this district for shipment outside of this district or for shipment to other manufacturers for repackaging.
- (c) The provisions of section (a)(2)(B) of this rule shall apply only to businesses which meet the criteria for a small business and have qualified for and maintained a small business exemption.
  - (1) A "Small Business" for the purpose of this rule is limited to a business which in 1976 sold less than 500,000 gallons of paints and coatings.
    - (A) A business shall not qualify for this exemption if it would not be considered a small business, as defined in Subsection (1) of Section 1896 of Title 2 of the California Administrative Code.
    - (B) A business shall not qualify for this exemption if its total annual sales volume of solvent-based paints and coatings which are not exempt from this rule exceeds by more than 10 percent the business's total sales volume of such coatings in calendar year 1976.
    - (C) In order to maintain an exemption beyond December 31, 1983, a business granted an exemption pursuant to this section shall, before the end of each calendar quarter, commencing with the quarter beginning October 1, 1983, file with the Executive Officer reports which demonstrate that it will be able to manufacture

coatings that will comply with the provisions of this rule by September 2, 1984. The reports must describe with specificity the steps which the business has undertaken and will undertake to manufacture complying coatings, and the timing of such steps.

- (2) To qualify and maintain a small business exemption, a business requesting such exemption shall file an annual request in writing with the Executive Officer prior to April 1st of each year. The business shall provide the Executive Officer any necessary information including, but not limited to:
- (A) total volume (in gallons) of paints and coatings sold in 1976;
  - (B) the number of persons employed;
  - (C) the gross sales receipts (in dollars) for 1976;
  - (D) total annual sales volume for 1976 and any subsequent year of paints and coatings which are not exempt from this rule; and
  - (E) other information necessary to document that the business is not an affiliate of another business concern which would not be considered a small business for the purposes of this rule shall also be provided by the Executive Officer.

(3) The Executive Officer, after considering information submitted by the business concern, shall determine whether such concern qualifies as a small business as defined in subsection (1) of this section and shall inform the business concern of this determination in writing.

(d) The provisions of section (a) shall not apply to the following coatings manufactured prior to September 2, 1983.

- (1) architectural coatings supplied in containers having capacities of one liter or less;
- (2) traffic coatings applied to public streets and highways; however, this exemption shall not extend to traffic coatings applied to other surfaces, including but not limited to curbs, berms, driveways and parking lots.
- (3) architectural coatings recommended by the manufacturer for use solely as a:
  - (A) varnish, lacquer, or shellac
  - (B) semitransparent stain
  - (C) opaque stain on bare redwood, cedar, mahogany, and douglas fir
  - (D) primer, sealer, or undercoater
  - (E) wood preservative
  - (F) fire retardant coating
  - (G) tile-like glaze coating

- (H) waterproofing coating, except bituminous pavement sealers
- (I) industrial maintenance finish
- (J) metallic pigmented coatings
- (K) swimming pool coating
- (L) graphic arts coatings
- (M) mastic coatings
- (N) multicolored coatings

- (e) Containers for all coatings subject to section (a) shall display the date of manufacture of the contents or a code indicating the date of manufacture. The manufacturers of such coatings shall file with the Executive Officer of the District and the Executive Officer of the Air Resources Board prior to September 2, 1981, an explanation of each code.
- (f) If anywhere on the coating container, or any sticker or label affixed thereto, or in any sales or advertising literature any indication is given that the coating may be used or is suitable for use for any purpose other than those specifically provided for in section (d) of this rule, then the exemption provided for in said section (d) shall not apply to that coating.
- (g) In any instance where more than one of the standards set forth in section (a) of this rule may be applicable, the most restrictive standard shall apply.
- (h) A person shall not use, sell or offer for sale for use in the District, in containers of 0.94 liter (one quart) capacity or larger, any architectural coating containing photochemically

reactive solvent. The provisions of this subsection shall not apply to those coatings in compliance with section (a) of this rule.

(i) A person shall not thin or dilute any architectural coating with a photochemically reactive solvent. The provisions of this subsection shall not apply to those coatings in compliance with section (a) of this rule.

(j) Definitions

For the purpose of this rule, the following definitions shall apply.

(1) Architectural Coatings

Any coatings applied to stationary structures and their appurtenances, to mobile homes, to pavements, or to curbs.

(2) Bituminous Coatings Materials

Black or brownish materials, soluble in carbon disulfide, consisting mainly of hydrocarbons and which are obtained from natural deposits, or as residues from the distillation of crude petroleum oils, or of flow grades of coal.

(3) Fire Retardant Coatings

(A) coatings which reduce rate of flame spread on the surface of a material to which such a coating has been applied, or

(B) resist ignition when exposed to high temperature, or

(C) insulate a substrate to which such a coating has been applied and prolong the time required to reach ignition temperature.

(4) Flat Coatings

Coatings which register gloss less than 15 on an 85° meter or less than five on a 60° meter, or which is labeled as a flat coating.

(5) Graphic Arts Coatings

Coatings which are marketed solely for application to indoor and outdoor signs and include lettering enamels, poster colors and bulletin colors.

(6) Industrial Maintenance Finishes

High performance coatings which are formulated for the purpose of heavy abrasion, water immersion, chemical, corrosion, temperature, electrical or solvent resistance.

(7) Mastic Coatings

Weatherproofing coatings which are formulated to cover holes, minor cracks, and conceal surface irregularities, and which are applied in thicknesses of at least 15 mils.

(8) Metallic Pigmented Paints

Non-bituminous coatings which are formulated with metallic pigment.

(9) Multi-colored Coatings

Coatings which exhibit more than one color when applied and which are packaged in a single container and applied in a single coat.

(10) Non-flat Coatings

Coatings which register gloss of 15 or greater on an 85° meter or five or greater on a 60° meter, and which is identified on the label as a gloss, semigloss, or eggshell enamel coating.

(11) Opaque Stains

All stains that are not classified as semitransparent stains.

(12) Primers

Coatings which are intended to be applied to a surface to provide a firm bond between the substrate and subsequent coats.

(13) Sealers

Coatings which are intended for use on porous substrates to protect the substrate, to prevent subsequent coatings from being absorbed by the substrate, or to prevent harm to subsequent coatings by materials in the substrates.

(14) Semitransparent Stains

Coatings which are formulated to change the color of a surface but not conceal the surface.

(15) Tile-like Glaze Coatings

Coatings which are formulated to provide a tough, extrudable coating system, which are applied as a continuous (seamless) high-build film and which cure to a hard glaze finish.

(16) Undercoaters

Coatings which are designed to provide a smooth surface for subsequent coats.

(17) Varnishes, Lacquers, and Shellacs

Coatings which contain resins and binders but not opaque pigments and which are specifically formulated to form a transparent or translucent solid protective film.

(18) Volatile Organic Compounds (VOC)

Compounds of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, methane, 1,1,1-trichloroethane, methylene chloride, and trichlorotrifluoroethane.

(19) Waterproofing Coating

Coatings which are formulated for the sole purpose of preventing penetration of the substrate by water. These coatings include, but are not limited to, bituminous roof and resilient type coatings.

(20) Wood Preservatives

Coatings which are formulated for the purpose of protecting exposed wood from decay and insect attack. These coatings perform their function by penetrating into the wood.

State of California  
Air Resources Board

Response to Significant Environmental Issues

Item: Public Hearing to Further Consider Amendments to Rule 1113 of the South Coast Air Quality Management District Limiting the Solvent Content of Architectural Coatings.

Agenda Item No.: 81-21-1

Public Hearing Date: October 21, 1981

Response Date: October 21, 1981

Issuing Authority: Air Resources Board

Comment: The South Coast Air Quality Management District and several other commenters claimed that the rule as proposed would result in increased VOC emissions.

Response: The evidence does not support this claim. The amended rule will reduce VOC emissions compared to the July 3, 1981 rule. The South Coast District testified October 21 that the amendments as adopted would not result in increased emissions.

Comment: Staff and a member of the public raised a concern about the possible environmental effects of a provision in the rule as adopted July 3, 1981, which is unaltered by the Board's action. This provision exempts certain solvents of low photochemical reactivity (1,1,1-trichloroethane, methylene chloride and trichlorotrifluoroethane) which are under study for possible toxic effects.

Response: In the course of investigating this issue staff has reached the conclusion that because of cost considerations it is unlikely that these compounds will be used in the architectural type coatings currently regulated and therefore it is not expected that a significant adverse environmental effect will result from their exemption. If evidence arises which demonstrates an increase in the use of these solvents, the South Coast District can consider eliminating the exemption.

CERTIFIED:

Sally Rump  
Board Secretary

Date:

10/28/81

State of California  
AIR RESOURCES BOARD

Resolution 81-68

November 19, 1981

Agenda Item No.: 81-24-2

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, Section 43100 of the Health and Safety Code authorizes the Board to certify new motor vehicles;

WHEREAS, Section 43102 of the Health and Safety Code provides that no new motor vehicle shall be certified unless it meets specified emission standards and test procedures set by the state board;

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

WHEREAS, Sections 43000(c) and 43000(e) of the Health and Safety Code state that emission standards and test procedures applied to new motor vehicles are standards and procedures with which all new motor vehicles must comply;

WHEREAS, Title 13, California Administrative Code (CAC), Section 1960.1 presently establishes a 50,000-mile oxides of nitrogen (NOx) emission standard for the 1982 model year of 1.5 grams per mile (g/mi) for vehicles in the 4,000-5,999 pounds equivalent inertia weight (EIW) class and 2.0 g/mi for vehicles in the 6,000 pounds and larger EIW class;

WHEREAS, Title 13, CAC, Section 1960.1 presently establishes a 50,000-mile NOx emission standard for 1983 and subsequent model years of 1.0 g/mi for vehicles in the 4,000-5,999 pounds EIW class and 1.5 g/mi for vehicles in the 6,000 pounds and larger EIW class;

WHEREAS, Title 13, CAC, Section 1960.1 presently establishes optional 100,000-mile NOx emission standards for the 1982 model year of 1.5 g/mi for vehicles in the 0-3,999 pounds EIW class, 2.0 g/mi for vehicles in the 4,000-5,999 pounds EIW class and 2.3 g/mi for vehicles in the 6,000 pounds and larger EIW class;

WHEREAS, Title 13, CAC, Section 1960.1 presently establishes optional 100,000-mile NOx emission standards for 1983 and subsequent model years of 1.0 g/mi for vehicles in the 0-3,999 pounds EIW class, 1.5 g/mi for vehicles in the 4,000-5,999 pounds EIW class and 2.0 g/mi for vehicles in the 6,000 pounds and larger EIW class;

WHEREAS, an individual manufacturer of gasoline-powered light-duty trucks and medium-duty vehicles (4,000 pounds and larger EIW) has, on the basis of economic concerns, petitioned the Board to carry over the 1982 50,000-mile standards for vehicles in the 4,000-5,999 pounds and 6,000 pounds and larger EIW classes to 1983 and subsequent years, subject to a seven-year/75,000-mile recall;

WHEREAS, several manufacturers of diesel-powered passenger cars, light-duty trucks and medium-duty vehicles (0-3,999 pounds EIW) have petitioned the Board to reconsider the present 1983 and subsequent years optional 100,000 mile 1.0 g/mi NOx standard based upon the asserted lack of technological capability to meet the standard by 1983;

WHEREAS, an individual manufacturer of diesel-powered light-duty trucks and medium-duty vehicles in the 4,000 pounds and larger EIW class has petitioned the Board to reconsider the 1983 and subsequent years optional 100,000-mile 1.5 g/mi (4,000-5,999 pounds EIW) and 2.0 g/mi (6,000 pounds and larger EIW) NOx emissions standards based upon the asserted lack of technological capability to meet the standards by 1983;

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

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

WHEREAS, the Board reaffirms its previous finding that the control of NOx emissions from motor vehicles is necessary to protect the health and well-being of people in the state, and to achieve and maintain state and national ambient air quality standards; and

WHEREAS, the Board finds:

That three-way catalyst technology exists which is capable of meeting the presently existing 50,000-mile exhaust emission standards for 1983 and subsequent model years for gasoline-powered light-duty trucks and medium-duty vehicles in the 4,000-5,999 pounds EIW class and the 6,000 pounds and larger EIW class;

That there are technological problems associated with diesel-powered passenger cars, light-duty trucks and medium-duty vehicles (0-3,999 pounds EIW) using mechanical exhaust gas recirculation (EGR) technology to meet the optional 100,000-mile 1.0 g/mi NOx standard by 1983;

That manufacturers are developing a more advanced electronically controlled EGR system which has demonstrated the potential of meeting the 1.0 g/mi NOx emissions standard for passenger cars, light-duty trucks, and medium-duty vehicles (0-3,999 pounds EIW) by 1984;

That there are technological problems associated with diesel-powered passenger cars, light-duty trucks and medium-duty vehicles (4,000-5,999 pounds EIW) using mechanical EGR technology to meet the 1983 and subsequent model years optional 100,000-mile 1.5 g/mi NOx standard by 1983;

That electronically controlled EGR systems will be utilized and could achieve the 1.5 g/mi (4,000-5,999 pounds EIW) NOx levels by 1984;

That in model year 1984 optional 100,000-mile NOx emission standards of 1.0 g/mi (0-3,999 pounds EIW) and 1.5 g/mi (4,000-5,999 pounds EIW) are technologically and economically feasible and would allow the manufacturers the necessary lead time to perfect electronically controlled EGR systems for diesel-powered passenger cars, light-duty trucks, and medium-duty vehicles;

That failure to extend the 1982 100,000-mile optional standards for vehicles in the 0-3,999 and 4,000-5,999 pounds EIW classes through 1983 will cause economic hardship to the manufacturers and the impairment of model availability to California consumers;

That no substantial evidence has been presented to support the one manufacturer's claim that it cannot meet the 1983 and subsequent model years optional 100,000-mile 2.0 g/mi NOx emission standard for vehicles in the 6,000 pounds and larger EIW class, and, to the contrary, the Board finds that the evidence indicates that the manufacturer can meet the present 1983 and subsequent model years standard for this weight class;

That the continuation to 1984 of the present 1982 100,000-mile optional NOx standards for vehicles in the 0-3,999 and 4,000-5,999 pounds EIW classes may have an adverse effect on the environment but that any NOx increases are mitigated to the maximum extent feasible by associated reductions in particulate emissions and that other alternatives are not technologically or economically feasible;

NOW, THEREFORE, BE IT RESOLVED that the Board hereby amends Title 13, California Administrative Code, Section 1960.1 as set forth in Attachment A hereto.

BE IT FURTHER RESOLVED that the Board hereby amends 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 confirms its previous finding that in the 1983 and subsequent model years the 50,000-mile NOx emission standards of 1.0 g/mi (4,000-5,999 pounds EIW) and 1.5 g/mi (6,000 pounds and larger EIW) are presently technologically and economically feasible for light-duty trucks and medium-duty vehicles.

BE IT FURTHER RESOLVED that the Board confirms its previous finding that in 1983 and subsequent model years the 100,000-mile optional NOx emissions standard of 2.0 g/mi for vehicles in the 6,000 pounds and larger EIW are presently technologically and economically feasible for medium-duty vehicles.

BE IT FURTHER RESOLVED that the amended optional standards are as stringent and, in the aggregate, as protective of public health as the applicable federal standards.

I certify that the above is a true and correct copy of Resolution 81-68 as adopted by the Air Resources Board.

*Sally Rump for*  
Sally Rump, Board Secretary

Attachment A

Amend Section 1960.1, Title 13, California Administrative Code, 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) The exhaust emissions from new 1981 and subsequent model passenger cars, light-duty trucks, and medium-duty vehicles, subject to registration and sold and registered in this state, shall not exceed:

50,000 MILE EXHAUST EMISSION STANDARDS  
(grams per mile)

<u>Model- Year</u>	<u>Vehicle Type (1)</u>	<u>Equivalent Inertia Weight (lbs.) (2)</u>	<u>Non-Methane Hydrocarbons(3)</u>	<u>Carbon Monoxide</u>	<u>Oxides of Nitrogen (NO<sub>2</sub>)(6)</u>
1981	PC	All	(0.41)	3.4	1.0
	PC(4)	All	0.39 (0.41)	7.0	0.7
	LDT,MDV	0-3999	0.39 (0.41)	9.0	1.0
	LDT,MDV	4000-5999	0.50 (0.50)	9.0	1.5
	MDV	6000 & larger	0.60 (0.60)	9.0	2.0
	1982	PC	All	0.39 (0.41)	7.0
PC(4)		All	0.39 (0.41)	7.0	0.7
LDT,MDV		0-3999	0.39 (0.41)	9.0	1.0
LDT,MDV		4000-5999	0.50 (0.50)	9.0	1.5
MDV		6000 & larger	0.60 (0.60)	9.0	2.0
1983 & Subsequent		PC	All	0.39 (0.41)	7.0
	PC (5)	All	0.39 (0.41)	7.0	0.7
	LDT,MDV	0-3999	0.39 (0.41)	9.0	0.4
	LDT,MDV (5)	0-3999	0.39 (0.41)	9.0	1.0
	LDT,MDV	4000-5999	0.50 (0.50)	9.0	1.0
	MDV	6000 & larger	0.60 (0.60)	9.0	1.5

100,000 MILE EXHAUST EMISSION STANDARDS  
(grams per mile)

Model- Year	Vehicle Type (1)	Equivalent Inertia Weight (lbs.) (2)	Non-Methane Hydrocarbons(3)	Carbon Monoxide	Oxides of Nitrogen (NO <sub>2</sub> ) (6)
1981	PC (Option 1)	All	0.39 (7)	3.4	1.5
	PC (Option 2)	All	0.46 (7)	4.0	1.5
	LDT,MDV (Option 1)	0-3999	0.39 (0.41) (7)	9.0	1.5
	LDT,MDV (Option 2)	0-3999	0.46 (7)	10.6	1.5
	LDT,MDV Option 1	4000-5999	0.50 (0.50) (7)	9.0	2.0
	MDV Option 1	6000 & larger	0.60 (0.60) (7)	9.0	2.3
	1982	PC (Option 1)	All	0.39 (0.41)	7.0
PC (Option 2)		All	0.46	8.3	1.5
LDT, MDV (Option 1)		0-3999	0.39 (0.41)	9.0	1.5
LDT, MDV (Option 2)		0-3999	0.46	10.6	1.5
LDT,MDV Option 1		4000-5999	0.50 (0.50)	9.0	2.0
MDV Option 1		6000 & larger	0.60 (0.60)	9.0	2.3
1983-& Subse- quent		PC (Option 1)	All	0.39 (0.41)	7.0
	PC (Option 2)	All	0.46	8.3	<del>1.0</del> 1.5
	LDT,MDV (Option 1)	0-3999	0.39 (0.41)	9.0	<del>1.0</del> 1.5
	LDT,MDV (Option 2)	0-3999	0.46	10.6	<del>1.0</del> 1.5
	LDT,MDV Option 1	4000-5999	0.50 (0.50)	9.0	<del>1.5</del> 2.0
	MDV Option 1	6000 & larger	0.60 (0.60)	9.0	2.0
	<u>1984 &amp; Subse- quent</u>	<u>PC Option 1</u>	<u>All</u>	<u>0.39 (0.41)</u>	<u>7.0</u>
<u>PC Option 2</u>		<u>All</u>	<u>0.46</u>	<u>8.3</u>	<u>1.0</u>
<u>LDT,MDV (Option 1)</u>		<u>0-3999</u>	<u>0.39 (0.41)</u>	<u>9.0</u>	<u>1.0</u>
<u>LDT,MDV (Option 2)</u>		<u>0-3999</u>	<u>0.46</u>	<u>10.6</u>	<u>1.0</u>
<u>LDT,MDV Option 1</u>		<u>4000-5999</u>	<u>0.50 (0.50)</u>	<u>9.0</u>	<u>1.5</u>
<u>MDV Option 1</u>		<u>6000 &amp; larger</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 second set of passenger car standards is optional. A manufacturer must select either the primary or optional sets of standards for its full product line for the entire two-year period.
- (5) This set of standards for 1983 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) 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.
- (7) For vehicles from evaporative emissions families with projected 50,000 mile evaporative emissions values below 1.0 gm/test, an adjustment to the hydrocarbon exhaust emission standards may be granted by the Executive Officer. The adjusted standard will be calculated using the following formula:

$$HC_{ex} = .75 (.185 - [(Di+3.3 Hs) \div (29.4)]) + HC_o$$

Where:

$HC_{ex}$  = adjusted exhaust hydrocarbon standard

$HC_o$  = unadjusted exhaust hydrocarbon standard

$Di$  = diurnal evaporative emissions

$Hs$  = hot soak evaporative emissions.

(b) 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 Air Resources Board on November 23, 1976, and as last amended May-20, -1981 November 19, 1981.

(c) With respect to any new vehicle required to comply with the standards set forth in paragraph (a), 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 (b) above. Any failure to perform scheduled maintenance shall not excuse an emissions violation unless the failure is related to or causative of the violation.

(d) Any vehicle required to comply with the standards set forth in paragraph (a) which is subject to a standard set by federal law or regulation controlling emissions of particulate matter must conform to such standard.

NOTE: Authority cited: Sections 39600 and 39601, Health and Safety Code. Reference: Sections 43013, 43100, 43101, 43104 and 43106, Health and Safety Code.

HISTORY:

1. New section filed 6-13-78; effective thirtieth day thereafter (Register 78, No. 24).
2. Amendment of subsection (b) filed 2-9-79 as an emergency; effective upon filing (Register 79, No. 6).
3. Certificate of Compliance filed 5-11-79 (Register 79, No. 19).
4. Amendment filed 5-31-79; effective thirtieth day thereafter (Register 79, No. 22).
5. Amendment filed 10-7-80 as an emergency; effective upon filing (Register 80, No. 41). A Certificate of Compliance must be transmitted to OAL within 120 days or emergency language will be repealed on 2-5-81.
6. Certificate of Compliance as to order 10-7-80 filed 1-28-81 (Register 81, No. 5).

Attachment B

Proposed

State of California  
AIR RESOURCES BOARD

Note: These procedures are printed in a style to indicate the adopted changes. New text is underlined and deleted portions are noted.

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: November 19, 1981

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

The provisions of Subparts A and B, Part 86, Title 40, Code of Federal Regulations, as they existed on April 15, 1978, are hereby adopted as the California Exhaust Emission Standards and Test Procedures for 1981 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles, with the following exceptions and additions:

1. Applicability

- a. These test procedures are applicable to 1981 and subsequent model passenger cars, light-duty trucks and medium-duty vehicles, except motorcycles. References to "light-duty trucks" in 40 CFR 86 shall apply both to "light-duty trucks" and "medium-duty vehicles" in these procedures.
- b. Any reference to vehicle sales throughout the United States shall mean vehicle sales in California.
- c. Regulations concerning EPA hearings, EPA inspections, specific language on the Certificate of Conformity, evaporative emissions, high-altitude vehicles and testing, and heavy-duty engines and vehicles shall not be applicable to these procedures, except where specifically noted.

2. Definitions

- a. "Administrator" means the Executive Officer of the Air Resources Board.
- b. "Certificate of Conformity" means Executive Order certifying vehicles for sale in California.
- c. "Certification" means certification as defined in Section 39018 of the Health and Safety Code.
- d. "Passenger car" means any motor vehicle designed primarily for transportation of persons and having a capacity of twelve persons or less.

- e. "Heavy-duty engine" means an engine which is used to propel a heavy-duty vehicle.
- f. "Heavy-duty vehicle" means any motor vehicle having a manufacturer's gross vehicle weight rating greater than 6,000 pounds, except passenger cars.
- g. "Light-duty truck" means any motor vehicle, rated at 6,000 pounds gross vehicle weight or less, which is designed primarily for purposes of transportation of property or is a derivative of such a vehicle, or is available with special features enabling off-street or off-highway operation and use.
- h. "Medium-duty vehicle" means any heavy-duty vehicle having a manufacturer's gross vehicle weight rating of 8500 pounds or less.

### 3. Test Procedures

- a. In order to demonstrate compliance with a non-methane hydrocarbon emission standard, hydrocarbon emissions shall be measured in accordance with the "California Non-Methane Hydrocarbon Test Procedures."
- b. Durability data submitted pursuant to subparagraph 86.078-23(f) may be from vehicles previously certified by EPA or ARB.
- c. The requirements in subparagraph 86.078-28(a)(4)(i)(B) (durability vehicles must meet emission standards) refer, for each pollutant, to the highest of either the federal or California emission standards.
- d. In paragraph 86.079-21 (Application for certification), amend subparagraph (b)(5) to read:
  - (5) A statement of maintenance and procedures consistent with the restrictions imposed under subparagraph 86.078-25(a)(1), necessary to assure that the vehicles (or engines) covered by a certificate of conformity in operation in normal use conform to the regulations, and a description of the program for training of personnel for such maintenance, and the equipment required.

e. In paragraph 86.078-25 (Maintenance):

1. Amend subparagraph (a)(1) to read as follows:

(1) Scheduled maintenance on the engine, emission control system and fuel system of durability vehicles shall, unless otherwise provided pursuant to paragraph (a) (5)(iii), be restricted as set forth in the following provisions.

(i)(A) for gasoline-fueled vehicles, maintenance shall be restricted to the inspection, replacement, cleaning, adjustment and/or service of the following items at intervals no more frequent than indicated:

- (1) Drive belts on engine accessories (tension adjustment only); (30,000 miles).
- (2) Valve lash (15,000 miles).
- (3) Spark plugs (30,000 miles).
- (4) Air filter (30,000 miles).
- (5) Exhaust gas sensor (30,000 miles): Provided that an audible and/or visible signal approved by the Executive Officer alerts the vehicle operator to the need for sensor maintenance at the mileage point.
- (6) Choke (cleaning or lubrication only); (30,000 miles).
- (7) In addition, adjustment of the engine idle speed (curb idle and fast idle), valve lash, and engine bolt torque may be performed once during the first 5,000 miles of scheduled driving, provided the manufacturer makes a satisfactory showing that the maintenance will be performed on vehicles in use.

(B) for diesel-powered vehicles, maintenance shall be restricted to the following items at intervals no more frequent than every 12,500 miles of scheduled driving, provided that no maintenance may be performed after 45,000 miles of scheduled driving:

- (1) Adjust low idle speed.
- (2) Adjust valve lash if required.
- (3) Adjust injector timing.
- (4) Adjust governor.
- (5) Clean and service injector tips.
- (6) Adjust drive belt tension on engine accessories.
- (7) Check engine bolt torque and tighten as required.

(ii) Change of engine and transmission oil, change or service of oil filter and, for diesel-powered vehicles only, change or service of fuel filter and air filter, will be allowed at the mileage intervals specified in the manufacturer's maintenance instructions.

(iii) Maintenance shall be conducted in a manner consistent with service instructions and specifications provided by the manufacturer for use by customer service personnel.

- (2) Delete subparagraph (a)(3) (Service of exhaust gas recirculation system).
- (3) Delete subparagraph (a)(4) (Service of catalytic converter).

f. In paragraph 86.078-38 (Maintenance instructions):

1. Amend subparagraph (a) to read:

(a) The manufacturer shall furnish or cause to be furnished to the purchaser of each new motor vehicle (or motor vehicle engine) subject to the standards prescribed in paragraphs 86.078-8 through 86.078-11 as applicable, written instructions for the maintenance and use of the vehicle (or engine) by the purchaser as may be reasonable and necessary to assure the proper functioning of emission control systems in normal use. Such instructions shall be consistent with and not require maintenance in excess of the restrictions imposed under subparagraph 86.078-25(a)(1), except that the instructions may, subject to approval by the Administrator, require additional maintenance for vehicles operated under extreme conditions. In addition, subject to approval by the Administrator, the instructions may require inspections necessary to insure safe operation of the vehicle in use.

In addition to any maintenance which may be required pursuant to the preceding paragraph, the instructions may also recommend such inspections, maintenance, and repair as may be reasonable and necessary for the proper functioning of the vehicle and its emission control systems. If the instructions recommend maintenance in addition to that which may be required pursuant to the preceding paragraph, they shall distinguish clearly between required and recommended maintenance.

2. Amend subparagraph (c)(1) to read:

(1) Such instructions shall specify the performance of all scheduled maintenance performed by the manufacturer under subparagraph 86.078-25(a)(1).

If the instructions specify recommended maintenance as well as required maintenance, they shall distinguish clearly between the two.

3. Amend subparagraph (d) by adding a new subparagraph (3) to read:

(3) Such instructions shall specify the performance of all scheduled maintenance performed by the manufacturer under subparagraph 86.078-25(a)(1).

If the instructions specify recommended maintenance as well as required maintenance, they shall distinguish clearly between the two.

9. Amend subparagraph 86.078-39(a) (Submission of maintenance instructions) to read:

(a) The manufacturer shall provide to the Administrator, no later than the time of the submission required by paragraph 86.078-23 a copy of the maintenance instructions which the manufacturer proposes to supply to the ultimate purchaser in accordance with subparagraph 86.078-38(a). The Administrator will review such instructions to determine whether they are consistent with federal requirements, and whether the instructions for required maintenance are consistent with the restrictions imposed under subparagraph 86.078-25(a)(1). The Administrator will notify the manufacturer of his determinations.

4. Standards

The following standards represent the maximum projected exhaust emissions for the useful life of the vehicle.

Model Year	Vehicle Type (a)	Equivalent Inertia Weight (lbs.)(b)	Non-Methane Hydrocarbons(c)	50,000 Mile Exhaust Emission Standards (grams per vehicle mile)	
				Carbon Monoxide	Oxides of Nitrogen (NO <sub>2</sub> )(e)
1981	PC	All	(0.41)	3.4	1.0
	PC(d)	All	0.39 (0.41)	7.0	0.7
	PC(g)	All	0.39 (0.41)	7.0	1.5
	LDT, MDV	0-3999	0.39 (0.41)	9.0	1.0
	LDT, MDV(h)	0-3999	0.39 (0.41)	9.0	1.5
	LDT, MDV	4000-5999	0.50 (0.50)	9.0	1.5
	MDV	6000&larger	0.60 (0.60)	9.0	2.0
	MDV	6000&larger	0.60 (0.60)	9.0	2.0
1982	PC	All	0.39 (0.41)	7.0	0.4
	PC(d)	All	0.39 (0.41)	7.0	0.7
	PC(i)	All	0.39 (0.41)	7.0	1.0
	LDT, MDV	0-3999	0.39 (0.41)	9.0	1.0
	LDT, MDV	4000-5999	0.50 (0.50)	9.0	1.5
	LDT, MDV(h)	0-3999	0.39 (0.41)	9.0	1.5
	MDV	6000&larger	0.60 (0.60)	9.0	1.5
	MDV	6000&larger	0.60 (0.60)	9.0	2.0
1983 & Subsequent	PC	All	0.39 (0.41)	7.0	0.4
	PC(k)	All	0.39 (0.41)	7.0	0.7
	LDT, MDV	0-3999	0.39 (0.41)	9.0	0.4
	LDT, MDV(k)	0-3999	0.39 (0.41)	9.0	1.0
	LDT, MDV	4000-5999	0.50 (0.50)	9.0	1.0
	MDV	6000&larger	0.60 (0.60)	9.0	1.5
1983(i)	PC	All	0.39 (0.41)	7.0	0.7(j)
	LDT, MDV	0-3999	0.39 (0.41)	9.0	1.0
1984(i)	PC	All	0.39 (0.41)	7.0	0.7
	LDT, MDV	0-3999	0.39 (0.41)	9.0	0.7(j)
1985(i)	LDT, MDV	0-3999	0.39 (0.41)	9.0	0.7

Model Year	Vehicle Type (a)	Equivalent Inertia Weight (lbs.) (b)	1967-1970 EPA Exhaust Emission Standards (grams per vehicle mile)			Oxides of Nitrogen NO <sub>2</sub> (e)
			Non-Methane Hydrocarbons (c)	Carbon Monoxide		
1981	PC (Option 1)	All	0.39	(f)	3.4	1.5
	PC (Option 2)	All	0.46	(f)	4.0	1.5
	LDT, MDV (Option 1)	0-3999	0.39	(0.41) (f)	9.0	1.5
	LDT, MDV (Option 2)	0-3999	0.46	(f)	10.6	1.5
	LDT, MDV (Option 1)	4000-5999	0.50	(0.50) (f)	9.0	2.0
	MDV (Option 1)	6000+larger	0.60	(0.60) (f)	9.0	2.3
1982	PC (Option 1)	All	0.39	(0.41)	7.0	1.5
	PC (Option 2)	All	0.46		8.3	1.5
	LDT, MDV (Option 1)	0-3999	0.39	(0.41)	9.0	1.5
	LDT, MDV (Option 2)	0-3999	0.46		10.6	1.5
	LDT, MDV (Option 1)	4000-5999	0.50	(0.50)	9.0	2.0
	MDV (Option 1)	6000&larger	0.60	(0.60)	9.0	2.3
1983 & Subsequent	PC (Option 1)	All	0.39	(0.41)	7.0	<del>4.0</del> 1.5
	PC (Option 2)	All	0.46		8.3	<del>4.0</del> 1.5
	LDT, MDV (Option 1)	0-3999	0.39	(0.41)	9.0	<del>4.0</del> 1.5
	LDT, MDV (Option 2)	0-3999	0.46		10.6	<del>4.0</del> 1.5
	LDT, MDV (Option 1)	4000-5999	0.50	(0.50)	9.0	<del>4.5</del> 2.0
	MDV (Option 1)	6000&larger	0.60	(0.60)	9.0	2.0
1984 & Subsequent	PC (Option 1)	All	<u>0.39</u>	<u>(0.41)</u>	<u>7.0</u>	<u>1.0</u>
	PC (Option 2)	All	<u>0.46</u>		<u>8.3</u>	<u>1.0</u>
	LDT, MDV (Option 1)	0-3999	<u>0.39</u>	<u>(0.41)</u>	<u>9.0</u>	<u>1.0</u>
	LDT, MDV (Option 2)	0-3999	<u>0.46</u>		<u>10.6</u>	<u>1.0</u>
	LDT, MDV (Option 1)	4000-5999	<u>0.50</u>	<u>(0.50)</u>	<u>9.0</u>	<u>1.5</u>
	MDV (Option 1)	6000&larger	<u>0.60</u>	<u>(0.60)</u>	<u>9.0</u>	<u>2.0</u>

(a) "PC" means passenger cars.

"LDT" means light-duty trucks.

"MDV" means medium-duty vehicles.

(b) Equivalent inertia weights are determined under subparagraph 86.129-79(a).

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

- (d) The second set of passenger car standards is optional. A manufacturer must select either the primary or optional sets of standards for its full product line for the entire two-year period.
- (e) The maximum projected emissions of oxides of nitrogen measured on the federal Highway Fuel Economy Test (HWFET; 40 CFR Part 600, Subparagraph B) shall be no greater than 1.33 times the applicable passenger car standards and 2.0 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.
- (f) For vehicles from evaporative emissions families with projected 50,000 mile evaporative emissions values below 1.0 gm/test, an adjustment to the hydrocarbon exhaust emission standard may be granted by the Executive Officer. The adjusted standard will be calculated using the following formula:

$$HC_{ex} = .75 \left( .185 - \frac{Di+3.3 Hs}{29.4} \right) + HC_0$$

Where:

$HC_{ex}$  = adjusted exhaust hydrocarbon standard

$HC_0$  = unadjusted exhaust hydrocarbon standard

Di = diurnal evaporative emissions

Hs = hot soak evaporative emissions.

- (g) For vehicles certified to special standards authorized by Section 1960.2, Article 2, subchapter 1, Chapter 3, Title 13, California Administrative Code.
- (h) For vehicles certified to special standards authorized by Section 1960.3, Article 2, subchapter 1, Chapter 3, Title 13, California Administrative Code.
- (i) 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.
- (j) 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.
- (k) Optional Standards. A manufacturer may choose to certify to these optional standards pursuant to the provisions set forth in Section 1960.15, Title 13, California Administrative Code.

#### 5. Additional Requirement

- a. A statement must be supplied that the production vehicles shall be in all material respects the same as those for which certification is granted.

- b. If a gasoline-fueled vehicle manufacturer requires the use of unleaded fuel, a statement will be required that the engine and transmission combinations for which certification is requested are designed to operate satisfactorily on a gasoline having a research octane number not greater than 91.
- c. Labeling required pursuant to paragraph 86.079-35 and Section 1965, Chapter 3, Title 13 of the California Administrative Code shall conform with the requirements specified in the "California Motor Vehicle Tune-Up Label Specifications."
- d. For gasoline-powered vehicles evidence shall be supplied that the air/fuel metering system or secondary air injection system is capable of providing sufficient oxygen to theoretically allow enough oxidation to attain the CO emission standard at barometric pressures equivalent to those expected at altitudes ranging from sea level to 6,000 feet elevation.
- e. The mechanism for adjusting the idle air/fuel mixture, if any, shall be designed so that either:
  - (i) The mixture adjustment mechanism is not visible, even with the air cleaner removed, and special tools and/or procedures are required to make adjustments; or
  - (ii) in the alternative, the Executive Officer may, upon reasonable notice to the manufacturer, require that a certification test of a vehicle be conducted with the idle air/fuel mixture at any setting which the Executive Officer finds corresponds to settings likely to be encountered in actual use. The Executive Officer, in making this finding, shall consider the difficulty of making adjustments, damage to the carburetor in the event of any effort to make an improper adjustment, and the need to replace parts following the adjustment.

The manufacturer shall submit for approval by the Executive Officer his or her proposed method for compliance with this requirement in his or her preliminary application for certification.

- f. The exhaust emissions shall be measured from all exhaust emission data vehicles tested in accordance with the federal Highway Fuel Economy Test (HWFET; 40 CFR Part 600 Subpart B). The oxides of nitrogen emissions measured during such tests shall be multiplied by the oxides of nitrogen deterioration factor computed in accordance with paragraph 86.078-28, and then rounded and compared with the standard as set forth in paragraph 4 above. All data obtained pursuant to this paragraph shall be reported in accordance with procedures applicable to other exhaust emissions data required pursuant to these procedures.

In the event that one or more of the manufacturer's emission data vehicles fail the HWFET standard listed in paragraph 4, the manufacturer may submit to the Executive Officer engineering data or other evidence showing that the system is capable of complying with the standard. If the Executive Officer finds, on the basis of an engineering evaluation, that the system can comply with the HWFET standard, he or she may accept the information supplied by the manufacturer in lieu of vehicle test data.

- g. The manufacturer shall submit to the Executive Officer a statement that those vehicles for which certification is requested have driveability and performance characteristics which satisfy that manufacturer's customary driveability and performance requirements for vehicles sold in the United States. This statement shall be based on driveability data and other evidence showing compliance with the manufacturer's performance criteria. This statement shall be supplied with the manufacturer's final application for certification, and with all running changes for which emission testing is required.

If the Executive Officer has evidence to show that in-use vehicles demonstrate poor performance that could result in wide-spread tampering with the emission control systems, he or she may request all driveability data and other evidence used by the manufacturer to justify the performance statement.

#### 6. Optional 100,000 Mile Certification Procedure

The alternate emission standards shown in paragraph (4) above shall apply to any engine family which meets all of the following additional requirements:

- a. Each exhaust emission durability data vehicle shall be driven, with all emission control systems installed and operating, for 100,000 miles or such lesser distance as the Executive Officer may agree to as meeting the objectives of this procedure. Compliance with the emission standards shall be established as follows:
  - (i) The linear regression line for all pollutants shall be established by use of all required data from tests of the durability vehicle at every 5,000 mile intervals from 5,000 to 100,000 miles. The requirements in subparagraph 86.078-28(a)(4)(i)(B)(durability vehicles must meet emissions standards) refer, for each pollutant, to the highest of either the federal 50,000 mile or California 100,000 mile emission standards.

(ii) Compliance with the hydrocarbon and carbon monoxide standards shall be determined as follows:

(a) For Option 1:

- (A) the interpolated 4,000 and 50,000 mile points on the linear regression line in (i) shall not exceed the appropriate hydrocarbon and carbon monoxide standards, except as in (B) below.
- (B) the linear regression line in (i) may exceed the standard provided that no data point exceeds the standard.
- (C) the hydrocarbon and carbon monoxide data from the 4,000 mile test point of the emission data vehicle shall be multiplied by the deterioration factor computed by dividing the interpolated 50,000 mile point by the interpolated 4,000 mile point. These values shall not exceed the appropriate hydrocarbon and carbon monoxide standards.

(b) For Option 2:

- (A) the interpolated 4,000 and 100,000 mile points on the linear regression line in (i) shall not exceed the appropriate hydrocarbon and carbon monoxide standards, except as in (B) below.
- (B) the linear regression line in (i) may exceed the standard provided that no data point exceeds the standard.
- (C) the hydrocarbon and carbon monoxide data from the 4,000 mile test point of the emission data vehicle shall be multiplied by the deterioration factor computed by dividing the interpolated 100,000 mile point by the interpolated 4,000 mile point. These values shall not exceed the appropriate 100,000 mile hydrocarbon and carbon monoxide standards.

(iii) Compliance with the oxides of nitrogen standard for Options 1 and 2 shall be determined as follows:

- (a) the interpolated 4,000 and 100,000 mile points on the linear regression line in (i) shall not exceed the appropriate 100,000 mile oxides of nitrogen standard except as in (b) below.
- (b) the linear regression line in (i) may exceed the standard provided that no data point exceeds the standard.
- (c) the oxides of nitrogen data from the 4,000 mile test point of the emission data vehicle shall be multiplied by the deterioration factor computed by dividing the interpolated 100,000 mile point by the interpolated 4,000 mile point. These values shall not exceed the appropriate 100,000 mile oxides of nitrogen standard.

All references in these test procedures to "useful life," 5 years, and 50,000 miles shall mean "total life," 10 years, and 100,000 miles, respectively, except in subparagraph (ii).

b. Only the following scheduled maintenance shall be allowed under subparagraph 86.078.25(a)(1)(i).

25(a)(1)(i)(A) Option 1. For 1981 and later model gasoline or diesel-fueled vehicles, maintenance shall be restricted to the inspection, replacement, cleaning, adjustment, and/or service of the following items at intervals no more frequent than indicated.

- (1) Drive belt tension on engine accessories (30,000 miles).
- (2) Valve lash (15,000 miles).
- (3) Spark plugs (30,000 miles).
- (4) Air filter (30,000 miles).
- (5) Exhaust gas sensor (30,000 miles); Provided that an audible and/or visible signal approved by the Executive Officer alerts the vehicle operator to the need for sensor maintenance.
- (6) Choke, cleaning or lubrication only (30,000 miles).
- (7) Idle speed (30,000 miles).
- (8) Fuel Filter (30,000 miles).
- (9) Injection timing (30,000 miles).

25(a)(1)(i)(B) Option 2. For 1981 and later model gasoline or diesel-fueled vehicles, maintenance shall be restricted to the inspection, replacement, cleaning, adjustment, and/or service of the following items at intervals no more frequent than indicated:

- (1) Drive belt tension on engine accessories (30,000 miles).
- (2) Valve lash (15,000 miles).
- (3) Spark plugs (30,000 miles).
- (4) Air filter (30,000 miles).
- (5) Fuel filter (30,000 miles).
- (6) Idle speed (30,000 miles).
- (7) Injection timing (30,000 miles).

c. In addition, adjustment of the engine speed (curb idle and fast idle), valve lash, and engine bolt torque may be performed once during the first 5,000 miles of scheduled driving, provided the manufacturer makes a satisfactory showing that the maintenance will be performed on vehicles in use.

d. The manufacturer agrees to apply to vehicles certified under this paragraph the provision of Section 43204 of the California Health and Safety Code for a period of ten years or 100,000 miles, whichever first occurs.

7. For all emission standards options, any vehicle which is subject to a standard set by federal law or regulation controlling emissions of particulate matter must conform to such standard.

# Memorandum

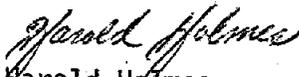
To : Huey D. Johnson  
Secretary  
Resources Agency

Date : February 3, 1982

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

From : 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 decision and response to environmental comments raised during the comment period.

  
Harold Holmes  
Board Secretary

attachment  
Resolution 81-68

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider Amendments to Title 13, California Administrative Code, Sections 1960.1 and 1960.15 and Related Test Procedures Regarding Oxides of Nitrogen Exhaust Emissions Standards for 1983 and Subsequent Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles

Agenda Item No.: 81-24-2

Public Hearing Date: November 19, 1981

Response Date: November 19, 1981

Issuing Authority : Air Resources Board

Comment: The staff report noted that there may be an adverse environmental impact from extending the NOx standards in question. No other comments were received identifying any significant environmental issues pertaining to this item.

Response: Staff noted and the Board found that increased NOx emissions are mitigated to the maximum extent feasible by associated reductions in particulate emissions and that other alternatives are not technologically or economically feasible at this time.

CERTIFIED:

Sally Rump, Secretary  
Board Secretary

Date:

12/31/81

State of California

AIR RESOURCES BOARD

Resolution 81-70

December 4, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 1049-86 entitled "Direct Measurement of Nitrous Acid, Nitrogen Dioxide and Formaldehyde in Auto Exhaust by Differential Optical Absorption Spectroscopy", has been submitted by the University of California, Riverside to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

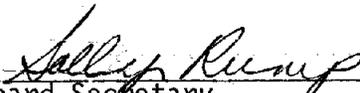
Proposal Number 1049-86 entitled "Direct Measurement of Nitrous Acid, Nitrogen Dioxide and Formaldehyde in Auto Exhaust by Differential Optical Absorption Spectroscopy" submitted by the University of California, Riverside for a total amount not to exceed \$97,944;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board under the powers and authority granted by the Health and Safety Code, Section 39705, hereby accepts the recommendation of the Research Screening Committee and approves the following proposal:

Proposal Number 1049-86 entitled "Direct Measurement of Nitrous Dioxide and Formaldehyde in Auto Exhaust by Differential Optical Absorption Spectroscopy" submitted by the University of California, Riverside, for a total amount not to exceed \$ 97,944;

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and shall execute all necessary documents and contracts for the research effort proposed in an amount not to exceed \$97,944.

I hereby certify that the above is a true and correct copy of Resolution 81-70 as adopted by the Air Resources Board.

  
Board Secretary

State of California  
AIR RESOURCES BOARD

Item No.: 81-25-4b.2  
Date: December 4, 1981

ITEM: Research Proposal No. 1049-86 entitled "Direct Measurement of Nitrous Acid, Nitrogen Dioxide and Formaldehyde in Auto Exhaust by Differential Optical Absorption Spectroscopy."

RECOMMENDATION: Adopt Resolution 81-70 approving Research Proposal 1049-86 for funding in an amount not to exceed \$97,944.

SUMMARY: Formaldehyde (HCHO) and nitrous acid (HONO) are key compounds in initiating and sustaining the formation of photochemical smog. Because of the importance of the role of these compounds in smog formation, it is important that reliable data for the emissions of these compounds be obtained. Measurements performed during the first year of this study indicate that there were elevated levels of nitrous acid in the vicinity of freeways during the pre-dawn hours. It was not clear, however, whether the nitrous acid was being produced by freeway traffic or was being transported from upwind. Tests performed at the Board's Haagen-Smit Laboratory have shown nitrous acid in diluted auto exhaust taken from the CVS sampling trains. Additional testing is needed to determine whether this nitrous acid is actually present in auto exhaust or is formed by heterogeneous reaction on the surfaces inside the sampling system.

The objectives of this project will be: 1) to measure the nitrous acid in diluted auto exhaust in a way that is free from possible "artifact HONO" caused by reaction on the walls of the sampling train, and 2) to determine levels of nitrous acid upwind and downwind of a freeway as a function of wind speed and direction, traffic density, temperature and relative humidity. This study will provide critically needed information on the mean source strength of HONO from freeway traffic.

State of California  
AIR RESOURCES BOARD

Resolution 81-71

December 4, 1981

Agenda Item No.: 81-25-3

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, Section 41954 of the Health and Safety Code has required the Board to adopt procedures for determining the compliance of systems designed for the control of gasoline vapor emissions during motor vehicle fueling operations ("Phase II vapor recovery systems") with performance standards which are reasonable and necessary to achieve or maintain any applicable ambient air quality standard;

WHEREAS, the Board has established certification procedures for Phase II vapor recovery systems in its "Certification Procedures for Gasoline Vapor Recovery Systems at Service Stations" (the "Certification Procedures"), incorporated by reference in Section 94001 of Title 17, California Administrative Code;

WHEREAS, the Board has established test procedures for determining compliance of Phase II vapor recovery systems with emission standards in its "Test Procedures for Determining the Efficiency of Gasoline Vapor Recovery Systems at Service Stations" (the "Test Procedures"), incorporated by reference in Section 94000 of Title 17, California Administrative Code;

WHEREAS, the Test Procedures set forth standards relating to excessive spillage of liquid gasoline during fueling operations;

WHEREAS, Assembly Bill 127 (Statutes 1981, Chapter 902) amended Section 41954(b) of the Health and Safety Code to require the Board, by December 28, 1981, to adopt additional performance standards which are reasonable and necessary to assure that Phase II vapor recovery systems do not cause excessive gasoline liquid spillage when used in a proper manner;

WHEREAS, Assembly Bill 127 also added Section 41960.2 to the Health and Safety Code, which provides in subsection (b) that the Board shall identify equipment defects in Phase II vapor recovery systems which substantially impair the effectiveness of the systems in reducing air contaminants;

WHEREAS, Section 41960.2(c) of the Health and Safety Code provides that when a local air pollution control district determines that a Phase II system component has a defect specified by the Board, it is required to mark the component "Out of Order", and use of the component is prohibited until appropriate remedial action is taken;

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 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; and

WHEREAS, the Board finds:

That the amendments to the Certification Procedures set forth in Attachment D provide for additional performance standards for Phase II vapor recovery systems which are reasonable and necessary to assure that such systems do not cause excessive gasoline liquid spillage when used in a proper manner;

That the amendments to the Certification Procedures set forth in Attachment D are also reasonably necessary to maintain continued availability of Phase II systems during evaluation pursuant to new standards, and to minimize costs of certification;

That the amendments to the Test Procedures set forth in Attachment B, which delete the previous spillage performance standards for Phase II systems, are necessary and appropriate in light of the more stringent standards contained in Attachment D;

That the regulation set forth in Attachment E identifies equipment defects in Phase II vapor recovery systems which substantially impair the effectiveness of such systems in reducing air contaminants, and that the adoption of said regulation is reasonably necessary to implement the requirements of AB 127; and

That the amendments set forth in Attachments A through E would have no substantial adverse environmental impact, and therefore no alternatives and/or mitigation measures are required.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby amends Section 94000 of Title 17, California Administrative Code, as set forth in Attachment A hereto.

BE IT FURTHER RESOLVED that the Board hereby adopts the "Test Procedures for Determining the Efficiency of Gasoline Vapor Recovery Systems at Service Stations," adopted on December 9, 1975, amended March 30, 1976, and last amended December 4, 1981, as set forth in Attachment B hereto.

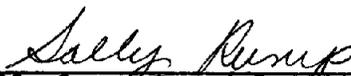
BE IT FURTHER RESOLVED that the Board hereby amends Section 94001 of Title 17, California Administrative Code, as set forth in Attachment C hereto.

BE IT FURTHER RESOLVED that the Board hereby adopts the "Certification Procedures for Gasoline Vapor Recovery Systems at Service Stations," adopted on March 30, 1976, amended on August 25, 1977, amended August 9, 1978, and last amended December 4, 1981, as set forth in Attachment D hereto.

BE IT FURTHER RESOLVED that the Board hereby adopts Section 94006 of Title 17, California Administrative Code, as set forth in Attachment E hereto.

BE IT FURTHER RESOLVED that the Board hereby adopts the opposing considerations and agency response summarized by staff, and directs the Executive Officer to prepare such summary in written form for inclusion in the Final Summary and Statement of Reasons for Proposed Rulemaking.

I certify that the above is  
a true and correct copy of  
Resolution 81-71, as adopted  
by the Air Resources Board.

  
\_\_\_\_\_  
Sally Rump, Board Secretary

Attachment A

Amend Section 94000, Subchapter 8, Chapter 1, Part III of Title 17, California Administrative Code as follows:

94000. Vapor Recovery Systems. The test procedures for determining compliance with emission standards for gasoline vapors displaced during the fueling of underground storage tanks and vehicles shall be as set forth in "Test Procedures for Determining the Efficiency of Gasoline Vapor Recovery Systems at Service Stations" adopted on December 9, 1975, ~~amended March 30, 1976, and amended August 9, 1978~~ as last amended December 4, 1981.

NOTE: Authority Cited: Sections 39600, 39601 and 41954, Health and Safety Code. Reference: Sections 41954, 41955, 41956.1, 41959 and 41961, Health and Safety Code.

Attachment B

State of California

AIR RESOURCES BOARD

Test Procedures for Determining the Efficiency of  
Gasoline Vapor Recovery Systems at Service Stations

Adopted: December 9, 1975

Amended: March 30, 1976

*Amended: December 4, 1981*

*Note: To assist the user, the most recent amendments to these procedures are set forth in italics. Revisions have been made to Section 1. Introduction only. The remaining sections of the test procedures are unchanged.*

State of California

AIR RESOURCES BOARD

Test Procedures for Determining the Efficiency of  
Gasoline Vapor Recovery Systems at Service Stations

1. Introduction

The following test procedures are for determining the efficiency of vapor recovery systems (Sections 2 and 3) for controlling gasoline vapors emitted during the filling of storage tanks and vehicle fuel tanks.

The test procedures for determining the efficiency of systems for controlling gasoline vapors displaced during filling of underground storage tanks requires determination of the weight of gasoline vapors vented through the storage tank vent and the volume of gasoline dispensed. The percentage effectiveness of control is then calculated from these values.

The test procedures for determining the efficiency of systems to control gasoline vapors displaced during vehicle fueling requires that the weight of vapors collected at the vehicle, corrected for vent losses, be compared to the potential mass emission calculated for that vehicle. A standard test sample of the vehicle population is to be tested and an average efficiency calculated.

The potential mass emissions are determined during the fueling of vehicles by measuring the mass of hydrocarbons collected from

vehicles from which no leak occurred. Potential emissions are expressed as a function of the vapor pressures of the dispensed fuel, the temperature of the dispensed fuel and the temperature of the gasoline in the test vehicle tank. This relationship is used as the baseline or reference from which the efficiency of a vehicle fueling vapor control system is evaluated.

The sample of vehicles to be used for testing control systems shall be comprised of vehicles representative of the on-the-road vehicle population in terms of vehicle miles travelled. ~~During the vehicle test, no more than ten spitbacks will be allowed per 100 vehicles tested, a spitback being a forceful ejection of liquid gasoline occurring during the actual fueling operation with the amount of liquid lost greater than a few milliliters. Any systems which the Executive Officer determines increases the quantity of liquid lost through spitback or spillage over that quantity typical of non-vapor recovery systems will be disapproved.~~

The test will be conducted during the normal operation of the service station. For vehicle fueling at a self-service station, the customers shall fuel the vehicles; at a full-service station, the service station attendant shall fuel the vehicles during the test period. No more than 30 days prior to the 100 vehicle efficiency test, the entire vapor recovery system is to be tested for leaks in accordance with the criteria specified in Title 19 Chapter 1 Subchapter 11.5 Section 1918.35 (j) and 1918.56 (j), in the State Fire Marshal's regulations, in addition the total ullage space shall not be more than

6,000 gallons. During the performance test, maintenance, adjustment, replacement of components or other such alteration of the control system is not allowed unless such action is specifically called for in the system's maintenance manual. Any such alteration shall be recorded on the day on which the alteration was performed. During the testing, the control system will be sealed in such a manner that unauthorized maintenance may be detected. Maintenance is to be performed only after notification of the person in charge of the testing except in case of an emergency. Unauthorized maintenance may be reason for immediate failure of the test.

For systems which are identical in design and include the same components as systems tested and found to comply with the test procedures, but differ, primarily in size, the owner or vendor may demonstrate compliance capability and obtain approval by submitting engineering and/or test data demonstrating the relationship between capacity and throughput of each component whose performance is a function of throughput. Examples of such components include: blowers, catalyst, carbon or other adsorbant, compressors, heat exchangers, combustors, piping, etc.

Attachment C

Amend Section 94001, Subchapter 8, Chapter 1, Part III of Title 17, California Administrative Code as follows:

94001. Certification of Vapor Recovery Systems. The certification of gasoline vapor recovery systems at service stations shall be accomplished in accordance with the Air Resources Board's "Certification Procedures for Gasoline Vapor Recovery Systems at Service Stations" adopted on March 30, 1976, ~~amended on August 25, 1977, and amended August 9, 1978~~ as last amended December 4, 1981.

NOTE: Authority Cited: Sections 39600, 39601 and 41954, Health and Safety Code. Reference: Sections 41954, 41955, 41956.1, 41959 and 41961, Health and Safety Code.

State of California

AIR RESOURCES BOARD

Certification Procedures for Gasoline  
Vapor Recovery Systems at Service Stations

I. General Applicability

These certification procedures are adopted pursuant to Section 41954 of the Health and Safety Code and are applicable to vapor recovery systems installed at gasoline service stations for controlling gasoline vapors emitted during the filling of storage tanks (Phase I) and vehicle fuel tanks (Phase II). Vapor recovery systems are complete systems and shall include all necessary piping, nozzles, couplers, processing units, underground tanks and any other equipment necessary for the control of gasoline vapors during fueling operations at service stations.

The certification procedures are not intended to be used to certify individual system components. For systems which are identical in design and include the same components as systems tested and certified, but differ, primarily in size, the manufacturer may demonstrate compliance capability and obtain certification by submitting engineering and test data demonstrating the relationship between capacity and throughput of each component whose performance is a function of throughput.

- G. System Time - Hours that the system needs to be capable of controlling vapor emissions. For the 90-day reliability test period, this would be 2160 hours (24 hours per day x 90 days).
- H. System Down-Time - The time (in hours) that the vapor recovery system is not operating as designed.
- I. *Spitback - A loss of more than one milliliter of liquid gasoline occurring during the dispensing of gasoline into the vehicle fuel tank.*
- J. *Spillage - A loss of more than one milliliter of liquid gasoline from the gasoline nozzle occurring as a result of preparing to fuel a vehicle or at the end of a fueling operation in returning the nozzle to the dispenser.*

### III. General Standards

- A. Certification of a system by the California Air Resources Board does not exempt the system from compliance with other applicable codes and regulations such as fire, weights and measures, and safety codes.
- B. Phase II systems must be capable of fueling, without the use of nozzle spout extenders, any motor vehicle that may be fueled at service stations not equipped with vapor recovery systems.

## II. Definitions

- A. Vapor-balance or displacement vapor recovery system - A gasoline vapor control system which uses direct displacement to force vapors into the underground tank (or bulk delivery tank) to prevent the emission of displaced vapors to the atmosphere during Phase I and/or Phase II operations.
- B. Vacuum-assisted or vacuum-assisted secondary system - A gasoline vapor control system, which employs a pump, blower, or other vacuum inducing devices, to collect and/or process vapors generated during vehicle fueling (Phase II) operations.
- C. Phase I - Control of vapors from underground tank fueling operations.
- D. Phase II - Control of vapors from vehicle fueling operations.
- E. Automatic Nozzle - ~~A nozzle which will dispense fuel without being hand-held.~~ *A hose nozzle valve provided with automatic closing features to safeguard its use.*
- F. On-Stream Efficiency Factor - That factor which indicates the fraction of time that the vapor recovery system is operating as the system was designed to operate.

$$\text{On-Stream Efficiency Factor} = \frac{t_s - t_d}{t_s}$$

Where  $t_s$  = System Time, Hours

$t_d$  = System Down-Time, Hours

#### IV. Performance Standards

A. The system shall complete an operational test of at least 90 days. During the test, replacement of components or alteration of the control system is not allowed, except that the Executive Officer may allow replacement or alteration of a component if the component has been damaged due to an accident or vandalism and if he/she determines that the replacement or alteration would not affect the operational test results. No maintenance or adjustment to the system will be allowed during the certification test unless such action is specifically called for in the system's maintenance manual. The control system will be sealed in such a manner that unauthorized maintenance or adjustment may be detected. Maintenance or adjustment is to be performed only after notification of the person in charge of the testing, except in case of an emergency. Unauthorized maintenance or adjustment may be reason for immediate failure of the test.

A system component submitted to the Executive Officer for evaluation subsequent to July 1, 1977, may be subjected to a shorter operational test, if the Executive Officer determines that the reliability of the component may be adequately demonstrated in a period shorter than 90 days.

- B. The system shall prevent emission to the atmosphere of at least 90 percent or that percentage by weight of the gasoline vapors displaced during the filling of the stationary storage tank as required by applicable air pollution control district rules and regulations. The percentages of control shall be determined as described in Section 2.0 of the "Test Procedures for Determining the Efficiency of Gasoline Vapor Recovery Systems at Service Stations" as incorporated in Title 17, subchapter-8, Section 94000, California Administrative Code.
- C. The system shall prevent emission to the atmosphere of an average of at least 90 percent or that percentage by weight of the gasoline vapors displaced during the filling of the vehicle fuel tanks as required by applicable air pollution control district rules and regulations. The specified percentage of control shall be determined by multiplying the on-stream efficiency factor (definition F, Section II) by the efficiency of the system as determined by testing in accordance with the procedures in Section 3.0 of the "Test Procedures for Determining the Efficiency of Gasoline Vapor Recovery Systems at Service Stations" as incorporated in Title 17, Chapter-1, subchapter-8, Section 94000 of the California Administrative Code.

- D. *No more than ten spitbacks or twenty instances of spillage per 100 vehicle fuelings shall occur during the testing in accordance with the procedures in Section 3.0 of the "Test Procedures for Determining the Efficiency of Gasoline Vapor Recovery Systems at Service Stations" as incorporated in Title 17, Section 94000 of the California Administrative Code. In addition, the Executive Officer shall certify only those systems which he or she determines: (i) will not increase the quantity of liquid lost through spitback or spillage over that quantity typical of non-vapor recovery systems, (ii) can be expected to perform with such durability and reliability that excessive spitbacks or spillage will not be caused by failure of critical system components, and (iii) incorporate provisions to prevent a buildup, during fueling of the vehicle, of pressure in the vehicle fuel tank sufficient to cause forceful ejection of gasoline. This determination shall be based on data obtained during the testing in accordance with Section 3 of the Test Procedures referred to above, failure mode testing, evaluation of reliability and durability of the system, and such other performance testing as the Executive Officer deems necessary.*
- E. -D- *Prior to Air Resources Board certification of the vapor recovery system, plans and specifications for the intended*

generic system shall be submitted to the State Fire Marshal's Office for review to determine whether the system creates a hazardous condition or is contrary to adopted fire safety regulations. Final determination by the State Fire Marshal may be contingent upon a review of each pilot installation of the proposed system. Compliance with the State Fire Marshal's requirements shall be a precondition to certification by the Air Resources Board.

F.-E. Prior to Air Resources Board certification, the system shall be submitted for type approval to the California Department of Food and Agriculture, Division of Measurement Standards and certified by such Division. Only those systems meeting the requirements of the California Business and Professions Code and the California Administrative Code will be issued certificates of approval by the Division of Measurement Standards; such certification shall be a precondition to certification by the Air Resources Board. Certification testing by Measurement Standards and the Air Resources Board may be conducted concurrently.

G.-F. Prior to certification of the system, the manufacturer of the system shall submit the system to the California Occupational Safety and Health Administration (Cal OSHA) for determining compliance with appropriate safety regulations.

This may be conducted concurrently with certification testing by the Air Resources Board. Compliance with Cal OSHA requirements shall be a precondition to certification by the Air Resources Board.

V. General Requirements Applicable to Certification of all Control Systems

A. An operating and required maintenance manual shall be submitted to the Executive Officer for each gasoline vapor control system submitted for certification. The operating manual shall, as a minimum, contain:

1. Identification of critical operating parameters affecting system operation, e.g., maximum dispensing rates; liquid to vapor flow rate ratios; pressures; etc. The operating range of these parameters associated with normal, in-compliance operation of the control system shall be identified. These operating data shall be determined and/or verified during the performance test of the system.
2. Identification of specific maintenance requirements and maintenance schedules necessary to ensure on-going operation in compliance with the applicable standards. Maintenance requirements shall be clearly identified as being capable of performance by the operator, or as requiring authorized service only. Operating manuals shall provide clear instruction on operator

maintenance and shall provide clear warnings against unauthorized service. Maintenance schedules shall, at a minimum, reflect the life of individual components such as regulators, compressors, nozzles, pressure vacuum valves, catalysts, combustor components, etc. Systems requiring maintenance which the Executive Officer finds unreasonable will be disapproved.

3. Identification of system components for each control system certified. Components shall, as applicable, be identified by brand name, part number, and/or performance characteristics. The identification shall be sufficiently clear so as to allow determination of comparability between tested and untested models, and/or to allow determination of the adequacy of replacement parts.

4. A warranty statement which complies with the requirements of Paragraph V. C. herein.

B. Indicating gauges, or alarms, or detection devices, or combination thereof, shall be included in each control system as required to enable monitoring of the critical system operation parameters. The gauges and alarms shall serve to alert and warn the gasoline service station owner or operator with an audible signal or warning light when the gasoline vapor control system is malfunctioning. Such gauges and alarms shall, as applicable,

include temperature and pressure indicators, pass/fail hydrocarbon detectors, etc. These shall indicate the performance of critical components such as compressors, carbon canisters, etc. Specific examples of necessary devices are: temperature indicators installed in control systems which utilize refrigeration as a control technique; pressure indicators installed in control systems which utilize compression as a control technique; hydrocarbon breakthrough detectors installed in control systems which utilize carbon adsorption or flexible bladders or seals as a control technique, and pressure differential indicators on vapor return lines to detect liquid blockage of the lines.

- C. The manufacturer of the vapor recovery system shall provide a three-year warranty for the system. An exception to the warranty may be for those components of the system which the maintenance manual identifies as having expected useful lives of less than three years; the warranty in these cases may specify the expected life.

The manufacturer of each vapor recovery system shall warrant in writing to the ultimate purchaser and each subsequent purchaser that such vapor recovery system is:

1. Designed, built, and equipped so as to conform at the time of sale with the applicable regulations; and
2. Free from defects in materials and workmanship which cause such vapor recovery system to fail to conform with applicable regulations for three years.

- D. The adequacy of methods of distribution, replacement parts program, the financial responsibility of the applicant, and other factors affecting the economic interests of the system purchaser shall be evaluated by the Executive Officer and determined by him or her to be satisfactory to protect the purchaser. A determination of financial responsibility by the Executive Officer shall not be deemed to be a guarantee or endorsement of the applicant.
- E. The Executive Officer shall certify only those systems which, on the basis of an engineering evaluation of the system design and component quality, can be expected to perform with reasonable durability and reliability over the three-year warranty period specified in Paragraph V.C. herein.
- F. *Whenever these Certification Procedures are amended to include additional performance standards or other requirements for certification of systems, any system which is certified as of the effective date of the additional standards or requirements shall remain certified for a period of six months from such date, or until the Executive Officer has determined whether the system conforms to the additional standards or requirements, whichever occurs first. However, if during this period the system manufacturer does not comply with such conditions as the Executive Officer deems necessary to*

*assure prompt evaluation of the system pursuant to the additional standards or requirements, the Executive Officer may revoke the prior certification.*

*In determining whether a previously certified system conforms with any additional performance standards or other requirements adopted subsequent to certification of the system, the Executive Officer may consider any appropriate data obtained in the previous certification testing or evaluation of the system in lieu of new testing or evaluation.*

#### VI. Application for Certification

- A. An application for certification of a vapor recovery system (Phase I or Phase II) may be made to the Air Resources Board by any manufacturer. Certification will be granted to any applicant meeting the applicable standards and criteria.
- B. The application shall be in writing, signed by an authorized representative of the manufacturer, and shall include the following:
  1. A detailed description of the configuration of the vapor recovery system including but not limited to the following:
    - a. The underground piping configuration and specifications (pipe sizes, lengths, fittings, material(s), etc.);
    - b. Gasoline dispensing nozzle to be used for Phase II;

- c. Engineering parameters for pumps and vapor processing units to be used as part of the vapor recovery system; and
  - d. Allowable pressure drops through the system.
2. Evidence demonstrating the vapor recovery reliability of the system or device for 90 days;
3. A description of tests performed to ascertain compliance with the general standards, and the results of such tests;
4. A statement of recommended maintenance procedures, equipment performance checkout procedures, and equipment necessary to assure that the vapor recovery system, in operation, conforms to the regulations, plus a description of the program for training personnel for such maintenance, and the proposed replacement parts program;
5. Six copies of the service and operating manuals that will be supplied to the purchaser;
6. A statement that a vapor recovery system, installed at an operating facility, will be available for certification testing no later than one month after submission of the application for certification. The facility submitted for certification testing shall have a minimum throughput of 100,000 gallons per month and shall include at least six nozzles of each type submitted for approval. There shall

not be more than two types of nozzles at any one test facility.

7. The retail price of the system and an estimate of the installation and yearly maintenance costs;
8. A copy of the warranty or warranties provided with the system;
9. If the application is for a system previously tested, but not certified, the application shall include identification of the system components which have been changed; including all new physical and operational characteristics; together with any new test results obtained by the applicant; and
10. Such other information as the Executive Officer may reasonably require.

#### VII. Fees and Testing

- A. A fee not to exceed the actual cost of certification will be charged by the Air Resources Board to each applicant submitting system(s) for certification. The applicant is required to demonstrate ability to pay the cost of testing prior to certification testing. This may take the form of posting a bond of not less than \$20,000. A resolution of certification of the system will not be issued until the test fee has been paid in full to the Air Resources Board.

- B. Testing may be conducted by an independent contractor under contract to the Air Resources Board. The contractor will be responsible solely to the Air Resources Board for the conduct of the certification test and the test results.

### VIII. Certification

- A. If the Executive Officer determines that a vapor recovery system conforms to all requirements set forth in paragraphs I through VII herein, he or she shall issue an order of certification. The order may prescribe the conditions for issuance of the certification including but not limited to: a minimum allowable on-stream factor, maximum allowable monthly throughput, installation constraints, operating parameters, compliance with safety codes and regulations, compliance with measurement standards regulations, and approval for use at self-service stations or at only attendant-serve stations.
- B. If after certification of a system the manufacturer wishes to modify the system, the proposed modifications must be submitted to the Executive Officer in a format specified by the Executive Officer for approval prior to their implementation. Such modifications may include substitution of components, elimination of components and modification of the system configuration. No person shall install or operate a system which is different in any significant respect from the system certified by the Air Resources Board.

- C. If after certification of a system, the Executive Officer finds the system to no longer meet the specified certification specifications, the Executive Officer may, as appropriate, revoke or modify his or her prior certification. Except in cases where the public safety requires immediate protection, the Executive Officer shall not revoke or modify a prior certification without the manufacturer's consent unless the Executive Officer conducts a public hearing. The manufacturer shall be notified of the public hearing in writing and the notification shall be given so as to be received by the manufacturer at least ten days before the hearing date.
- D. Any manufacturer of a system shall, as a condition of certification of the system by the Air Resources Board, agree that so long as only one such system is certified by the Air Resources Board, such manufacturer shall either: (1) agree to enter into such cross-licensing or other agreements as the Executive Officer determines are necessary to ensure adequate competition among manufacturers of such systems to protect the public interest; and (2) agree as a condition to such certification that if only such system from one manufacturer is made available for sale to the public, the Executive Officer shall, taking into consideration the cost of manufacturing the system and the manufacturer's suggested retail price, and in order to protect the public interest, determine the fair and reasonable retail price of such system, and may require, as a condition to continued certification of such system, that the retail price not exceed the retail price determined by the Executive Officer.

Attachment E

Add Section 94006, Subchapter 8, Chapter 1, Part III of Title 17, California Administrative Code as follows:

Section 94006. Defects Substantially Impairing the Effectiveness of Vapor Recovery Systems Used in Motor Vehicle Fueling Operations.

For the purposes of Section 41960.2 of the Health and Safety Code, the following constitute equipment defects in systems for the control of gasoline vapors resulting from motor vehicle fueling operations which substantially impair the effectiveness of the systems in reducing air contaminants:

(a) Absence or disconnection of any component required to be used in the Executive Order(s) that certified the system.

(b) A vapor hose which is crimped or flattened such that the vapor passage is blocked, or the pressure drop through the vapor hose exceeds by a factor of two or more the requirements in the system certified in the Executive Order(s) applicable to the system.

(c) A nozzle boot which is torn in one or more of the following manners:

1. Triangular-shaped or similar tear 1/2 inch or more to a side, or hole 1/2 inch or more in diameter or,

2. Slit 1 inch or more in length.

(d) Faceplate or flexible cone which is damaged in the following manner:

1. For balance nozzles and for nozzles for aspirator and eductor assist type systems, damage shall be such that the capability to achieve a seal with a fill pipe interface is affected for 1/4 of the circumference of the faceplate (accumulated).

2. For nozzles for vacuum assist-type systems, more than 1/4 of the flexible cone missing.

(e) Nozzle shutoff mechanisms which malfunction in any manner.

(f) Vapor return lines, including such components as swivels, anti-recirculation valves and underground piping, which malfunction or are blocked, or restricted such that pressure drop through the lines exceeds by a factor of two or more requirements specified in the Executive Order(s) that certified the system.

(g) Vapor processing unit which is inoperative.

(h) Vacuum producing device which is inoperative.

(i) Pressure/vacuum relief valves, vapor check valves, or dry breaks which are inoperative.

(j) Any equipment defect which is identified in an Executive Order certifying a system pursuant to the Certification Procedures incorporated in Section 94001 of Title 17, California Administrative Code, as substantially impairing the effectiveness of the system in reducing air contaminants.

All nozzles affected by the above defects are to be considered defective.

NOTE: Authority Cited: Sections 39600, 39601 and 41960.2, Health and Safety Code. Reference: Sections 41954 and 41960.2, Health and Safety Code.

# Memorandum

To : Huey D. Johnson  
Secretary  
Resources Agency

Date : December 30, 1981

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

From : 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 decision and response to environmental comments raised during the comment period.

*Sally Rump*

Sally Rump  
Board Secretary

attachments  
Resolution 81-71

RECEIVED BY  
Office of the Secretary

DEC 30 1981

Resources Agency of California

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider Amendments to Sections 94000 and 94001 and Adoption of Section 94006 in Title 17, California Administrative Code, and to Consider Amendments to Certification and Test Procedures for Vapor Recovery Systems.

Agenda Item No.: 81-25-3

Public Hearing Date: December 4, 1981

Response Date: December 4, 1981

Issuing Authority: Air Resources Board

Comment: No comments were received identifying any environmental issues pertaining to this item. The staff also identified no environmental issues.

Response: N/A

CERTIFIED:

*Sally Kemp*  
Board Secretary

Date:

12/24/81

RECEIVED BY  
Office of the Secretary

DEC 30 1981

Resources Agency of California

State of California  
AIR RESOURCES BOARD

Resolution 81-72

December 16, 1981

WHEREAS, Sally Rump has served as the Board Secretary since August 1979;

WHEREAS, she has cheerfully and efficiently, and with great fortitude, carried out the duties of her position;

WHEREAS, the Board finds that:

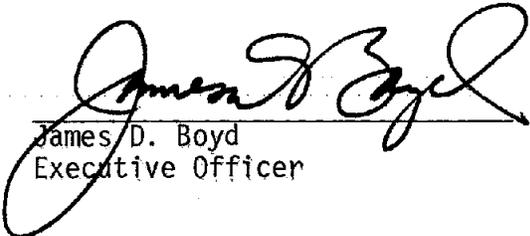
Even when going through musty rooms to carry out the monumental task of identifying, organizing, and setting up the Board records of past hearings, she followed through with tenacity, and her effort resulted in a most difficult job well done;

She performed the nearly impossible task of seeing that the Board was at the appointed time and place, even under the worst conditions such as airline strikes, fog, or out-of-the-way meetings, with ingenuity and imagination, calm and patience; and

WHEREAS, she has accepted a position with the Board's Regional Programs Division to serve as coordinator for the review of proposed and adopted district rules and regulations to be submitted to EPA as SIP revisions;

NOW, THEREFORE, BE IT RESOLVED that the Air Resources Board members and staff express their great appreciation for the excellent job she has done for the Air Resources Board and hereby express their best wishes for continued success in her new position with the Board.

I certify that the above is  
a true and correct copy of  
Resolution 81-72, as adopted  
by the Air Resources Board.

  
James D. Boyd  
Executive Officer