

AIR RESOURCES BOARD

2020 L STREET
P.O. BOX 2815
SACRAMENTO, CA 95812



**Notice of Decision and
Response to Significant Environmental Issues**

Item: PUBLIC HEARING TO CONSIDER THE ADOPTION OF AMENDMENTS TO REGULATIONS REGARDING EVAPORATIVE EMISSION STANDARDS AND TEST PROCEDURES APPLICABLE TO 1995 AND SUBSEQUENT MODEL YEAR PASSENGER CARS, LIGHT-DUTY TRUCKS, MEDIUM-DUTY VEHICLES, AND HEAVY-DUTY VEHICLES

Adopted by: Executive Order G-94-056
Signed: September 21, 1994

Approved by: Resolution 94-7

Agenda Item No.: 94-2-1


Public Hearing Date: February 10, 1994

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:


Artavia M. Edwards
Regulations Coordinator

Date:

27 Sep 94

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SEP 22 1994

RESOURCES AGENCY OF CALIFORNIA

State of California
AIR RESOURCES BOARD

Resolution 94-7

February 10, 1994

Agenda Item No.: 94-2-1

WHEREAS, sections 39600 and 39601 of the Health and Safety Code authorize the Air Resources Board (the Board) to adopt standards, rules and regulations and to do such acts as may be necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

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

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

WHEREAS, section 43018 of the Health and Safety Code directs the Board to endeavor to achieve the maximum degree of emission reduction from vehicular sources to accomplish the attainment of state ambient air quality standards by the earliest practicable date, and to take whatever actions are necessary, cost-effective and technologically feasible to achieve a reduction in emissions of reactive organic gases (hydrocarbons) of at least 55 percent from motor vehicles (based on emissions in 1987) by December 31, 2000;

WHEREAS, section 39667 of the Health and Safety Code directs the Board to consider the revision of emission standards for vehicular sources to achieve the maximum possible reduction in public exposure to toxic air contaminants and provides that standards for new motor vehicles shall be based on the most advanced technology feasible;

WHEREAS, following a hearing in November 1990, the Board adopted enhanced evaporative emissions regulatory requirements designed to ensure control of evaporative emissions under virtually all in-use conditions; these requirements are contained in Title 13, California Code of Regulations, section 1976 and the incorporated California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles;

WHEREAS, in March 1993, the United States Environmental Protection Agency (U.S. EPA) adopted enhanced evaporative emissions regulations similar to the aforementioned California regulations except for minor technical changes and the addition of a supplemental standard and test procedure;

WHEREAS, the U.S. EPA adopted the supplemental test procedure to ensure evaporative emissions are properly controlled during short trips;

WHEREAS, the staff has proposed the incorporation of the supplemental test as part of the California evaporative emissions certification requirements, starting in the 1996 model year;

WHEREAS, the staff has initially proposed the following two-day diurnal plus hot soak emission standards for the supplemental test:

- (1) 2.5 grams/test for: Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles (6,001 - 8,500 lbs. GVWR)
- (2) 3.5 grams/test for: Medium-Duty Vehicles (8,501 - 14,000 lbs. GVWR)
- (3) 4.5 grams/test for: Heavy-Duty Vehicles (over 14,000 lbs. GVWR)

WHEREAS, the medium-duty vehicle class from 8,501 to 14,000 pounds gross vehicle weight is the only vehicle class that is not currently required to comply with the enhanced test procedures;

WHEREAS, the staff has proposed that the complete medium-duty vehicles from 8,501 to 14,000 pounds gross vehicle weight comply with the proposed enhanced evaporative emission test procedures beginning in the 1996 model year;

WHEREAS, the staff has proposed that the complete medium-duty vehicles from 8,501 to 14,000 pounds gross vehicle weight comply with a slightly relaxed three-day diurnal plus hot soak standard of 3.0 grams per test, because of the limited lead time and to be consistent with the federal requirements;

WHEREAS, the staff has proposed technical modifications to the California enhanced evaporative emissions test procedures, applicable for the 1996 and subsequent model years, to more closely align them with the federal test procedures;

WHEREAS, the staff has also proposed technical changes to the enhanced evaporative emission test procedures, applicable for the 1995 and subsequent model years, to allow manufacturers to conduct tests more efficiently;

WHEREAS, the staff's initial proposal would be effected by amendments to Title 13, California Code of Regulations, section 1976 as set forth in Attachment A hereto; and amendments to the California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles, as set forth in Attachment B hereto;

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

WHEREAS, the Board has considered the impact of the proposed regulatory action on the economy of the state;

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

WHEREAS, the Board finds that:

The proposed supplemental standards and test procedure are technologically feasible and are necessary to ensure that in those incidences of short vehicle operation, the vehicle's evaporative emissions control system will function properly to control evaporative emissions;

Aligning the California evaporative emission test procedures more closely with the federal test procedures will provide industry with more consistent procedures and will facilitate evaporative emissions tests which fulfill both California and federal requirements;

It is technologically feasible for complete medium-duty vehicles from 8,501 to 14,000 pounds gross vehicle weight to comply with the enhanced test procedures and standards as approved herein;

The addition of the supplemental test, the amendments to more closely align with the federal procedures, and the requirement for complete medium-duty vehicles from 8,501 to 14,000 pounds gross vehicle weight to comply with the enhanced test procedures are technologically feasible beginning in the 1996 model year;

The technical amendments to the test procedures approved herein are necessary and appropriate to add specificity, enhance clarity, and facilitate implementation of the test procedure requirements;

The modification approved herein to revise the three-day diurnal plus hot soak standard from 2.0 to 2.5 grams per test for a special class of medium-duty vehicles from 6,001 to 8,500 pounds gross vehicle weight with fuel tanks of at least 30 gallons is necessary and appropriate to assure the standards are technologically

feasible for such vehicles, and is consistent with the federal standards;

The modification approved herein to revise the proposed supplemental test standard from 2.5 to 3.0 grams per test for medium-duty vehicles from 6,001 to 8,500 pounds gross vehicle weight with fuel tanks of at least 30 gallons is necessary and appropriate to assure the standards are technologically feasible for such vehicles, and is consistent with the federal standards;

The amendments approved herein represent a cost-effective means of reducing emissions of hydrocarbons;

The regulations establishing the California evaporative emissions standards and test procedures as approved herein differ from comparable regulations in the Code of Federal Regulations, and the differing state regulations are authorized by sections 43013, 43018, 43101 and 43104 of the Health and Safety Code; and

WHEREAS, the Board further finds that:

The modification approved herein which revises the three-day diurnal plus hot soak standard from 2.0 to 2.5 grams per test for medium-duty vehicles from 6,001 to 8,500 pounds gross vehicle weight with fuel tanks of at least 30 gallons will result in an increase in statewide volatile organic compound (VOC) emissions of approximately 1 ton per day in the year 2010;

The VOC emissions increase identified above will be mitigated by the decrease of approximately 4 tons per day in year 2010 statewide VOC emissions which will result from the amendments approved herein making complete medium-duty vehicles from 8,501 to 14,000 pounds gross vehicle weight subject to the enhanced test procedures;

In all other respects, the amendments approved herein will not have any significant adverse effect on the environment.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby approves the amendments to section 1976, Title 13, California Code of Regulations, and the document incorporated therein, as set forth in Attachments A and B hereto, with the modifications described in Attachment C hereto.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to incorporate into the approved amendments the modifications described in

Attachment C hereto with such other conforming modifications as may be appropriate, and to adopt the amendments approved herein, after making the modified regulatory language available for public comment for a period of 15 days, provided that the Executive Officer shall consider such written comments regarding the modifications as may be submitted during this period, shall make modifications after comments have been received, and shall present the regulations to the Board for further consideration if he determines that this is warranted.

BE IT FURTHER RESOLVED that the Board hereby determines that the regulatory amendments approved herein will not cause California motor vehicle emission standards, in the aggregate, to be less protective of public health and welfare than applicable federal standards.

BE IT FURTHER RESOLVED that the Board hereby finds that separate California emission standards and test procedures are necessary to meet compelling and extraordinary conditions.

BE IT FURTHER RESOLVED that the Board finds that the California motor vehicle emission standards and test procedures as amended herein will not cause the California requirements to be inconsistent with section 202(a) of the Clean Air Act and raise no new issues affecting previous waiver determinations of the Administrator of the Environmental Protection Agency pursuant to section 209(b) of the Clean Air Act.

BE IT FURTHER RESOLVED that the Executive Officer shall, upon adoption, forward the regulations to the Environmental Protection Agency with a request for a waiver or confirmation that the regulations are within the scope of an existing waiver of federal preemption pursuant to section 209(b) of the Clean Air Act, as appropriate.

I hereby certify that the above is a true and correct copy of Resolution 94-7, as adopted by the Air Resources Board.

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Office of the Secretary

NOV 22 1994

RESOURCES AGENCY OF CALIFORNIA

Pat Hutchens
Pat Hutchens, Board Secretary

State of California
AIR RESOURCES BOARD

Executive Order G-94-56

WHEREAS, on February 10, 1994, the Air Resources Board (ARB) conducted a public hearing to consider the adoption of amendments to regulations regarding evaporative emission standards and test procedures applicable to 1995 and subsequent model-year passenger cars, light-duty trucks, medium-duty vehicles and heavy-duty vehicles;

WHEREAS, following the public hearing on February 10, 1994, the Board adopted Resolution 94-7, in which the Board approved the amendments to section 1976 of Title 13, California Code of Regulations, and the incorporated California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles, as set forth in Attachments A and B thereto, with the modifications set forth in Attachment C thereto;

WHEREAS, Resolution 94-7 directed the Executive Officer to adopt the regulations and incorporated document as set forth in Attachments A and B thereto with the modifications set forth in Attachment C thereto and with such other conforming modifications as may be appropriate, after making the modified regulatory language available to the public for a supplemental written comment period of 15 days, provided that the Executive Officer shall consider such written comments regarding the modifications as may be submitted during this period, shall make modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if he determines that this is warranted;

WHEREAS, the text of section 1976, Title 13, California Code of Regulations, and the incorporated California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles, was made available to the public for a 15-day comment period, in accordance with the provisions of Title 1, CCR, section 44, with the Board-approved and conforming modifications to the originally proposed text clearly indicated;

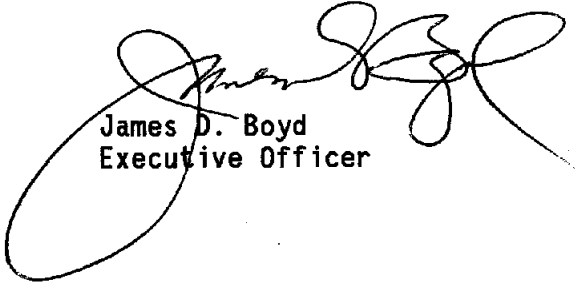
WHEREAS, one written comment was received during the 15-day comment period, and that comment has been considered by the Executive Officer and does not require substantive modification nor reconsideration by the Board of the approved regulations, and the incorporated California test procedures; and

WHEREAS, Attachments A and B hereto contain the text of section 1976, Title 13, California Code of Regulations, and the incorporated California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles, as made available for the 15-day comment period, with additional nonsubstantial modifications made to the incorporated document in response to the comment received during the 15-day comment period.

NOW, THEREFORE, IT IS ORDERED that the recitals and findings contained in Resolution 94-7 are incorporated herein.

IT IS FURTHER ORDERED, in accordance with Resolution 94-7 and Health and Safety Code sections 39515 and 39516, that the amendments to section 1976, Title 13, California Code of Regulations, and the incorporated California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles, are hereby adopted as set forth in Attachments A and B hereto.

Executed this 21st day of September, 1994, at Sacramento, California.



James D. Boyd
Executive Officer

Attachments

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RESOURCES AGENCY OF CALIFORNIA

Resolution 94-7

February 10, 1994

Identification of Attachments to the Resolution

Attachment A: Amendments to Title 13, California Code of Regulations, section 1976, as appended to the Staff Report released December 23, 1993.

Attachment B: Amendments to the California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles, as made available by the ARB's Mobile Source Division December 23, 1993.

Attachment C: Staff's Suggested Changes to the Original Proposal, distributed at the February 10, 1994 hearing.

ATTACHMENT C

SUGGESTED MODIFICATIONS TO TITLE 13

Except as otherwise indicated, the text of the originally proposed amendments is shown below in underline to indicate additions and ~~strikeout~~ to show deletions. The modifications now proposed by staff are shown in *bold italics* to show additions and ~~strikeout~~ to show deletions.

1976. Standards and Test Procedures for Motor Vehicle Fuel Evaporative Emissions.

(a) Fuel evaporative emissions from 1970 through 1977 model passenger cars and light-duty trucks are set forth in Title 40, Code of Federal Regulations, Part 86, Subparts A and C, as it existed on June 20, 1973. These standards are enforced in California pursuant to section 43008 of the Health and Safety Code.

(b)(1) Evaporative emissions for 1978 and subsequent model gasoline-fueled, 1983 and subsequent model liquefied petroleum gas-fueled, and 1993 and subsequent model alcohol-fueled motor vehicles and hybrid electric vehicles subject to exhaust emission standards under this article, except petroleum-fueled diesel vehicles, *compressed natural gas-fueled vehicles*, hybrid electric vehicles that have sealed fuel systems which can be demonstrated to have no evaporative emissions, and motorcycles, shall not exceed the following standards.

(A) For vehicles identified below, tested in accordance with the test procedure based on the Sealed Housing for Evaporative Determination as set forth in Title 40, Code of Federal Regulations, sections 86.130-78 through 86.143-90 as they existed July 1, 1989, the evaporative emission standards are:

Hydrocarbons
of OMHGE (1)

<u>Hot Soak + Diurnal</u> (grams per test)	<u>Running Loss</u> (grams/mile)
<u>50K Useful Life (2)</u>	<u>Useful Life(2)</u>

<u>Vehicle Type</u>	<u>Model Year</u>	<u>Hydrocarbons (1)</u> <u>Diurnal + Hot Soak (grams/test)</u> <u>50K miles</u>
Passenger cars	1978 and 1979	6.0
Light-duty trucks		<u>6.0</u>
Medium-duty vehicles		<u>6.0</u>
Heavy-duty vehicles		<u>6.0</u>
Passenger cars	1980 - 1994 (2)	2.0
Light-duty trucks		<u>2.0</u>
Medium-duty vehicles		<u>2.0</u>
Heavy-duty vehicles		<u>2.0</u>

(1) Organic Material Hydrocarbon Equivalent, for alcohol-fueled vehicles.

(2) Other than hybrid electric vehicles.

(B) For the vehicles identified below, tested in accordance with the test procedure which includes the running loss test, the hot soak test, and the 72 hour diurnal test, the evaporative emission standards are:

<u>Vehicle Type</u>	<u>Model Year</u>	<u>Hydrocarbons (1)</u> <u>Three-Day Diurnal +</u> <u>Hot Soak (grams/test)</u> <u>Useful Life(2)</u>	<u>Running loss</u> (grams/mile) <u>Useful Life(2)</u>
Passenger cars	1995 and	2.0	0.05
Light-duty trucks	subsequent (3)	<u>2.0</u>	<u>0.05</u>
Medium-duty vehicles (6,001-8,500 lbs. GVWR)			
with fuel tanks < 30 gallons		2.0	0.05
with fuel tanks ≥ 30 gallons		2.5	0.05
(8,501-14,000 lbs. GVWR) (4)		<u>3.0</u>	<u>0.05</u>
Heavy-duty vehicles (over 14,000 lbs. GVWR)		<u>2.0</u>	<u>0.05</u>
Hybrid Electric Passenger Cars	1993 and subsequent (5)	2.0	0.05
Hybrid Electric Light-Duty Trucks		<u>2.0</u>	<u>0.05</u>
Hybrid Electric Medium-Duty Vehicles		<u>2.0</u>	<u>0.05</u>

- (1) Organic Material Hydrocarbon Equivalent, Total Hydrocarbon plus the Hydrocarbon component of Alcohol Organic Material Hydrocarbon Equivalent for alcohol-fueled vehicles.
- (2) For purposes of this section, "useful life" shall have the same meaning as provided in section 2112, Title 13, California Code of Regulations. Approval of vehicles which are not exhaust emission tested using a chassis dynamometer pursuant to section 1960.1, Title 13, California Code of Regulations shall be based on an engineering evaluation of the system and data submitted by the applicant. The useful life of incomplete medium-duty vehicles certified to the "California Exhaust Emission Standards and Test Procedures for 1987 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles" shall be defined by the useful life of the medium-duty vehicle engine used in such vehicles.
- (3) The running loss and useful life three-day diurnal plus hot soak evaporative emission standards (hereinafter "running loss and useful life standards") shall be phased-in beginning with the 1995 model year. Each manufacturer, except small volume manufacturers, shall certify the specified percent (a) of passenger cars and (b) of light-duty trucks, medium-duty vehicles and heavy-duty vehicles to the running loss and useful life evaporative emission standards according to the following schedule:

<u>Model Year</u>	<u>Number Minimum Percentage of Vehicles Certified to Running Loss and Useful Life Standards*</u>
1995	10 percent
1996	30 percent
1997	50 percent

* The number minimum percentage of motor vehicles of each vehicle type required to be certified to the running loss and useful life standards shall be based on determined by applying the specified percentage to the manufacturer's projected California model-year sales (a) of passenger cars and (b) of light-duty trucks, medium-duty vehicles and heavy-duty vehicles. Optionally, the percentage of motor vehicles can also be based on the manufacturer's projected California model-year sales (a) of passenger cars and light-duty trucks and (b) of medium-duty vehicles and heavy-duty vehicles.

Beginning with the 1998 model year, all motor vehicles subject to the running loss and useful life standards, including those produced by small volume manufacturers, shall be certified to the specified standards.

All 1995 through 1997 model year motor vehicles which are not subject to running loss and useful life standards pursuant to the phase-in schedule shall comply with the 50,000-mile standards in effect for 1980 through 1994 model-year vehicles.

- (4) For the 1995 model year only, the evaporative emission standards for complete vehicles in this weight range shall be 2.0 grams/test and compliance with the evaporative emission standards for complete vehicles in this weight range shall be based on the Sealed Housing for Evaporative Determination (SHED) conducted in accordance with the procedures set forth in Title 40, Code of Federal Regulations, sections 86.130-78 through 86.143-90 as they existed July 1, 1989.
- (5) The running loss and useful life diurnal plus hot soak evaporative emission standards (hereinafter "running loss and useful life standards") for all hybrid electric vehicles shall be effective in the 1993 and subsequent model years.

(C) For vehicles identified below, tested in accordance with the test procedure which includes the hot soak test and the 48 hour diurnal test, the evaporative emission standards are:

<u>Vehicle Type</u>	<u>Model Year</u>	<u>Hydrocarbon (1) Two-Day Diurnal + Hot Soak (grams/test) Useful Life(2)</u>
<u>Passenger cars</u>	<u>1996 and</u>	<u>2.5</u>
<u>Light-duty trucks</u>	<u>subsequent (3)</u>	<u>2.5</u>
<u>Medium-duty vehicles</u> <u>(6,000 - 8,500 lbs. GVWR)</u> <u>with fuel tanks < 30 gallons</u>		<u>2.5</u>
<u>with fuel tanks ≥ 30 gallons</u> <u>(8,501 - 14,000 lbs. GVWR)</u>		<u>3.0</u>
<u>Heavy-duty vehicles</u> <u>(over 14,000 lbs. GVWR)</u>		<u>4.5</u>
<u>Hybrid electric passenger cars</u>	<u>1996 and</u>	<u>2.5</u>
<u>Hybrid electric light-duty trucks</u>	<u>subsequent (3)</u>	<u>2.5</u>
<u>Hybrid electric medium-duty vehicles</u>		<u>2.5</u>

(1) Total hydrocarbon plus the hydrocarbon component of alcohol Organic Material Hydrocarbon Equivalent for alcohol-fueled vehicles.

(2) For purposes of this paragraph, "useful life" shall have the same meaning as provided in section 2112, Title 13, California Code of Regulations. Approval of vehicles which are not exhaust emission tested using a chassis dynamometer pursuant to section 1960.1, Title 13, California Code of Regulations shall be based on an engineering evaluation of the system and data submitted by the applicant. The useful life of incomplete medium-duty vehicles

certified to the "California Exhaust Emission Standards and Test Procedures for 1987 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles" shall be defined by the useful life of the medium-duty vehicle engine used in such vehicles.

(3) The two-day diurnal plus hot soak evaporative emission standards (hereinafter "supplemental standards") shall be phased-in beginning with the 1996 model year. Those vehicles certified under the running loss and useful life standards for the 1996 and subsequent model years must also be certified under the supplemental standards.

(2) Evaporative emissions for gasoline-fueled motorcycles subject to exhaust emission standards under this article shall not exceed:

<i>Motorcycle Class</i>	<i>Model Year</i>	<i>Hydrocarbons (grams per test)</i>
Class I and II (50-279cc)	1983 and 1984	6.0
	1985 and subsequent	2.0
Class III (280cc and larger)	1984 and 1985	6.0
	1986 and subsequent	2.0
Class III (280cc and larger) (Optional Standard for Small- Volume <i>Motorcycle</i> Manufacturers)	1986-1988	6.0

(c) The procedure for determining compliance with the standards in subsection (b) above is set forth in "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles," adopted by the state board on April 16, 1975, as last amended November 20, 1991, effective January 16, 1992.

(d) Motorcycle engine families certified to 0.2 grams per test or more below the applicable standards shall be exempted from the state board's "Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks" pursuant to section 2290, Title 13, California Code of Regulations.

(e) Small volume motorcycle manufacturers electing to certify 1986, 1987, or 1988 model-year Class III motorcycles in accordance with the optional 6.0 gram per test evaporative emission standard shall submit, with the certification application, a list of the motorcycle models for which it intends to seek California certification and estimate sales data for such models. In addition, each such manufacturer shall, on or before July 1 of each year in which it certifies motorcycles under the optional standard, submit a report describing its efforts and progress toward meeting the more stringent evaporative emission standards. The report shall also contain a description of the manufacturer's current hydrocarbon evaporative emission control development status, along with supporting test data, and shall summarize future planned development work.

SUGGESTED MODIFICATIONS TO THE
CALIFORNIA EVAPORATIVE EMISSION STANDARDS AND
TEST PROCEDURES FOR 1978 AND SUBSEQUENT MODEL MOTOR VEHICLES

Except as otherwise indicated, the text of the originally proposed amendments is shown below in underline to indicate additions and ~~strikeout~~ to show deletions. The modifications now proposed by staff are shown in *bold italics* to show additions and ~~slashes~~ to show deletions.

1. Include a two-day diurnal plus hot soak standard and a three-day diurnal plus hot soak standard for medium-duty vehicles from 6,001 to 8,500 lbs. GVWR with fuel tanks of at least 30 gallons. Sections affected: paragraph 1.a.ii. and paragraph 1.a.iii.

ii . . .

<u>Class of Vehicle</u>	<u>Model Year</u>	<u>Hydrocarbons (1)</u>	
		<u>Three-Day Diurnal + Hot Soak (grams/test) Useful Life(2)</u>	<u>Running Loss (grams/mile) Useful life(2)</u>
Passenger Cars	1995 and	2.0	0.05
Light-Duty Trucks	subsequent (3)	2.0	0.05
Medium-Duty Vehicles (6,001 - 8,500 lbs. GVWR)			
<i>with fuel tanks < 30 gallons</i>		2.0	0.05
<i>with fuel tanks ≥ 30 gallons</i>		2.5	0.05
(8,501 - 14,000 lbs. GVWR) (4)		2.0	0.05
Heavy-Duty Vehicles (over 14,000 lbs. GVWR)		2.0	0.05

iii . . .

<u>Class of Vehicle</u>	<u>Model Year</u>	<u>Hydrocarbons (1)</u>	
		<u>Two-Day Diurnal + Hot Soak (grams/test) Useful Life(2)</u>	
Passenger Cars	1996 and	2.5	
Light-Duty Trucks	subsequent (3)	2.5	
Medium-Duty Vehicles (6,001 - 8,500 lbs. GVWR)			
<i>with fuel tanks < 30 gallons</i>		2.5	
<i>with fuel tanks ≥ 30 gallons</i>		3.0	
(8,501 - 14,000 lbs. GVWR)		3.5	
Heavy-Duty Vehicles (over 14,000 lbs. GVWR)		4.5	

2. Clarify the three-day diurnal plus hot soak standard for incomplete medium-duty vehicles from 8,501 to 14,000 pounds gross vehicle rate that are required to comply with the enhanced test procedures. Section affected: paragraph 1.a.ii.(4)

(4) For the 1995 model year only, the evaporative emission standard for complete vehicles in this weight range shall be 2.0 grams/test and compliance with the evaporative emission standards for complete vehicles in this weight range shall be based on the Sealed Housing for Evaporative Determination (SHED) conducted in accordance with the procedures set forth in Title 40, Code of Federal Regulations, sections 86.130-78 through 86.143-90 as they existed July 1, 1989. **For 1995 and subsequent model years, the evaporative emission diurnal plus hot soak standard for incomplete vehicles in this weight range shall be 2.0 grams/test.**

3. Clarify the statement which exempts motor vehicles from the standards and test procedures to include compressed natural-gas vehicles. This exemption for compressed natural-gas vehicles was inadvertently left out of the test procedures. Section affected: paragraph 1.

1 . . . These standards and test procedures do not apply to motor vehicles which are exempt from exhaust emission certification, of petroleum-fueled diesel vehicles, **compressed natural gas-fueled vehicles**, or hybrid electric vehicles that have sealed fuel systems which can be demonstrated to have no evaporative emissions.

4. Modify the original proposed language to require that standards for alcohol-fueled vehicles be expressed as OMHCE. Sections affected: paragraph a.ii.(1) and paragraph a.iii(2)

(1) . . . The applicable evaporative emission standards for alcohol-fueled vehicles are expressed as organic material hydrocarbon equivalent (OMHCE) in terms of total hydrocarbon plus the hydrocarbon component of alcohol as OMHCE. These evaporative standards are effective in the 1993 model year.

(1) . . . The applicable evaporative emission standards for alcohol vehicles are expressed in terms of total hydrocarbon plus the hydrocarbon component of alcohol as OMHCE.

5. Include a definition for small volume manufacturers. Section affected: paragraph 2.

2 . . . The definitions in section 1900, Title 13, California Code of Regulations, and in the applicable model-year California exhaust emission standards and test procedures, are hereby incorporated into this test procedure by reference. **For the purposes of this test procedure and section 1976 of Title 13, California Code of Regulations,**

"small volume manufacturer" shall mean any vehicle manufacturer with California sales less than or equal to 3000 new vehicles per model year based on the average number of vehicles sold by the manufacturer in the previous three consecutive model years.

6. Allow manufacturers to comply with the requirement to conduct evaporative emission testing of the exhaust durability data vehicle (paragraph 4.c.i. or 4.c.ii.) by conducting the evaporative durability requirements of paragraph 4.c.iii. on an on-road vehicle simulating the complete useful life and by demonstrating compliance with the evaporative emission standards with the exhaust durability data vehicle at the end of the useful life. Section affected: paragraph 4.c.

c . . . For 1996 and subsequent model motor vehicles subject to the running loss and useful life standards, the requirements of paragraph 4.c.i. or paragraph 4.c.ii. may be met by an emissions test sequence demonstrating compliance with the applicable exhaust and evaporative standards at the end of the useful life if the paragraph 4.c.iii. procedure includes on-road, useful life deterioration on the evaporative test vehicle. The test vehicle must be deteriorated based on typical customer use through the applicable useful life. For the 1995 model year only, a manufacturer may use an engineering evaluation to satisfy the requirement for the exhaust durability data vehicle to comply with the applicable evaporative standards.

7. Allow the manufacturers to use federal procedures for the following requirements: (1) the carry-across of three-day diurnal plus hot soak deterioration factors (DFs) to the two-day DFs; (2) the loading procedures for evaporative systems with multiple canisters, and (3) the correction factors for the running loss profile. Section affected: paragraph 4.k. (new paragraph)

k. Upon prior written approval of the Executive Officer, a manufacturer may use the comparable federal requirements in Title 40, CFR, Part 86 in lieu of the carry-across specifications of paragraph 4.c. of these test procedures, the multiple canister loading requirements of paragraph 4.g.iii.D., and the running loss road profile correction factors of paragraph 4.f.. The Executive Officer shall approve a manufacturer's request if the manufacturer demonstrates to the satisfaction of the Executive Officer that the alternative methodology will not adversely affect in-use evaporative emissions.

8. Include a calibration procedure for the hot soak enclosure. Section affected: paragraph 4.e.(e)(2)(v) (new paragraph)

(v) Hot soak enclosure. The hot soak enclosure calibration consists of the following parts: initial and periodic determination of enclosure background emissions, initial determination of enclosure volume, and periodic hydrocarbon and alcohol retention check and

calibration. The hot soak enclosure calibration shall be conducted according to the method specified in section (e)(1) with a retention check of 4 hours at 105°F or the method specified in section (e)(2)(iv).

9. Include a statement that methanol measurements will not be required during the emissions test sequence if methanol-fueled vehicles will not be tested. Section affected: paragraph 4.g.i.

i. . . For 1996 and subsequent model motor vehicles, the test sequence shown in Figure 4 (Figure 5 for hybrid electric vehicles) describes the steps encountered as the vehicle undergoes the three-day diurnal sequence and the supplemental two-day diurnal sequence to determine conformity with the standards set forth. Methanol measurements may be omitted when methanol-fueled vehicles will not be tested in the evaporative enclosure.

10. Require the fuel tank vapor temperature to match the on-road vapor profile throughout the entire running loss test. The vapor temperature must be no more than $\pm 5^{\circ}\text{F}$ of the corresponding on-road temperatures. Sections affected: paragraph 4.g.viii.A.VIII and paragraph 4.g.viii.B.IV.

VIII . . . Throughout the running loss test, the fuel tank vapor temperature shall agree with the corresponding vapor temperature with a tolerance of $\pm 5^{\circ}\text{F}$. A running loss test with a fuel tank vapor temperature that exceeded the corresponding vapor temperature profile by more than the $+ 5^{\circ}\text{F}$ tolerance may be considered valid if test results comply with the applicable running loss evaporative emission standards. The fuel tank vapor temperature during the final 120 second idle period shall agree with the corresponding vapor temperature from the on-road profile within $\pm 3.0^{\circ}\text{F}$.

IV . . . Throughout the running loss test, the fuel tank vapor temperature shall agree with the corresponding vapor temperature with a tolerance of $\pm 5^{\circ}\text{F}$. A running loss test with a fuel tank vapor temperature that exceeded the corresponding vapor temperature profile by more than the $+ 5^{\circ}\text{F}$ tolerance may be considered valid if test results comply with the applicable running loss evaporative emission standards. The fuel tank vapor temperature during the final 120 second idle period shall agree with the corresponding vapor temperature from the on-road profile within $\pm 3.0^{\circ}\text{F}$.

11. Allow transitory pressure events that exceed the 10 inches of water requirements during the running loss test if they do not cause the

pressure to exceed 10 inches of water during in-use. Section affected: paragraph 4.g.viii.A.X. and paragraph 4.g.viii.B.V.

X. Tank pressure shall not exceed 10 inches of water at any time 30 seconds after the start of the engine until the end of engine operation during the running loss test unless a pressurized system is used and the manufacturer demonstrates in a separate test that vapor would not be vented to the atmosphere if the fuel cap was removed at the end of the test. *Transitory incidents of the pressure exceeding 10 inches of water shall be acceptable during the running loss test if the manufacturer can demonstrate that the tank pressure does not exceed 10 inches of water during in-use operation.*

V. Tank pressure shall not exceed 10 inches of water 30 seconds after the start of the engine until the end of engine operation during the running loss test unless a pressurized system is used and the manufacturer demonstrates in a separate test that vapor would not be vented to the atmosphere if the fuel cap was removed at the end of the test. *Transitory incidents of the pressure exceeding 10 inches of water shall be acceptable during the running loss test if the manufacturer can demonstrate that the tank pressure does not exceed 10 inches of water during in-use operation.*

12. Allow up to six hours to stabilize the fuel liquid and vapor temperatures to 105°F before the running loss test. Also specify the maximum rate of heating the fuel tank. Section affected: paragraph 4.g.vii.

vii. Immediately after the hot transient exhaust emission test, the vehicle shall be soaked in a temperature controlled area ~~for a~~ *between one hour to maximum of one hour four hours six hours,* until the fuel and vapor temperatures are ~~is~~ stabilized at 105 F ± 3 F *for one hour. The vehicle fuel temperature stabilization step may be omitted on vehicles whose tank fuel and vapor temperatures are already at 105°F ± 3 °F upon the completion of the exhaust emission test.*

13. Modify the cold soak period preceding the vehicle preconditioning to a minimum of 6 hours. Also eliminate the initial fuel drain and fill and vehicle soak for vehicles performing consecutive tests with the same fuel specifications. Section affected: paragraph 4.g.i.B.

B. The vehicle preconditioning drive shall be performed in accordance with 40 CFR 86.132/90, except that following the vehicle fueling step at §86.132-90(a)(1) a *minimum* soak period of ~~12 to 36~~ 6 hours shall be provided to allow the vehicle to stabilize to ambient temperature prior to the preconditioning drive. *Vehicles performing*