

MEETING
CALIFORNIA AIR RESOURCES BOARD

HEARING ROOM
CALIFORNIA AIR RESOURCES BOARD
2020 L STREET
SACRAMENTO, CALIFORNIA

THURSDAY, FEBRUARY 10, 1994

9:35 A.M.

Nadine J. Parks
Shorthand Reporter

MEMBERS PRESENT

Jacqueline Schafer, Chairwoman
Brian Bilbray
Eugene Boston, M.D.
Joseph Calhoun
Lynne Edgerton
M. Patricia Hilligoss
Jack Lagarias
Jack Parnell
Barbara Riordan
Doug Vagin
Harriett Wieder

Staff Present:

Jim Boyd, Executive Officer
Tom Cackette, Chief Deputy Executive Officer
Mike Scheible, Deputy Executive Officer
Catherine Witherspoon, Assistant Executive Officer
Michael Kenny, Chief Counsel

Bob Cross, Assistant Chief, Mobile Source Division
Michael Carter, Chief, Off-Road Control Regulations
Branch, MSD
Jack Kitowski, Manager, Toxics & Fuels Section, MSD
Susan Kwan, Staff, Toxics & Fuels Section, MSD
Tom Jennings, Staff Counsel

Terry McGuire, Chief, Technical Support Division
Rich Bradley, Chief, AQDB, TSD
Debbie Popejoy, Manager, AQAS, TSD
Marci Nystrom, Staff, TSD

Lynn Terry, Manager, Northern California Liaison Section,
Office of Air Quality and Transportation Planning
Cynthia Marvin, Federal Liaison, OAQ&TP
Bob Jenne, Staff Counsel

Patricia Hutchens, Board Secretary
Artavia Edwards, Office of Legal Affairs
Bill Valdez

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CHAIRWOMAN SCHAFER: Before beginning our official business, regulatory business, this morning, I'd like to begin by welcoming three new Board members, and I will in a moment be administering an oath of office to each of our new Board members.

First, I'd like to welcome and recognize Joe C. Calhoun, who has just been appointed by Governor Wilson as one of the public members of the Board, associated with his expertise in automotive engineering.

Joe, last year, retired from the General Motors Corporation after having approximately 30 years' experience as an automotive engineer, most of it devoted to the control of automotive emissions. Prior to that, he had experience with the Los Angeles County Air Pollution Control District in its very early years, and was also associated as a staff member many years ago with the California Air Resources Board and then, finally, as I mentioned, with the General Motors Corporation.

In September of 1974, he jointed GM's environmental activities staff at the GM Technical Center located in Warren, Michigan, and subsequently moved to the Los Angeles. And he's a resident of the community of Seal Beach in Southern California. So, Joe, welcome to you. We

1 look forward to your participation with the Board members
2 and the expertise that you have to offer, not only about
3 automotive engineering in general, but the procedures of the
4 California Air Resources Board.

5 MR. CALHOUN: Thank you. Very happy to be here.

6 CHAIRWOMAN SCHAFFER: Thank you very much.

7 Next, I'd like to welcome Mr. Jack Parnell, Mr.
8 Secretary, as I would call him.

9 Jack is a native of California, resident of
10 Auburn, and a businessman, entrepreneur, writer, and really
11 an expert in all aspects of agricultural interests in
12 California. And he's also a public member of the Board
13 appointed by Governor Wilson, and we welcome you, Jack, to
14 the California Air Resources Board as well.

15 I knew Jack when he served as President Bush's
16 Deputy Secretary of the United States Department of
17 Agriculture from 1989 to 1991. Prior to that, he had
18 extensive experience here in appointed positions, including
19 his position as Secretary of the California Department of
20 Food & Agriculture from 1987 to 1989.

21 And there are many other -- a long list of many
22 other accomplishments and positions that Jack has held. So,
23 we're very honored to have you as a member of our Board.

24 MR. PARNELL: Thank you.

25 And, finally, I'd like to welcome Mr. Doug Vagim,

1 a Fresno native, and resident of Fresno, California. He has
2 been appointed by the Governor as a representative of the
3 San Joaquin Valley Unified Air Pollution Control District.
4 He was, since June of 1988, representing the Third
5 Supervisorial District on the Fresno County Board of
6 Supervisors, and he was the Chair of the Fresno County Board
7 of Supervisors in 1992.

8 Prior to that, he served, in 1991, as the Chair of
9 the San Joaquin Valley Unified Air Pollution Control
10 District.

11 In that capacity, Mr. Vagin presided over the
12 formation of the new unified air district and led the fight
13 to maintain local control and guided the establishment of
14 the concrete goals and objectives for the district. And
15 pursuant to legislation adopted here in California last
16 year, that district is, by statute, represented on this
17 Board. And we welcome you to the Air Resources Board also.

18 SUPERVISOR VAGIM: Thank you very much.

19 CHAIRWOMAN SCHAFFER: Now, with some help from
20 Artavia Edwards, I would like to begin by administering the
21 oath of office. And I'm going to step over to the podium
22 just because it's easier for me.

23 (Thereupon, the oath of office was
24 administered to each of the new members
25 by Chairwoman Schaffer.)

1 CHAIRWOMAN SCHAFFER: Also, at this time, I would
2 like to announce that the Board has signed and will be
3 sending to our former Board members -- both former
4 Chairwoman Jan Sharpless and former member Betty Ichikawa --
5 resolutions commending their service and expressing our
6 appreciation to them for their outstanding service on the
7 California Air Resources Board.

8 I'd also like to ask the staff to prepare a
9 similar resolution for our former member, Dr. Andrew
10 Wortman, that we will adopt and mail to him after the next
11 Board meeting.

12 MR. BOYD: Yes.

13 CHAIRWOMAN SCHAFFER: With those preliminaries
14 accomplished, I would like to call the meeting to order and
15 ask the Board Secretary to take the roll.

16 MS. HUTCHENS: Bilbray?

17 SUPERVISOR BILBRAY: Present.

18 MS. HUTCHENS: Boston?

19 DR. BOSTON: Here.

20 MS. HUTCHENS: Calhoun?

21 MR. CALHOUN: Here.

22 MS. HUTCHENS: Edgerton?

23 MS. EDGERTON: Here.

24 MS. HUTCHENS: Hilligoss?

25 MAYOR HILLIGOSS: Here.

1 MS. HUTCHENS: Lagarias?

2 MR. LAGARIAS: Present.

3 MS. HUTCHENS: Parnell?

4 MR. PARNELL: Here.

5 MS. HUTCHENS: Riordan?

6 SUPERIOR RIORDAN: Here.

7 MS. HUTCHENS: Vagim?

8 SUPERVISOR VAGIM: Here.

9 MS. HUTCHENS: Wieder?

10 SUPERVISOR WIEDER: Here.

11 MS. HUTCHENS: Chairwoman Schafer.

12 CHAIRWOMAN SCHAFFER: Here.

13 Now, before we take up the first time, I would
14 like to invite any of our new Board members to make any kind
15 of opening statement they would like to make, since this is
16 your first board meeting.

17 Mrs. Edgerton and I used the occasion at our first
18 Board meeting, which was a long time ago -- I think it was
19 one month precisely. So, that makes us old hands here.

20 SUPERVISOR BILBRAY: I want to encourage it,
21 because from now on, you get fined for this.

22 (Laughter.)

23 CHAIRWOMAN SCHAFFER: Joe, is there anything you'd
24 like to say on your first day on the job here?

25 MR. CALHOUN: Well, looking, you know --

1 SUPERVISOR BILBRAY: Hit the button. (Speaking of
2 microphone on/off button.)

3 MR. CALHOUN: Looking out in the audience, I'm
4 reminded of the days when, as a staff member, I presented
5 various staff reports to the Board, and the difficulty
6 sometimes that we went through in trying to justify those
7 regulations.

8 And, as a former GM employee, obviously, you know
9 I had a lot of difficulty there --

10 (Laughter.)

11 MR. CALHOUN: -- and now it's going to be
12 interesting to sit on the other side and pass judgment on
13 some of these things that are being presented before the
14 Board. So, I'm very, very happy to be here, and kind of
15 anxious to get things going.

16 CHAIRWOMAN SCHAFER: Very good. Again, welcome
17 aboard.

18 Mr. Parnell.

19 MR. PARNELL: I will be brief. I'm pleased to be
20 here. Some people question why that's the case, but,
21 nonetheless, it is.

22 (Laughter.)

23 MR. PARNELL: I think it's a monumental task to
24 make sure that our environment is well served and the
25 integrity of the environment is protected and, at the same

1 time, the integrity of the economic environment. And these
2 two have to come together. And I think that's the balancing
3 that needs to be accomplished by this Board. And,
4 certainly, I hope to contribute.

5 Thanks for the opportunity.

6 CHAIRWOMAN SCHAFFER: Thank you very much, Mr.
7 Parnell.

8 Supervisor Vagim.

9 SUPERVISOR VAGIM: Thank you very much. Indeed,
10 it's an honor to be here, enjoying the new members,
11 representing the San Joaquin Valley Unified Air Pollution
12 Control District, which almost was an AQMD, but we, as a
13 group of folks in San Joaquin Valley, lived up to our
14 promise to make that district work.

15 And I think I bring to this position the efforts
16 of literally dozens of folks throughout San Joaquin Valley
17 who helped to put that district together and make it, I
18 think, a proud district that is serving all the people of
19 the State, not just the San Joaquin Valley.

20 Indeed, I take this position with an awesome
21 respect for the job that is being done here by staff, by the
22 Board, and, of course, by the constituency, you, the folks
23 that are very attentive to what is happening in air
24 throughout California. Having and do continue to serve on
25 an air pollution control district, I know and appreciate all

1 the causes and effects that go on here. And I want you to
2 know that I will bring that same to this position.

3 And, again, thank you.

4 CHAIRWOMAN SCHAFFER: Thank you, Supervisor Vagim.

5 Now we will take up the first agenda item, Number
6 94-2-1.

7 First, I'd like to remind those of you in the
8 audience who would like to present testimony to the Board on
9 any of today's agenda items to please sign up with the Board
10 Secretary.

11 If you have a written statement, please give 20
12 copies to the Board Secretary.

13 The first item on the agenda is the public hearing
14 to consider the adoption of amendments to regulations
15 regarding evaporative emission standards and test procedures
16 applicable to 1995 and subsequent model-year passenger cars,
17 light-duty trucks, medium-duty vehicles, and heavy-duty
18 vehicles.

19 Evaporative emissions from motor vehicles are a
20 significant source of total hydrocarbon emissions. We have
21 previously adopted regulations to provide stringent control
22 of evaporative emissions.

23 Before us for consideration today is a regulatory
24 proposal to modify those regulations.

25 Mr. Boyd, would you please present this item to

1 the Board.

2 MR. BOYD: Thank you, Chairwoman Schafer, and good
3 morning to Board members. And I would like, on behalf of
4 the staff, to give a special good morning, and
5 congratulations, and welcome to the three new Board members.
6 We look forward to working with you.

7 And fortunately, many of us have worked with and
8 know the three new Board members, and look forward to
9 working with them in their new capacity.

10 In August of 1990 -- now, getting right -- you
11 know, the rubber hits the road right away, Joe --

12 (Laughter.)

13 MR. BOYD: In August of 1990, your Board indeed
14 adopted enhanced, as we called them, evaporative emission
15 test procedures, which were and are designed to
16 significantly reduce evaporative emissions on high-
17 temperature ozone prone days that we tend to have here in
18 California in particular.

19 The U.S. EPA, subsequent to our action, adopted
20 their own enhanced evaporative test procedures. The federal
21 procedures are very analogous to our procedures, to the
22 enhanced test procedures that were adopted by the Board,
23 with the addition, however, of a supplemental test that they
24 require and minor technical modifications that they
25 included.

1 So, today, we, your staff, are presenting to you a
2 recommendation to adopt amendments to our enhanced test
3 procedures in order to include the federal supplemental
4 procedure and to make our rule more consistent with the
5 federal evaporative emission test procedures.

6 Historically, where at all possible, we try to
7 some degree harmonize regulations between ourselves and the
8 federal government in order to provide the industry the most
9 flexibility as possible.

10 This is one area where, after a lot of debate and
11 discussion, we, they, and the industry have reached, I
12 think, a fairly good agreement on the subject.

13 Now, this will be a two-part presentation. I've
14 asked first that Bob Cross, Assistant Chief of the Mobile
15 Source Division, give the Board some background on the
16 evaporative emissions issue and the regulations that exist
17 for the benefit of the audience and the Board as a whole,
18 and particularly for the benefit of our newest Board
19 members.

20 And upon the conclusion of that background, then,
21 Bob will turn the detailed staff presentation of the
22 suggested item over to Ms. Susan Kwan of the Mobile Source
23 Division, who will present the more traditional staff
24 report.

25 With that, I'd like to introduce Bob Cross to give

1 you some background. Bob?

2 MR. CROSS: Thank you, Mr. Boyd.

3 Good morning, Chairwoman Schafer and members of
4 the Board. I'd like to particularly welcome the new members
5 of the Board.

6 The purpose of my presentation is to provide some
7 background on evaporative emission control, particularly for
8 the benefit of the new Board members, and it will serve as
9 review for the longer-standing Board members.

10 This was done on fairly short notice, so I'm
11 working from notes, and you will notice that some of the
12 slides don't match others. But I think that they provide
13 the necessary flow to convey the information that we want to
14 convey to you this morning.

15 I'll be happy to answer questions as we go along
16 or at the end as you prefer.

17 Let's see if the first slide will arrive here.

18 First of all, what are evaporative emissions? I
19 think many of you will recall that old cars typically smell
20 like gasoline. I think when we garaged our cars 20 or 30
21 years ago, you would walk in the garage and it would stink.
22 And the reason that this occurred was because fuel
23 evaporated from various sources in the fuel system of the
24 car, and sometimes there were small leaks of fuel in the
25 car.

1 Fuel, gasoline particularly, is formulated to
2 evaporate. It needs to be sufficiently volatile so that an
3 engine will start when it is cold. In other words, the fuel
4 is mixed with the air and then inducted into a cold engine,
5 and it needs to be able to be ignited. It needs to be
6 sufficiently rich to be ignited to start the engine.

7 So, basically, you need volatility so the fuel
8 evaporates, so that the engine starts. A low-volatility
9 fuel like diesel, for example, would be very, very difficult
10 to start in a gasoline engine.

11 The problem is that, when you formulate fuels to
12 evaporate, they evaporate all the time, not just when you're
13 trying to start a cold engine.

14 The vehicular sources of evaporative emissions
15 are, first of all, the fuel tank on an uncontrolled vehicle.
16 There's a little vent in the fuel cap or in the filler neck.
17 And basically, as the fuel tank cycles through the ambient
18 temperature excursions that occur during the day, the fuel
19 in the tank heats and cools, tracking those ambient
20 excursions.

21 And when that occurs, vapors are essentially
22 pumped out of the vent through expansion, and those are
23 evaporative emissions. And then, when the fuel cools back
24 down, vapor comes back -- air comes back in the vent to form
25 a new load of vapor, which will occur the next time the fuel

1 tank is heated.

2 So, without an evaporative emission control,
3 everyday, as the fuel tank heats up, vapors come out; at
4 night, air goes in and mixes with fuel vapors to form a new
5 load of vapors. And then the next day the same thing
6 occurs. These emissions are called diurnal emissions.

7 On older cars with carburetors, there was a small
8 fuel tank at the engine as well, called a carburetor float
9 bowl. And essentially, that was the fuel source for the
10 engine.

11 By locating this little fuel tank on top of the
12 engine, the fuel was subject to high temperatures whenever
13 the engine was shut off.

14 And so, what would happen would be the fuel in the
15 float bowl would be heated as the engine was sitting when
16 you shut it off and it would evaporate. And that probably,
17 even more than diurnal emissions, was why older cars would
18 smell when you parked them in the garage. These emissions
19 are called hot soak emissions.

20 There are also running loss emissions, which occur
21 when a vehicle is being driven. It's more typical of
22 vehicles with evaporative emission controls. And,
23 essentially, what happens with running loss emissions is
24 that the rate of vapor generation on the vehicle through the
25 fuel being hot exceeds the rate that the emission control

1 system can keep up with.

2 So, what happens is that the excess vapor is
3 emitted to the air. And that would happen, for example, on
4 a very hot day on a vehicle where fuel boiling occurs in the
5 tank, for example. There's just no way the evaporative
6 emission control system could keep up with it, and you get
7 these running loss emissions.

8 There are also emissions, obviously, due to leaks.
9 If there's a fuel leak anyplace on the vehicle -- as you
10 know, if you spill gasoline on the ground, it evaporates
11 very, very quickly. So, any leakage is a source of
12 evaporative emissions.

13 Further, fuel permeates through a lot of
14 materials, notably plastics and rubber. So, a lot of the
15 materials on vehicles are responsible -- current vehicles,
16 anyway, are responsible for causing evaporative emissions.
17 The fuel literally permeates through the materials of the
18 fuel system.

19 This one is actually just an old slide that I
20 pulled out kind of for fun. It's a representation of an old
21 uncontrolled engine. And you can see the air cleaner on the
22 top of the engine. And right below it is the carburetor,
23 which would normally have float bowl. And that float bowl
24 is what contains the fuel. So, you can see that that little
25 fuel tank at the front of the vehicle in the engine

1 compartment is located right at the top of the engine where
2 it would be very, very hot after you shut it off.

3 How are evaporative emissions measured? Actually,
4 the area of emissions measurement in general has been an
5 area of very, very good cooperation between industry,
6 private research companies, and regulatory agencies.

7 Today, I think we have a number of members of an
8 industry/government research group sitting in the audience,
9 which I think is out visiting us. And that kind of process
10 has worked very, very well to develop procedures for testing
11 emissions.

12 The procedures that I will go through today
13 resulted from a lot of cooperative research projects between
14 industry and government. Two of the testing methods were
15 extensively supported by General Motors. I was looking at
16 the literature a little bit before I put this thing
17 together, and I found a 1968 paper where, essentially,
18 General Motors developed the test that preceded the test
19 that we will be talking about as kind of our core test for
20 the future.

21 Okay. So, how do we measure evaporative
22 emissions? The first way would be to -- basically, let me
23 tell you that activated carbon absorbs evaporative
24 emissions. It absorbs gasoline vapors, and it absorbs most
25 hydrocarbon vapors.

1 So, if you put a can containing charcoal and
2 connected to the source of evaporative emissions, you could
3 measure the evaporative emissions by measuring how much the
4 weight changed in the can. In other words, you measure it
5 first and you have it with no evaporative emissions. You
6 hook it up to the fuel tank vent and the float bowl and run
7 your test. And then you measure the weight again, and the
8 increase in weight is how much vapor was emitted.

9 And that was the first way of testing evaporative
10 emissions.

11 Unfortunately, the problem with that was that, by
12 hooking up the can, you kind of changed the condition where
13 the vent was. So, another method needed to be developed.

14 And the next method is called the sealed housing
15 method, the one that GM had so much to do with in 1968. And
16 essentially what they do is they put the entire vehicle in a
17 sealed room to run the test. And then they monitor the
18 change in hydrocarbon concentration as the vehicle emits
19 hydrocarbons.

20 So, essentially what they're doing is they're
21 monitoring what happens to the air quality in the room where
22 the vehicle is sitting, as it emits, to determine how much
23 is emitted.

24 For this test, the diurnal heating cycle that the
25 fuel tank experiences was accomplished using a heating

1 blanket under the fuel tank. And it's done in an hour.
2 Basically, the fuel is heated from 60 to 84 degrees in an
3 hour. The fuel boiling in the float bowl was simulated by
4 taking the vehicle off of the test rolls and -- with the
5 engine hot -- and parking it in a sealed enclosure for an
6 hour.

7 And that was our mainstay emission test for
8 evaporative emissions, basically, from '68 till virtually
9 the present.

10 I'm going to show a couple of pictures here of the
11 sealed housing, and then I'll get on to the others.

12 Basically, this is the housing itself at the ARB's
13 El Monte laboratory. It's the old one. We have another one
14 now, which I'll show you in a moment. And, essentially, you
15 can see the doors at the front, which are sort of swung out
16 towards us. And then the vehicle's pulled into this room,
17 the doors are shut. The pipes on the side with the little
18 boxes are fans, which are used to circulate the air in the
19 room to make sure it's mixed.

20 And then, essentially what's done is the vehicle
21 just sits there for an hour, and you measure what happens to
22 the air in the room. This is the same sealed housing. You
23 can see the doors a little better on the right, for example,
24 right in front of the wall or ceiling line there is one of
25 the doors. On the left is the instrument train which

1 measures the hydrocarbon concentration in the shed.

2 The big fans can be used to basically circulate
3 clean air through the room, if you need to, to quickly clean
4 it out for the next test.

5 I said I would move on to the more recent testing
6 methods. This is a picture of what's called a running loss
7 shed at ATL back in Ohio. And ATL did a lot of the
8 pioneering research work in this testing. You can see in
9 the foreground -- this is all sealed room. You can see in
10 the foreground on the floor, there are two rollers. And,
11 basically, what you can do there is you can drive the
12 vehicle in the sealed room. And so, you can measure the
13 emissions that come off of the vehicle while it's running.

14 And that was a fairly big breakthrough. They
15 tried to do it with the carbon trap method, and it just
16 didn't work. The vehicle needed to be in a sealed room.

17 There are a lot of kind of tricky engineering
18 problems with making this happen. I mean, basically, you
19 have to be able to isolate the air going into the engine and
20 the exhaust coming out of the vehicle so that they don't
21 contribute to the emissions measurements.

22 The radiator on a vehicle ejects a large amount of
23 waste heat. So, when you try and control the temperature in
24 this room, you need a very good air conditioning system to
25 be able to keep the room at the temperature you want to keep

1 it at.

2 Also, since the vehicle is stationary on the
3 rollers, to really simulate what happens in the real world
4 you need to be able to do something to heat the fuel system
5 the way it would be by the air flowing -- heat and cool --
6 by the air flowing under the vehicle as if it's actually
7 driven. Because since it's sitting there, you really don't
8 have the normal on-road airflow.

9 So, there are a lot of real tricky simulation
10 problems with running this kind of test. But it's a very
11 insight-giving test when it's used.

12 Okay. The other advanced testing method -- this
13 is essentially similar to the first sealed housing I showed
14 you, except that you can see that the structural caliber of
15 the enclosure is better. In other words, it looks like a
16 much more substantial enclosure, and it is. It's sealed
17 better. And the reason is because it's designed to test the
18 vehicle for extended periods of time.

19 You can put a vehicle in there for days and
20 measure the emissions coming off of it and be relatively
21 confident that the measurements that you're taking are
22 accurate.

23 Also, you can't see it too well, but there's sort
24 of a box on the roof of that thing. And the purpose of that
25 box is to simulate or actually change the volume of the room

1 as the vehicle undergoes heating and cooling. In other
2 words, when you heat the air in a room, it expands. And in
3 this condition, since you're trying to measure emissions in
4 the room, you need to make room for the air as it expands.
5 So, the roof of this thing actually moves up and down with
6 the change in ambient temperature.

7 Okay. How are evaporative emissions controlled?
8 Recall that I said that you could use activated carbon to
9 trap emissions to measure them. Well, you can also use
10 activated carbon to trap emissions that you don't want to
11 have escape into the environment.

12 And that's the kind of the core piece of an
13 evaporative emissions control system. The device is called
14 an evaporative canister. It's filled with activated carbon.
15 I'm going to pass one around so you can see what they look
16 like.

17 Essentially, what's done with the canister is the
18 vapor vents for the fuel tank and the carburetor, if you
19 have one, and anyplace else vapors might come from are
20 hooked to this canister. Vapors come out. They're stored
21 in the canister. Then you need to figure out how to clean
22 the canister when it's full.

23 So, you need to have a means to get the vapors
24 back out. And what's done is called purging. And
25 essentially what happens is that they hook the canister to

1 the engine's inlet manifold, and it pulls air back through
2 the canister to take the vapors back out.

3 So, when the vehicle's off, vapors are going from
4 the tank and the carburetor into the canister. When the
5 vehicle's running, the vapors are going from the canister
6 into the engine and being burned. So, you have a sort of
7 cycle of filling and purging.

8 You have to be sure that -- we'll be talking about
9 this more later, but you have to be sure that the canister
10 is sized sufficiently so that it will hold enough vapor so
11 you don't end up with it overflowing.

12 Another control method is basically the use of
13 fuel injection. Modern cars have fuel injection systems
14 which eliminate that little fuel tank on the engine, the
15 carburetor float bowl, and just use the main vehicle fuel
16 tank. And by eliminating that, the one on the engine, you
17 eliminate a whole bunch of problems in terms of evaporative
18 emission control.

19 Better materials can be used to address the issues
20 of leakage, for example, and permeation. Less volatile
21 fuels -- once you've gone to fuel injection, the need to
22 have a volatile fuel for cold starting decreases. It
23 doesn't go away, but it diminishes. And that allows for
24 fuels which evaporate less easily.

25 And your Board has adopted several fuel standards,

1 Phase I and Phase II gasoline both, which reduce the
2 tendency of fuel to evaporate.

3 And last but not least, on-board diagnostics --
4 once you have these evaporative emission control systems on
5 vehicles, it's important that you be able to identify times
6 when they're not working.

7 Unfortunately, many of the failures of these
8 systems are transparent to the vehicle operator. In other
9 words, the vehicle runs the same. So, without some sort of
10 system to identify problems, you need a diagnostic system.
11 And on modern cars, notably cars starting in say, '95, '96,
12 '97, there will be systems which look for leaks and also
13 determine whether or not the purge system is working
14 properly.

15 These are pictures of other canisters, besides the
16 one I'm passing around.

17 By the way, the one that I'm passing around
18 actually has a couple of the little control valves on top of
19 it. So, the purge valve is actually one of those little
20 round things on top.

21 This is another way of quickly going through the
22 evaporative emission control system in a schematic form. If
23 you look at it, the device on the top left is the canister;
24 on the far right is the fuel tank. The top line would be
25 the evaporative emission line, if you will, where the fuels

1 go from the tank into the canister.

2 The third line down, horizontal line, is between
3 the canister and the intake manifold. And that is the purge
4 line where vapors are taken out when the engine is running.

5 The intermediate line with the A/F box on it is a
6 line which indicates that, when the engine is running, the
7 fuel that it is getting is a mix of what comes out of the
8 fuel tank and the fuel line and what comes out of the
9 canister in terms of purge.

10 And the reason that that A/F line is connected to
11 the electronic control unit down at the bottom is because
12 the electronic control unit has to decide how to mix the
13 fuel coming out of the canister and out of the tank.

14 This one here is basically just a case in point of
15 the need for diagnostics. If you look at the kind of curved
16 hose coming out of the top of the canister, you can see
17 where it's basically abraded or rotted. And that kind of
18 failure is very, very common in evaporative emission control
19 systems in older cars.

20 With improved materials and some of the other
21 things that our staff will be talking about further in a few
22 minutes, this will be less likely, but it's still important
23 to be able to catch it.

24 Because, basically, when that occurs, all of the
25 evaporative emissions are uncontrolled.

1 What are the evaporative emission standards? This
2 is an interesting slide, because, if you skim it, it looks
3 like the standards haven't changed. In other words, in 1970
4 and '71, the standard was 6 grams per test, and the test
5 would be the sum of one hot soak and one diurnal. '72 to
6 '77, it dropped to 2. '78 and '79, it went back up to 6.
7 And '80 to '94, it went back down to 2.

8 The difference is that the first -- the first line
9 was done on the carbon trap test, which, as I said, is not a
10 very efficient test or it underestimates emissions.

11 The second and third are done on the procedure I
12 listed, the one with the one-hour hot soak and one-hour
13 diurnal. And what I'll be talking about in a minute will be
14 a new procedure which, again, tightens down on the testing
15 portion.

16 And it's interesting. In the case of evaporative
17 emissions, the increasing stringency over time has been due
18 to better tests, if you will, rather than changing the
19 number -- the standard.

20 Recall that I said that the maximum temperature of
21 the diurnal test was 84 degrees, runs from 60 to 84. This
22 is a listing of maximum ambient temperatures during smog
23 season in some of the warmer cities in California. And you
24 can see that five percent of the days Bakersfield, Fresno,
25 and Sacramento were over 100, and two percent of all of them

1 are over 101.

2 So, the point to derive from this slide is that,
3 while we had an 84 degree maximum diurnal test temperature,
4 in the real world in smog season, we were seeing
5 temperatures over 100 on smoggy days.

6 Also, the diurnal test that we do for vehicles is
7 a one-hour one-time deal. And if you look at this slide,
8 you can see that a lot of vehicles are parked for more than
9 one day. And so, the point being that, if your test only
10 evaluates one day of vehicle sitting, your canister will not
11 have enough carbon in it to accept the loading of the second
12 and third day for say 20 percent of the vehicles that sit
13 for three days or more.

14 The other issue is that, by compressing a test in
15 time, you don't necessarily represent what happens in the
16 real world. We ran a number of tests of vehicles which were
17 certified to the two gram standard. And you can see in a
18 realtime high-temperature diurnal -- 103 degree peak
19 temperature -- on day one, vehicles certified to 2 grams
20 were 6, 4, 20, and 7. And by the end of day three, they
21 were 26, 19, 38, 39 for a 24-hour diurnal.

22 So, those vehicles are running 10 to 20 times the
23 standard.

24 So, again, repeating: 60 to 84 degrees is not
25 representative of high temperature days. One diurnal is not

1 adequate; multiple are needed. And compressed time does not
2 adequately represent in-use performance.

3 In response to this, the staff brought a proposal
4 to the Board in 1990 that was based on severe but realistic
5 ambient conditions. It included a diurnal test run in real
6 time for three days with peak ambient temperatures of 105
7 degrees, included a hot soak test run in that dynamometer --
8 that test shed with the dynamometer rolls in it, again, with
9 a running temperature of 105 degrees.

10 And let me see here. Those are the two major
11 features. And the hot soak was also performed at 105. So,
12 basically, the diurnal was run at 105. The hot soak was run
13 at 105. And a running loss test was added at 105. The
14 standards for the diurnal and hot soak stayed, again, the
15 same, at 2 grams per test. The running loss is an
16 additional standard; that's a new standard.

17 The Board adopted the staff proposal in 1990 with
18 the implementation schedule shown -- 10 percent of the cars
19 in '85, 30 percent in -- '95, I'm sorry; 30 percent in '96,
20 50 in '97, and 100 in '98.

21 So, we're now certifying sort of the first round
22 of these cars that are being developed to comply with the
23 new test procedure.

24 The benefits of the Board action in 1990 are quite
25 substantial. You can see, in 2010, on a 75 degree day, it

1 was 122 tons per day statewide; on a 105 degree day, it was
2 400 tons per day statewide. I think that's one of the
3 biggest hydrocarbon control measures I recall the Board
4 adopting since I've been on the staff.

5 What's the current status? As I said, '95 cars
6 are now being certified. As Mr. Boyd, the federal
7 Environmental Protection Agency followed and adopted a
8 similar procedure, but with some additional twists. And
9 then, we've learned some things from the testing that the
10 car manufacturers and EPA have done.

11 And, basically, the purpose of today's Board item
12 will be to go through some amendments which would align
13 these two procedures, align the federal and the California
14 procedure, and fix the things that we've learned.

15 I can break for a second, if you have any
16 questions, and then we can move on to the presentation of
17 the regulatory item for today.

18 MR. CALHOUN: I have one question.

19 CHAIRWOMAN SCHAFFER: Yes. Mr. Calhoun.

20 MR. CALHOUN: I have one question. Bob, could
21 you refresh my memory as to how we arrived at 105 degrees?
22 I was looking at the chart on one of the slides there that
23 shows the average temperature in Bakersfield, Fresno, and
24 other places.

25 MR. CROSS: I think we went for sort of a worst

1 plausible case. And it was designed to recognize that those
2 kinds of conditions do occur and they occur during smog
3 season on smoggy days.

4 And we knew it was an extreme case. We knew it
5 would cause a lot of hand-ringing in terms of the design
6 engineers who have to face this problem. But I think we
7 also felt that it would sort of put the issue to bed. In
8 other words, once they use this test procedure, I don't
9 think there's much question that the evaporative emissions
10 will be properly controlled.

11 And there was debate about the maximum
12 temperature, but I think we -- that the Board concluded the
13 extra few degrees over the statistics that I showed were
14 okay and worthwhile.

15 MR. CALHOUN: So, it's sort of a case where, in
16 essence, it's designed for the worst-case condition, I
17 guess.

18 MR. CROSS: Yes.

19 CHAIRWOMAN SCHAFER: Mr. Lagarias?

20 MR. LAGARIAS: Bob, the canister you showed is, is
21 that for a one-day diurnal or a three-day?

22 MR. CROSS: It's one day.

23 MR. LAGARIAS: All right. How much larger will
24 the canister have to be if you're going to go from a one-day
25 diurnal capacity to a three-day?

1 MR. CROSS: I think the typical volumes are one to
2 two liters. So, it's maybe twice as big physically.

3 Another interesting thing on that canister -- I
4 don't know if you noticed -- but the bottom of it was open.

5 MR. LAGARIAS: It's fiberglass?

6 MR. CROSS: Yeah. And that particular canister
7 design, when all of this research was being done, was shown
8 to be a problem. Because, basically, the vapors kind of
9 fall out and self-purge when the engine's not running.

10 And so, it's called an open-bottom canister. And
11 they've gotten rid of that particular design.

12 MR. LAGARIAS: I was wondering why you'd want to
13 have an open bottom.

14 This is a technical question. Does the packing of
15 the carbon, do they vary it so that the front end of the
16 carbon packing will most readily absorb the hydrocarbons?

17 MR. CROSS: I think it's variable, depending on
18 who you talk to. But there's an awful lot of, quote,
19 "art/science" to selecting exactly the kind of activated
20 carbon, the size and loading of it, to get the maximum
21 performance out of the canister. Because you want it to
22 hold as much as you can, because then you can make it
23 smaller.

24 MR. LAGARIAS: And one other question. When you
25 purge a canister, you don't completely purge all the

1 absorbed hydrocarbons. Is there a time when there'll be
2 enough residue retained in the canister of hydrocarbons that
3 it can't be purged and that reduce the capacity of the
4 canister to operate?

5 MR. CROSS: They do experience some reduction, as
6 you've noted. I think that the conventional knowledge is
7 that -- is that that reduction sort of happens during the
8 very early vehicle's life, and then the sort of rate of
9 change, if you will, in canister capacity over the extended
10 vehicle life is very slow and not problematic.

11 MR. LAGARIAS: Sort of seasons it.

12 MR. CROSS: Yeah. Yeah.

13 MR. LAGARIAS: Thank you.

14 CHAIRWOMAN SCHAFER: Yes, Dr. Boston.

15 DR. BOSTON: Bob, when the canister absorbs the
16 fuel vapors and then the engine is started and you're
17 purging the system again, what causes the carbon to release
18 the hydrocarbons again? Is it heat from the engine? Is
19 that what's required? Or is it the vacuum from the engine
20 that's --

21 MR. CROSS: Primarily, it's pulling clean, warm
22 air over the activated carbon. In other words, the canister
23 -- you notice how it was open at the bottom. It should be
24 open someplace else. But, essentially, what happens is that
25 air is pulled in through the canister by the intake manifold

1 vacuum. And that clean air takes some of the hydrocarbons
2 with it.

3 DR. BOSTON: How long would it typically take to
4 purge that canister?

5 MR. CROSS: Oh, it's variable, depending on what's
6 called the purge rate, which is how much airflow you pull
7 across it.

8 But the procedures require the manufacturers to do
9 a substantial amount of the purging job during a federal
10 test procedure, which is, say, an hour drive, half-hour
11 drive.

12 DR. BOSTON: Can the canister be located anyplace
13 in the vehicle?

14 MR. CROSS: Yes.

15 DR. BOSTON: Or must it be by the engine?

16 MR. CROSS: No, it can be located anywhere, which
17 is answering your question about warm air. Warm air is not
18 real critical.

19 DR. BOSTON: I see. Okay. Thank you.

20 CHAIRWOMAN SCHAFFER: Mr. Calhoun.

21 MR. CALHOUN: The trend has been toward -- away
22 from open-bottom canisters. And the emission area, in the
23 past, if the canister could not absorb the capacity of
24 gasoline vapor, it'd go out the bottom.

25 Do you think there would be any benefit to closing

1 the bottom of some of these canisters on older cars?

2 MR. CROSS: There might be. That has --
3 essentially, you're suggesting a kind of a retrofit program
4 to replace open-bottom canisters with closed-bottom
5 canisters. And, yes, there is potential there. The
6 question is, you know, is it cost-effective for the
7 remaining life of the vehicle? And what are the odds that
8 the installation will be done improperly?

9 Because if you get the lines mixed up, for
10 example, or something like that, you could lose some of the
11 benefit of the program. But, technically, yes. There's no
12 question that there's potential there.

13 CHAIRWOMAN SCHAFFER: Yes. Supervisor Vagim.

14 SUPERVISOR VAGIM: Two questions. One is, when
15 the engine's first started, before the engine is warm, do
16 the hydrocarbons get heated before they get introduced to
17 the system, or do they just go right out the tailpipe even
18 with a cold engine?

19 MR. CROSS: Basically, when an engine's started,
20 particularly a carbureted engine, a whole bunch of raw fuel
21 just goes out the tailpipe.

22 SUPERVISOR VAGIM: So, you're dumping hydrocarbons
23 out without burning them for the first few seconds or minute
24 of the engine start.

25 MR. CROSS: Right. Now, on a more modern car with

1 fuel injection, the -- see, with a carburetor, you're kind
2 of relying on fuel evaporation to get enough fuel in the air
3 so it'll burn. And a lot of the liquid just doesn't
4 evaporate.

5 With a fuel injection system, you're kind of
6 forcing it to evaporate. So, on a fuel-injected vehicle,
7 you can -- the amount of unburned fuel that comes out the
8 tailpipe is way down when you start it cold.

9 SUPERVISOR VAGIM: But if you have a bigger
10 canister and you have a carburetor, you're going to have
11 more airflow dumping more hydrocarbons out at startup?

12 MR. CROSS: At very startup, basically, the
13 canister is turned off. In other words, basically, you have
14 the canister open after the engine gets warmed up.

15 SUPERVISOR VAGIM: So it does have a timing
16 mechanism.

17 MR. CROSS: Yeah.

18 SUPERVISOR VAGIM: Okay.

19 MR. CROSS: Yeah, the purge valve is timed.

20 SUPERVISOR VAGIM: The other question is, what
21 happens, then, at day four on out?

22 MR. CROSS: You lose some emissions. But by
23 virtue of increasing the canister size so much to take up
24 for the three days, the rate of loss is much less.

25 In other words, it's not a -- I characterized it

1 as sort of a canister overflowing. It's not really quite
2 that simple. Basically, the emissions just sort of continue
3 to sort of increase with time as the system saturates.

4 But if you have a bigger canister, the time where
5 those emissions become significant is pushed way off.

6 SUPERVISOR VAGIM: But with an open bottom, I
7 presume they also gave some pressure relief. If you have a
8 closed canister, when the pressure builds up, where will
9 that go?

10 MR. CROSS: It's still open; it's just open at the
11 bottom. It's because the hydrocarbon --

12 SUPERVISOR VAGIM: So, it's still going to be
13 released if the system --

14 MR. CROSS: Yeah, it'd be an open top, for
15 example. The deal is, basically, since hydrocarbons are
16 heavier than air, they sort of literally fall out of the
17 canister.

18 SUPERVISOR VAGIM: Very good. Thank you.

19 CHAIRWOMAN SCHAFFER: Yes, Ms. Edgerton.

20 MS. EDGERTON: Just to put the whole program in
21 context for me, what percent of the overall evaporative
22 emissions do you estimate are captured by the canisters?

23 MR. CROSS: Oh, with the advanced procedures, the
24 currently adopted procedure's high nineties.

25 MS. EDGERTON: High nineties?

1 MR. CROSS: Yeah, high nineties. My view is that
2 the advanced procedure -- the three-day diurnal and the
3 hot/hot soak -- will virtually make evaporative emissions a
4 nonproblem.

5 MS. EDGERTON: So you won't need to come back with
6 more changes after this?

7 MR. CROSS: No. The changes we're coming back
8 with are technical amendments, too. They're not proposed
9 changes to the standards themselves.

10 MS. EDGERTON: Thank you.

11 CHAIRWOMAN SCHAFER: Mr. Calhoun?

12 MR. CALHOUN: I was just listening to Bob.

13 CHAIRWOMAN SCHAFER: Okay. I'm sorry. I thought
14 you had another question.

15 MR. CALHOUN: Let me respond to something that
16 Bob said. I was listening to your response to Ms.
17 Edgerton's question. We're sort of plowing new ground, so
18 to speak, here. And while we do not anticipate any
19 difficulties with the regulation, you never know.

20 So, you may be coming back sometime in the future
21 with some additional information in that area.

22 MR. CROSS: I was including in that the on-board
23 diagnostic portion, hoping that that would capture some of
24 that. But you're absolutely right.

25 CHAIRWOMAN SCHAFER: Are there any more questions

1 for this part of the staff's presentation from the members
2 of the Board?

3 I've one big picture question. Bob, I don't know
4 whether you know or someone else might know. What air
5 emission benefits have been associated with the overall
6 evaporative emission control program since its inception?
7 Order of magnitude kind of numbers.

8 MR. CARTER: This particular item, the enhanced
9 item that we adopted or you adopted in 1990, that's
10 responsible for a 79 percent reduction.

11 CHAIRWOMAN SCHAFFER: How many tons of emissions
12 are we talking about roughly?

13 MR. CARTER: Well, as Bob was saying and showing
14 on one of the slides, on a high-temperature day it's 400
15 tons per day.

16 MR. CROSS: So, it's 120 at 75 and 400 at 105.

17 CHAIRWOMAN SCHAFFER: Okay.

18 Mr. Boyd, do you want to continue?

19 MR. BOYD: Thank you. I believe Ms. Kwan will now
20 present the proposal that's before you today.

21 CHAIRWOMAN SCHAFFER: Very well.

22 MS. KWAN: Thank you, Mr. Boyd.

23 Good morning, Chairwoman Schafer and members of
24 the Board. Today's proposal consists of amendments which
25 are intended to clarify and improve California's enhanced

1 evaporative emission test procedures.

2 The proposed amendments are also intended to more
3 closely align with the federal procedures. Before I proceed
4 to explain the proposal in more detail, allow me to provide
5 a brief overview of previous regulatory actions.

6 In November of 1990, the Board adopted enhanced
7 evaporative emission test procedures which controlled all
8 three types of evaporative emissions under conditions
9 indicative of hot summer days in California.

10 The test conditions were representative of the
11 real world, consisting of a realtime three-day diurnal test,
12 a high-temperature, one-hour hot soak test, and a high-
13 temperature running loss test.

14 On high temperature/high ozone days, an emissions
15 reduction of 79 percent of evaporative emissions statewide
16 would result from passenger cars certified to the enhanced
17 test procedures rather than the original procedures.

18 In the year 2010, an emissions benefit of 400 tons
19 of hydrocarbons per day statewide would result on these
20 days.

21 When the ARB regulations were adopted in November
22 of 1990, the U.S. EPA was also working on revising their own
23 federal evaporative emission regulations.

24 In March of 1993, the U.S. EPA promulgated
25 enhanced evaporative emission standards and test procedures

1 that duplicated the ARB enhanced regulations with several
2 changes.

3 These changes included the addition of a
4 supplemental test, different fuel vapor pressure
5 requirements, and test temperature specifications that are
6 more consistent with federal conditions, relaxed diurnal
7 plus hot soak standards for certain vehicle classes, and
8 other relatively minor technical revisions.

9 The staff's proposal includes four distinct
10 amendments: incorporation of the federal supplemental test,
11 new certification requirements for complete medium-duty
12 vehicles from 8,501 to 14,000 pounds gross vehicle weight,
13 alignment with other federal requirements, and various
14 improvements to the test procedures.

15 Compliance with the proposed amendments would
16 begin in the 1996 model year.

17 The first proposed amendment is the addition of
18 the federal supplemental test. As shown on the left side of
19 this flow diagram, the supplemental test consists primarily
20 of a two-day diurnal plus a moderate-temperature hot soak.

21 Staff is proposing to include this requirement as
22 part of California certification starting in the 1996 model
23 year.

24 Thus, during certification, manufacturers would be
25 required to conduct both the test procedure adopted by the

1 Board in 1990, as shown on the right, and the supplemental
2 test procedure. This is consistent with federal
3 requirements.

4 The supplemental test was proposed by
5 manufacturers in response to the U.S. EPA's concern that
6 during periods of short vehicle operation, the vehicle's
7 evaporative emission control charcoal canister may become
8 saturated and result in the release of excess emissions.
9 This supplemental test necessitates a rapid purge of fuel
10 vapors from the evaporative canister and, therefore,
11 provides added assurance of evaporate emissions control
12 during short trips.

13 The standards proposed for the supplemental test
14 are identical to the standards adopted by the U.S. EPA.
15 These supplemental standards are proposed as a means to
16 ensure adequate evaporative canister purge without
17 increasing the stringency of the test. Thus, no new
18 technology or vehicle software (sic) is needed.

19 Staff proposes to require complete medium-duty
20 vehicles from 8,501 to 14,000 pounds gross vehicle weight to
21 be certified on the enhanced evaporative emission test
22 procedures.

23 This vehicle class was originally exempted from
24 the enhanced evaporative emissions regulations adopted in
25 1990.

1 Vehicles in this category include delivery trucks,
2 UPS trucks, ambulances, and the Federal Express truck shown
3 here.

4 The staff proposes that this medium-duty vehicle
5 class comply with the enhanced test procedures beginning in
6 the 1996 model year to be consistent with federal
7 requirements.

8 However, because of the reduced leadtime,
9 manufacturers would have difficulty developing evaporative
10 emission control technology which would meet the enhanced
11 test procedure requirements without affecting the low-
12 emission vehicle exhaust performance.

13 Therefore, staff is proposing the less stringent
14 federal three-day diurnal plus hot soak standard of 3 grams
15 per test instead of the 2 grams per test, which is
16 consistent with other vehicle classes. Staff is not
17 proposing any changes to the 0.05 grams per mile running
18 loss standard.

19 As a result of the U.S. EPA's rulemaking, staff is
20 also proposing technical amendments to harmonize the
21 California test procedures with the federal test procedures.
22 These technical amendments will afford a common set of
23 procedures for manufacturers which would satisfy both the
24 California and federal requirements.

25 There are numerous technical amendments which will

1 improve the effectiveness, practicality, and clarity of the
2 test procedures. They are also intended to improve the
3 consistency between the California and federal requirements.

4 Examples of these amendments include specifying a
5 transition procedure for transporting the test vehicle
6 between enclosures and establishing air circulation criteria
7 in the testing enclosures.

8 Manufacturers and the U.S. EPA have generally
9 expressed support for these amendments. A detailed listing
10 of all of these amendments is contained in the staff report.

11 Staff is also proposing minor technical amendments
12 specific to the California test procedures. These
13 amendments will allow for improved testing in terms of
14 efficiency, clarity, and practicality.

15 The scope of these amendments is very broad.
16 These amendments include minor improvements specific to the
17 ARB regulations, increased flexibility to the implementation
18 schedule and certification process, and clarification of the
19 testing requirements.

20 Examples of these amendments include specifying
21 the useful life of incomplete medium-duty vehicles and
22 defining the criteria required for the carryover of 1995
23 model year certification data. A complete list of these
24 modifications is provided in the staff report.

25 In addition to the amendments previously

1 discussed, staff is also proposing other changes as a result
2 of recent discussions with manufacturers following the
3 publication of the staff's proposal. Copies are available
4 to the audience on the back table.

5 If approved, these changes will be properly
6 noticed for 15 days following the hearing.

7 Staff proposes to relax the three-day diurnal plus
8 hot soak standard for medium-duty vehicles from 6,001 to
9 8500 pounds gross vehicle weight rating with a nominal fuel
10 tank capacity of at least 30 gallons from the present
11 standard of 2.0 grams per test to 2.5 grams per test.

12 The larger fuel tanks will tend to have greater
13 vapor generation as compared to their smaller-volume
14 counterparts. Data have recently been made available to
15 staff indicating a need to relax the standard to be
16 consistent with federal requirements.

17 Staff proposes to also modify some technical
18 requirements related to the certification process and test
19 conditions. The complete list of these modifications is
20 described in the handout.

21 Meetings with manufacturers and written comments
22 from industry have provided productive feedback on the
23 proposed amendments and on the adopted enhanced procedures.

24 Manufacturers and the U.S. EPA have expressed
25 their support of these amendments and, as discussed earlier,

1 many technical revisions based on their comments have
2 already been incorporated.

3 By requiring complete medium-duty vehicles from
4 8,501 to 14,000 pounds gross vehicle weight to meet the
5 enhanced test procedures, there is an emissions benefit of 4
6 tons of hydrocarbons per day statewide by the year 2010.

7 Staff's proposal to change the three-day diurnal
8 plus hot soak standard from 2.0 grams per test to 2.5 grams
9 per test for light medium-duty vehicles with large fuel
10 tanks will result in an emissions increase of less than one
11 ton of hydrocarbons per day statewide by the year 2010.

12 The emissions benefit of the other amendments is
13 negligible, since these amendments are primarily testing
14 improvements or are consistent with federally mandated
15 requirements.

16 The net additional emissions benefit of the
17 proposed amendments will be at least three tons of
18 hydrocarbons per day statewide by the year 2010.

19 The cost associated with implementing the new
20 certification requirements for complete medium-duty vehicles
21 from 8,501 to 14,000 pounds gross vehicle weight is \$11 per
22 vehicle based on cost estimates made by the U.S. EPA.

23 The cost-effectiveness is 17 cents per pound of
24 hydrocarbons reduced. The cost associated with the other
25 amendments for testing improvements and alignment with the

1 U.S. EPA is negligible.

2 In summary, staff recommends that the Board adopt
3 and phase in the supplemental test and test procedures (sic)
4 beginning in the 1995 model year, to ensure that evaporative
5 emissions are controlled during short vehicle operation.

6 Staff also recommends that the enhanced
7 evaporative emission testing procedures be applicable to all
8 vehicle classes, including complete medium-duty vehicles
9 from 8,501 to 14,000 pounds gross vehicle weight.

10 Further, staff recommends that the Board approve
11 other technical amendments which align with federal
12 procedures or improve the practicality and effectiveness in
13 conducting the test procedures.

14 Thank you. This concludes my presentation.

15 Staff will be happy to answer any questions you
16 may have at this time.

17 CHAIRWOMAN SCHAFFER: Thank you, Ms. Kwan. Are
18 there any questions from the Board members?

19 Yes, Mr. Lagarias.

20 MR. LAGARIAS: Ms. Kwan, the three tons per day
21 that you expect to have reduced hydrocarbon emissions by the
22 year 2010, that's only for adding the 8,000 to 14,000 pound
23 vehicles to this regulation; is that correct?

24 MS. KWAN: The emissions benefits from adding the
25 complete medium-duty vehicles, 8,501 to 14,000 pounds, is

1 four tons per day. There is a one-ton per day increase from
2 changing the standard of the light medium-duty vehicles with
3 large fuel tanks from 2.0 to 2.5.

4 MR. LAGARIAS: So, it's plus 4 minus -- or minus 4
5 plus 1.

6 MS. KWAN: That's correct.

7 MR. LAGARIAS: And you forecast to the year 2010.
8 That's 16 years from now. And assuming this goes into
9 effect in '95 or '96, you expect the fleet turnover in this
10 class of vehicle to be about 14 years?

11 MS. KWAN: The useful life projected for these
12 vehicles is 12 years.

13 MR. LAGARIAS: Thank you.

14 CHAIRWOMAN SCHAFER: Would a staff member like to
15 address some of the benefits associated with harmonizing our
16 standards with EPA in terms of cost to the manufacturers?

17 I assume that by simplifying such procedures, test
18 procedures, there are some benefits in terms of doing
19 business.

20 MR. CARTER: Yes. Well, I think it's difficult to
21 quantify the exact amount of money that they would, per se,
22 save. But, surely, you're right in the sense that it will
23 save them time and money, because they would not have to do
24 two separate procedures. They would not have to buy extra
25 equipment, for example, if our requirements were different

1 and they required different equipment -- different
2 procedures rather.

3 But, yes, what you're saying is true, in the sense
4 that it will save manufacturers money, and time, and
5 resources.

6 CHAIRWOMAN SCHAFFER: Okay. Are there any more
7 questions from the Board members at this time?

8 If not, I'd like to now proceed with the public
9 testimony portion of today's hearing. And I understand that
10 there are members of the public who would like to make a
11 presentation to the Board.

12 The first person who has identified himself to do
13 so is Marcel Halberstadt with the American Automobile
14 Manufacturers Association.

15 Mr. Halberstadt, please come forward. Good
16 morning, welcome to the California Air Resources Board.

17 MR. HALBERSTADT: Good morning. Thank you,
18 Chairwoman Schafer and members of the panel.

19 My name is Marcel Halberstadt, and I'm speaking on
20 behalf of the American Automobile Manufacturers Association.

21 AAMA is a trade association representing Chrysler,
22 Ford, and General Motors, the domestic manufacturers of
23 passenger cars and trucks.

24 At this time, on behalf of the association, I
25 would also like to congratulate the new members of the Board

1 on their appointments, and express our hope that we can work
2 together -- industry and the Board -- productively to
3 achieve California's air quality goals expeditiously.

4 I have a relatively brief statement to make
5 regarding the changes the Board is considering to the rules
6 for enhanced control of evaporative emissions from motor
7 vehicles at this time.

8 AAMA member companies believe that the improved
9 evaporative emission control systems that will be required
10 on motor vehicles by this rulemaking are among the most
11 cost-effective opportunities for mobile source VOC
12 reductions during the summer ozone season.

13 We would like to commend the efforts undertaken by
14 the staff to revise these rules to eliminate the many
15 detailed differences that existed between earlier versions
16 and the federal rules that were adopted by the U.S.
17 Environmental Protection Agency in March, 1993, as you just
18 heard presented by your staff.

19 These changes will help manufacturers to deliver
20 vehicles that dramatically improve evaporative emissions
21 performance at the least cost to their customers.

22 AAMA members have been working closely with the
23 staff throughout the past year to improve the enhanced
24 evaporative emission test procedures which were originally
25 adopted by the Board in 1990.

1 As you're aware, these procedures incorporated a
2 significant number of new equipment and measurement
3 technologies which are used to execute a very complex
4 testing process taking over five days to complete.

5 In the time since these rules were originally
6 adopted, manufacturers have made significant progress in
7 developing the equipment and processes to conduct these
8 tests as well as in obtaining practical experience at
9 executing them.

10 AAMA member companies have committed significant
11 resources to resolving these technical issues that remain.
12 We've been working with the staffs of both the California
13 Air Resources Board and the U.S. Environmental Protection
14 Agency through the American Industry-Government Emissions
15 Research forum to identify and complete projects which will
16 improve the repeatability and precision of the measurement
17 procedures.

18 Manufacturers believe that the testing technology
19 specifications, requirements, and processes are in some
20 areas problematic and still actively evolving. And we have
21 not yet identified a comprehensive set of the best
22 practices.

23 In the interest of providing a workable framework
24 for operating in the next few years, AAMA requests that the
25 Board adopt specific language providing adequate discretion

1 for the Executive Officer in interpreting the testing
2 requirements.

3 Attached with the written copy of this testimony
4 is proposed regulatory language. We believe it is critical
5 to provide flexibility that recognizes the underlying
6 intent, not just the letter of the regulation, to assure
7 that a smooth transition is made between the technical staff
8 and certification groups.

9 We believe that providing the Executive Officer
10 the flexibility to allow revised and improved testing
11 methodologies is also essential to the timely approval of
12 manufacturer certification plans and test data during the
13 phase-in of these control systems.

14 As the remaining technical issues are resolved, it
15 may be appropriate to consider a final set of revisions to
16 the regulations at some later date.

17 The attached proposed regulatory language would
18 allow this to be done at the Executive Officer's discretion.

19 One objection of the test procedure changes -- I'm
20 sorry. One objective of the test procedure changes has been
21 to align California's evaporative testing procedures with
22 the U.S. EPA's procedures.

23 Many changes that are being proposed by staff to
24 help accomplish this objective -- I'm sorry -- Many changes
25 that are being proposed by the staff do help to accomplish

1 this objective, although some differences still remain.

2 After today, we will have two almost identical
3 test procedures. But manufacturers must still develop and
4 certify to two separate and very lengthy procedures.

5 Industry, the U.S. EPA, and the California Air
6 Resources Board need to continue to work together to
7 establish one common procedure. Also, as the prior record
8 indicates, AAMA still remains concerned about the
9 methodology for measuring running loss emissions.

10 In summary, we appreciate the opportunity to work
11 cooperatively with the staff to improve the enhanced
12 evaporative emission rules. We look forward to continuing
13 this cooperative effort to resolve the remaining challenges
14 in improving the testing technology and processes, and to
15 implementing the advanced evaporative emission control
16 technology on the vehicles sold in California.

17 This completes my remarks. I will be happy to try
18 and answer your questions, and would like to call on one of
19 my colleagues representing the AAMA Evaporative Emissions
20 Panel, if there are questions that require his assistance.

21 Thank you.

22 CHAIRWOMAN SCHAFFER: Thank you very much, Mr.
23 Halberstadt.

24 First, I'd like to ask if there are any questions
25 from members of the Board. Yes. Mr. Parnell.

1 MR. PARNELL: I wonder if you could help
2 articulate some of the inconsistencies that you say are
3 problematic between the new proposed regulations that the
4 State will have and the federal regulations, and why -- how
5 problematic is that for the industry?

6 MR. HALBERSTADT: Okay. To help me answer that
7 question, I would like to call on Mr. Kevin Cullen, who is
8 representing our Evaporative Emissions Panel.

9 MR. CULLEN: Yeah. I guess to maybe clarify your
10 question, we're not left in a situation where there are
11 inconsistencies in the two procedures that are problematic.
12 The primary remaining inconsistencies are the temperature
13 and volatility specifications that go with the procedure.

14 We think there may be opportunities down the road
15 to -- to understand that those are relatively equivalent on
16 balance.

17 The problematic areas are really just in the state
18 of evolution of the procedures and the technology. We have
19 spent four to five years developing the individual
20 components of the test. And that has been difficult, but
21 we've arrived at a pretty mature state.

22 Where we're at now, though, is when you string
23 those elements together into that five-day process, the
24 intersections between the various elements of the procedure
25 are difficult to execute and execute consistently and

1 successfully.

2 Where we're asking for flexibility is in having
3 the Executive Officer be able to look at particular tests we
4 have run; understand that, given the complexity and state of
5 evolution of the procedures, that, when the intent is met
6 and the performance of the system is demonstrated, that
7 small technical deviations from the detailed specifications
8 can be allowed. That's essentially what we're looking for
9 in the way of flexibility.

10 MR. PARNELL: Do you feel you have that
11 flexibility, or are you looking for that flexibility?

12 MR. CULLEN: I think that it can be argued that
13 there are a fair number of places in the procedures, as they
14 currently stand, where that flexibility is explicitly
15 provided.

16 I think the changes that will be adopted today
17 improve that flexibility to a degree. We feel that having a
18 specific marker in the regulations that give the Executive
19 Officer fairly broad authority would help us to resolve
20 issues. And the problem we face is that these problems
21 typically come up at the eleventh hour in the certification
22 process when a timely resolution is of the essence.

23 So, it more is an insurance policy, I guess you
24 might say, than something that we can point to today as
25 having specific, concrete issues to deal with.

1 MR. PARNELL: Thank you.

2 DR. BOSTON: Madam Chair?

3 CHAIRWOMAN SCHAFER: Yes, Dr. Boston.

4 DR. BOSTON: How do you decide that there's a
5 close equation between the federal fuel and the California
6 fuel, which has a lower volatility, and the temperature
7 requirements of the two tests being slightly different?
8 It's stated that should just about equate out to being equal
9 because of the higher volatility of the federal fuel and the
10 lower volatility of the California fuel.

11 How can you determine that?

12 MR. CULLEN: Well, you can analytically look at
13 the vapor generation of the fuel.

14 We have mathematical models that allow us to
15 predict fuel vapor generation and how the systems are
16 formed. And those models tell us that the combined effects
17 of the temperatures and volatilities of the two tests are
18 roughly equivalent.

19 We're starting to get test data and getting --
20 accumulating additional volumes of test data that support
21 that mathematical analysis and say, indeed, that when you
22 look at a vehicle configured to pass one of the tests,
23 you'll see a pretty equivalent performance with the other
24 tests with the other volatilities and temperatures.

25 I think our longer-range hope is that, as we

1 accumulate experience, we can come to the conclusion that
2 one of the two sets of conditions is consistently more
3 stringent, and then use that one in the out years to do most
4 of the development and certification.

5 DR. BOSTON: And you're asking for flexibility
6 from the Executive Officer to change procedures if it turns
7 out that that's not the case?

8 MR. CULLEN: No, no. That issue, the equivalence
9 between the two procedures, is a long-term issue that we
10 think needs some time to run. And whether it's appropriate
11 at that point to come back to the Board or not, I guess, is
12 not for me to say.

13 The flexibility we're looking for in the short
14 term is in the day-to-day execution of the tests as we go
15 through certification and phase-in of the vehicles.
16 Because, frankly, the state we're in -- what's in the
17 procedures is all of our best understanding of the way to do
18 this, but it's still based on a relatively small experience
19 base.

20 DR. BOSTON: Okay. Thank you.

21 CHAIRWOMAN SCHAFFER: Are there any more questions
22 from Board members?

23 MR. BOYD: Madam Chairwoman, could I make a
24 comment, since I'm the subject of some of this
25 recommendation?

1 CHAIRWOMAN SCHAFER: Yes. I was going to give you
2 an opportunity after the -- after both witnesses, but this
3 is just as appropriate. Go ahead, Jim.

4 MR. BOYD: Well, I'd like to point out for the
5 record, this was an unsolicited proposal on my part --

6 (Laughter.)

7 MR. BOYD: -- seeking more authority and power.
8 And I'm flattered the industry thinks the staff and we can
9 work together that way. I would just -- my reaction to this
10 is that, in all honesty and candor, I do think the Executive
11 Officer has quite a bit of discretion and latitude now. And
12 so, I'm not so sure I'm recommending that this be done. I
13 think there's a good line -- albeit a fine line -- between
14 those items that I bring to the Board and those items that I
15 handle myself.

16 I think my counsel would, probably -- hopefully
17 indicate that there is a fair amount of discretion. And I
18 would rather, frankly, accumulate some experience with this
19 over a period of time, and then ascertain whether or not it
20 really is so minuscule or so procedural and minor that it
21 would deserve seeking additional authority from the Board.

22 But I don't think we have enough -- I'm not
23 necessarily comfortable to know and am concerned that there
24 may be some things that really belong being brought to the
25 Board.

1 CHAIRWOMAN SCHAFER: Let me ask a question of
2 counsel. Mr. Kenny, as the staff has drafted this
3 regulation and as the regulation, which it amends, currently
4 exists, are you at this time prepared to advise the Board
5 whether the flexibility that is sought and the proposals
6 made in the language from the witness are needed in order to
7 afford the Executive Officer the opportunity to step in at
8 the eleventh hour if necessary?

9 MR. KENNY: We do have concerns about whether or
10 not this flexibility is needed. But let me refer to Mr.
11 Jennings to give you kind of a technical response or a
12 detailed response as to why we feel that way.

13 MR. JENNINGS: I think that, as staff has
14 indicated, there are a number of places in the test
15 procedure --

16 SUPERVISOR BILBRAY: Is your mike on? It works a
17 little better that way.

18 MR. JENNINGS: I think, as the staff has
19 indicated, there are a number of places in the test
20 procedure amendments, and particularly in the modifications
21 being proposed today, where some additional discretion would
22 be given to the Executive Officer in those areas where we
23 believe it is most appropriate to make some modifications
24 down the road perhaps.

25 I have some concern with the language being

1 proposed by AAMA today, particularly the one that would
2 authorize a modification whenever a significant technical
3 issue exists with the test procedures. I think there is
4 some question that OAL might find that that is unclear.
5 And, as you know, we have to get a waiver of preemption from
6 EPA. That waiver can be denied if our standards are not as
7 protective of the health and welfare as the federal
8 standards.

9 EPA might have a concern that allowing a change
10 whenever there is a, quote, "technical issue," end quote,
11 could allow our regulations to be less protective than the
12 federal ones.

13 CHAIRWOMAN SCHAFER: Is there a way of
14 characterizing the kinds of flexibility that the Executive
15 Officer currently has under our current regulations and
16 under the staff's proposal? Can they be applied to any of
17 the scenarios that might come up as the test procedure is
18 executed?

19 MR. JENNINGS: I'm going to defer to staff that's
20 most intimately familiar with the specifics of the
21 regulation.

22 MR. CARTER: Well, part of the 15-day changes,
23 specifically to allow the Executive Officer more authority
24 to change things if problems arise -- for example, the
25 Executive Officer would have the authority to change the

1 carry-across specifications that are currently in the regs;
2 also, the multiple canister loading requirements that are in
3 the regulations.

4 And, also -- and this is a critical one -- the
5 running loss road profile correction factors that are
6 currently in the regs. Also, I took the time to mark a lot
7 of other places that are already in the regulations that
8 allow the Executive Officer authority to change things. And
9 I don't know if you want me to go through all these now, but
10 they -- for example, they allow the Executive Officer to
11 approve alternative equipment for the diurnal enclosure, for
12 the running loss enclosure, again for the profile
13 generation.

14 Another one, an alternative running loss test
15 procedure in general. So, again, there's a lot of
16 flexibility already in the regulations for the Executive
17 Officer.

18 CHAIRWOMAN SCHAFFER: All right. Now, let me just
19 ask the witness, what kind of scenario or worst case do you
20 expect to confront for which the current or proposed staff
21 language does not provide the Executive Officer the
22 authority to make a modification?

23 MR. CULLEN: I think, as a way of generalizing it,
24 what we have found is, as we have gone to the state we have
25 reached today, is that, as we apply the requirements and

1 procedures to the broader line of products as we go through
2 the phase-in, each knew class or type of vehicle can
3 introduce specific kinds of quirks or problems in going
4 through the test.

5 And, again, to go back to, I think, what I've
6 said, this is more -- the experience to date says that we're
7 done yet, not necessarily that we have absolute problems we
8 know of today that we're facing, but that the state we're at
9 today is such that we can predict we're going to hit
10 difficulties as we try to apply these to the different,
11 broader classes of vehicles.

12 CHAIRWOMAN SCHAFFER: All right. Thank you. Ms.
13 Edgerton, you had a question?

14 MS. EDGERTON: Yes. Again, it's your -- what you
15 are seeking is -- I should turn this on (speaking of
16 microphone).

17 What you're seeking is discretion, increased
18 discretion for the Executive Officer; is that correct?

19 MR. CULLEN: Yes, I think so. I think sometimes
20 that, when we encounter a problem, the staff looks at the
21 specific language and says that, well, that's the language
22 and it really doesn't give me any room to vary. And in some
23 cases, we're at a stage of discovering that the language
24 doesn't comprehend reality, and that what we're trying won't
25 work the way the language anticipates.

1 So, "discretion" would be the right term, yes.

2 MS. EDGERTON: Thank you. As I read it, I guess
3 what I would -- I would have to conclude is that your
4 proposed language doesn't accomplish what you're seeking, in
5 that it actually removes the discretion from the Executive
6 Officer, as I understand it, and says that the Executive
7 Officer "shall" make changes -- alternate procedures if the
8 manufacturer provides evidence -- any evidence, I guess --
9 of a significant technical issue, or -- "or," not even
10 "and," -- or if you provide evidence that the effectiveness
11 of the evaporative emission system is not diminished.

12 So, I guess -- I don't know if this is -- would be
13 a suggestion, but it seems to me that if it is discretion
14 which you'd like the Executive Officer to have, the way it
15 should read is, "The Executive Officer shall have the
16 discretionary authority to approve alternate procedures if
17 in his or her opinion the manufacturer provides clear and
18 convincing evidence that a significant technical issue
19 exists with the adopted procedures then in force, and the
20 manufacturer provides clear and convincing evidence that the
21 effectiveness of the evaporative emission system is in no
22 respect diminished."

23 It seems that those -- those are just thoughts
24 that I had listening to what you're seeking. Because what
25 you've described seems reasonable, because no one can see

1 the future. No one knows how these things work.

2 So, I guess I'd suggest that maybe the -- as Mr.
3 Jennings says, the problem may be in the -- the devil's in
4 the details. Maybe the language could better meet your
5 needs by giving this discretionary authority to -- would you
6 like that?

7 MR. CULLEN: Your point's well taken. I don't
8 think we have a problem with that.

9 MS. EDGERTON: Thank you.

10 CHAIRWOMAN SCHAFFER: Mr. Jennings.

11 MR. JENNINGS: It might be useful to compare our
12 regulatory provisions with those of the U.S. EPA. EPA has a
13 provision saying that, if the test cannot be conducted as
14 specified, the EPA Administrator can make approved changes.
15 That applies to California as well. The Executive Officer
16 can make those changes.

17 In all other respects, my understanding is that
18 the Executive Officer is given substantially more discretion
19 in a variety of areas than is given the EPA Administrator
20 under the EPA regulations.

21 CHAIRWOMAN SCHAFFER: Mr. Kenny, did you have
22 further comment?

23 MR. KENNY: No, I have no comment.

24 CHAIRWOMAN SCHAFFER: Mr. Boyd?

25 MR. BOYD: Well, again, I'd just reiterate. After

1 hearing all of this, in all sincerity, I don't think it's
2 necessary. I'd rather see, if something develops in the
3 future -- you know, I'm comfortable with the large amount of
4 discretion I have now, and I'd rather, you know, keep the
5 line fine between what the Board is supposed to do as policy
6 and exercising that discretion.

7 I'm a little bit concerned about being overwhelmed
8 with suggestions and issues here. And I think we can handle
9 the stuff that fits the delegations that exist. But, as I
10 said, I'm comfortable with them as they are. And I'd rather
11 let's see if, indeed, we have to come back to the Board and
12 say, "Okay. We've learned from experience that we need to
13 fine tune this a little bit."

14 CHAIRWOMAN SCHAFFER: Okay. Thank you. Supervisor
15 Wieder.

16 SUPERVISOR WIEDER: Mr. Boyd, my first reaction
17 listening to -- am I on? "Down" means mike is on.

18 (Thereupon, Mr. Lagarias adjusted the
19 microphone button.)

20 SUPERVISOR WIEDER: Thank you, Jack.

21 Mr. Boyd, after listening to the comments made on
22 this subject, my conclusion is, can it hurt? You know. And
23 it's not what is. It's really what is perceived. And,
24 unfortunately, perceptions are more real than facts.

25 So, I can't see how it would really hurt, except

1 maybe put more responsibility on you for that discretion.

2 MR. BOYD: That's a good point.

3 (Laughter.)

4 MR. BOYD: I mean I think that's a judgment the
5 Board has to make, does it hurt or not. That would be your
6 opinion. I'll let it go at that.

7 CHAIRWOMAN SCHAFFER: Are there any other questions
8 by Board members for these witnesses?

9 Ms. Edgerton.

10 MS. EDGERTON: Well, I guess my question now
11 raised about this actually is for the staff, is whether this
12 takes discretion away from the Board by -- you know, if, as
13 originally drafted, that the Executive Officer shall approve
14 alternate procedures, does -- et cetera -- does this put in
15 place a test, an alternate test which would mandate a
16 standard whereby there would be sort of an off -- off, you
17 know, off core resolution of when something needed to be
18 changed.

19 That makes me uncomfortable without more review.
20 I suppose, if there were an effort to -- if there were an
21 interest in actually doing something with this, it would
22 seem to me maybe it should be reconsidered and perhaps a
23 more artful analysis of it.

24 MR. BOYD: I agree with you. And one of the
25 things -- I mean, under the regulation, as passed, and the

1 modifications we have before you today, we're remaining
2 consistent with what I believe is the long historical
3 interpretation of the latitude that the Board and that the
4 Executive Officer have.

5 For instance, the language here about a
6 significant technical issue existing, that's the kind of
7 thing, historically, I have felt is the purview of the
8 Board, not of the Executive Officer. And that's the kind of
9 decision I tend to make; that, if we do have a significant
10 technical issue, that's your role.

11 So, I would be extremely uncomfortable with their
12 language for that very reason.

13 And, secondly, again, your suggested modification,
14 although meeting all the needs, I believe goes further than
15 I think is needed at the present time.

16 SUPERVISOR BILBRAY: Madam Chair?

17 CHAIRWOMAN SCHAFFER: Yes, Supervisor Bilbray.

18 SUPERVISOR BILBRAY: Well, I think, not to play
19 Solomon with this item, but to just state the facts. The
20 fact is it's not either/or. It's both. The fact is, if
21 there is a major problem, the staff has the ability to
22 identify it and bring it before the Board, and have us
23 address it at that time and make modifications.

24 And Mr. Boyd has done this time and time again.
25 There may be a frustration by the industry that Mr. Boyd and

1 his staff may hide behind a reg saying, "Sorry, but this is
2 what we have to live with." But I think there has been time
3 and time again an example that staff, if they think a
4 regulation doesn't reflect the intent or the reality,
5 they've brought that difficulty back to this Board and said,
6 "We think there needs to be some fine-tuning there."

7 I guess the encouragement, obviously, is to make
8 sure staff, working with the industry, reflects the intent
9 and not fall on the letter as much as the spirit. And if
10 there needs to be an interpretation of what the spirit was,
11 staff brings it back to us and bounces it off the policy
12 board, and we give direction.

13 So, I think there is a way to function here.
14 We're not asking staff to be robots or -- most of the time.

15 (Laughter.)

16 SUPERVISOR BILBRAY: And we do expect them to use
17 their initiative, but we also expect them to touch base with
18 us on major issues. And they have.

19 And so, leaving it at that, it's really how the
20 policy is executed rather than the technical interpretation
21 of the policy.

22 CHAIRWOMAN SCHAFFER: Are there any other questions
23 by Board members for the staff or the witnesses?

24 If not, I'd like to invite the witnesses, if
25 there's any other comment you'd like to make; otherwise, I

1 want to thank you for your testimony this morning.

2 MR. CULLEN: Yes, just one, and that's that we've
3 belabored this point. I don't want to leave with the
4 impression that there's a real problem here. I want to
5 leave a clear understanding that we've worked very
6 cooperatively with the staff.

7 We've appreciated their work with us, and the
8 relationship's very good.

9 CHAIRWOMAN SCHAFFER: Very good.

10 MR. HALBERSTADT: And we thank you for your
11 consideration of our concerns.

12 CHAIRWOMAN SCHAFFER: Thank you very much, Mr.
13 Halberstadt and Mr. Cullen.

14 The next individual who's asked for an opportunity
15 to be heard this morning is Mr. Dennis Johnston with the
16 Association of International Automotive Manufacturers --
17 Automobile Manufacturers. Excuse me.

18 Mr. Johnston, welcome to the Air Resources Board.
19 Good morning.

20 MR. JOHNSTON: Thank you. Good morning. My name
21 is Dennis Johnston. And in addition to my responsibilities
22 with the Rover Group, I am also the Chairman of the
23 Technical Committee of the Association of International
24 Automobile Manufacturers, which goes by the moniker of AIAM.

25 And it's on their behalf that I'm speaking today.

1 AIAM is a nonprofit trade association that
2 represents U.S. importers, distributors, and manufacturers
3 of passenger cars and light trucks produced both here and
4 abroad.

5 Nearly half of these vehicles are manufactured in
6 new American plants established by AIAM companies in the
7 last decade. We welcome the opportunity to offer a brief
8 statement on the proposed amendments before the Board today.

9 Our members worked closely with the EPA in the
10 development of the agency's test procedure. While not in
11 total agreement with each and every aspect of EPA's
12 rulemaking, we do endorse the concept of having essentially
13 one test procedure apply nationwide to reduce complexity in
14 the design and production of motor vehicles for sale in the
15 U.S.

16 For that reason, we support the staff's amendments
17 to commonize the ARB procedure with that adopted by EPA.
18 Moreover, we appreciate the staff's willingness to work with
19 manufacturers to allow early use of the 1996 model year
20 procedures in 1995.

21 We also would like to thank the staff for allowing
22 carryover of data from the 1995 model year procedure for
23 1996 and later years in response to AIAM's request last
24 year. This will allow those manufacturers who have already
25 designed vehicles to the 1995 CARB procedure maximum

1 flexibility in meeting these requirements.

2 There is one other thing I'd like to say that,
3 unfortunately, has only occurred to me this morning driving
4 in. So, I beg the staff's pardon here. Virtually every
5 issue that the industry has had with the ARB has been
6 resolved in these changes to the rule here.

7 There was one aspect which wasn't, and I
8 understand that the staff does have a legitimate, I believe,
9 approach to this, and that is the combination of the
10 phase-in.

11 The EPA requirements phase in the rules allowing
12 passenger cars, light trucks, medium-duty vehicles, which
13 are heavy -- light-duty trucks (sic), all to be amalgamated
14 in one. The ARB has determined that -- while I don't have
15 direct data, my gut feeling is they're probably correct --
16 the emissions that are given off by vehicles with bigger
17 fuel tanks tend to be larger, and that's why they wanted to
18 have separate phase-ins for cars as to trucks.

19 One possible alternative has occurred to me that
20 if there was -- and I don't have any numbers with me to
21 propose here -- but if there was an alternate phase-in, say
22 15 percent totally combined in '95, as an alternative to the
23 10 percent of each, that may allow a manufacturer who may
24 have virtually 40 percent of their passenger car fleet
25 brought in because they've picked a high-profile vehicle,

1 high-selling vehicle, to phase in.

2 Give them some opportunity to use that to mitigate
3 the extra emissions that may come from trucks if they
4 haven't yet worked out all the ins and outs of the design in
5 order to provide the very stringent requirements that are
6 part of this rule.

7 So, I would like to offer that. And, again, with
8 no numbers here, I would leave that essentially to the
9 staff's good views as to what a number would be if this is
10 an acceptable alternative. I just offer that as a possible
11 way around this virtually last item that was -- still
12 remains a difference between EPA's and ARB's final
13 procedures.

14 With that, I'd like to thank you for this
15 opportunity and, of course, reiterate the views of AAMA, to
16 welcome our chance to work with the new members of the Board
17 on current and future emission rules in California.

18 Thank you.

19 CHAIRWOMAN SCHAFFER: Thank you very much, Mr.
20 Johnston. First, I'd like to ask Board members if they have
21 questions for the witness.

22 MR. LAGARIAS: Just one.

23 CHAIRWOMAN SCHAFFER: Yes, Mr. Lagarias.

24 MR. LAGARIAS: Mr. Kardos, is it true that Rover
25 is now going to become part of BMW?

1 MR. JOHNSTON: Well, I'm subbing in for Mr. Kardos
2 today. I'm Dennis Johnston. It looks like there's every
3 likelihood that that may happen.

4 MR. LAGARIAS: All right. I'm sorry. Is it
5 Johnston?

6 MR. JOHNSTON: Johnston.

7 CHAIRWOMAN SCHAFFER: Johnston.

8 SUPERVISOR WIEDER: Johnston.

9 MR. LAGARIAS: Beg your pardon. I was reading
10 your prepared text.

11 MR. JOHNSTON: Yes.

12 MR. LAGARIAS: The name was --

13 MR. JOHNSTON: I almost read it off that way
14 myself.

15 (Laughter.)

16 MR. JOHNSTON: There is every chance that that
17 actually may happen, yes.

18 MR. LAGARIAS: Thank you.

19 CHAIRWOMAN SCHAFFER: Are there any other questions
20 from Board members for the witness? Supervisor Vagim?

21 SUPERVISOR VAGIM: Madam Chair, I would like to
22 hear a response of the percentage --

23 CHAIRWOMAN SCHAFFER: Yes. I'm going to ask the
24 staff to address the comment that has been made here.

25 Mr. Cackette?

1 MR. CACKETTE: Well, I think, having not had a
2 chance to look at the implications of this are, and given
3 that it could be somewhat complicated, how we would
4 structure the suggestion, I find myself at a loss to offer
5 the Board any quantification of what the impact would be.

6 And it's kind of hard to do that at the last
7 second like this.

8 CHAIRWOMAN SCHAFER: I understand. Is this like a
9 bubbling concept, is that the notion -- the rubric under
10 which this notion would fall?

11 Mr. Johnston?

12 MR. JOHNSTON: I'm not -- I wouldn't necessarily
13 address it as a bubble as opposed to the phase-in. I do
14 understand the difference. And, again, I do sincerely
15 apologize for this. It is something that only came to me
16 today.

17 As you have pointed out, this is probably the last
18 opportunity the Board's going to have for quite a while to
19 address evap changes, which is why I even hesitatingly bring
20 it up at all.

21 But I think it is to get over the -- I think the
22 major concern with -- that I believe the ARB staff has had
23 with using EPA's overall phase-in, is that the emissions
24 that may come out of vehicles with bigger fuel tanks may be
25 greater than that out of passenger cars. And that way, a 10

1 percent that was only on passenger cars and didn't affect
2 vehicles with bigger fuel tanks may not give you the same
3 overall emissions benefit.

4 So, I guess in that respect, it could be somewhat
5 of a bubbling proposal. But I think it's -- to address that
6 concern in the phase-in, the staff has already decided --

7 MR. CACKETTE: There's two things that could
8 happen. One is it could give more -- as I understand it at
9 least, and tell me, please, if I'm not capturing the spirit
10 of it, is it could provide more flexibility. A manufacturer
11 could choose to do three car lines and not do a truck line,
12 and still come up with the same emission reductions at each
13 phase of the phase-in.

14 However, the other scenario is a manufacturer who
15 doesn't have a choice, has one car line that happens to
16 represent 40 percent of their sales; also has a truck line.
17 Under the current regs, has to do both. And, admittedly,
18 that creates a greater burden on that manufacturer. But
19 that's sort of the baseline case.

20 And under the suggestion, would now be able to --
21 because they're certifying the one -- the exceeding on the
22 car side, would not have to do the truck.

23 If you look at what's on the table versus the
24 change, you could argue that that would be a relaxation in
25 the requirements. And I don't know which way it would go,

1 because we'd have to look at all the different product
2 lines, what the mixes are, and all that kind of thing to try
3 to figure out, you know, what the likely impact is.

4 That's why I was resisting trying to give you some
5 feel, because I just don't know what it would be, whether
6 this is just pure flexibility or whether this might have
7 some unquantifiable at the moment impact one way or the
8 other on emission reductions.

9 MR. LAGARIAS: Well, the cars are 2.0 grams and
10 the trucks are 2.5 grams, the standard, the regulation.
11 And, theoretically, it's possible, if you brought in --
12 instead of 10 percent of your line, you brought in 20
13 percent meeting the 2.0 standard for cars, you'd get a
14 greater, faster reduction than you would if -- faster than
15 the regulation calls for. And, therefore, the suggestion is
16 that maybe we can take -- they could take advantage of that
17 in their truck line.

18 I don't think we have enough information to take
19 action on that --

20 MR. CACKETTE: I don't either.

21 MR. LAGARIAS: -- at this time. But the important
22 thing, I think, to keep in mind is, as we bring in the LEVs
23 and the ULEV vehicles, evaporative emissions become much
24 more important in terms of the total emissions from motor
25 vehicles.

1 And I think that there will be continuing
2 examination of evaporative emissions over the years as being
3 a major continuing emission source.

4 So, this, I think, is just -- it's what we know
5 today, but it may be an area that we would seek continual
6 reduction in in the future. Does that frighten you?

7 (Laughter.)

8 MR. JOHNSTON: Well, I think, in my gut, feel -- I
9 believe, as Bob Cross says, that we probably -- once we
10 fully implement this procedure, we've done virtually
11 everything we're going to do that's going to reduce
12 evaporative emissions, and for quite a while, I would
13 imagine.

14 One thing I would like to say is that I didn't
15 envision this necessarily as being a manufacturer-specific
16 program that manufacturer A would be 12 percent, B would be
17 15. I would think, since it would strictly be an additional
18 flexibility and that manufacturers could continue to use the
19 phase-in currently on the books, it's something that, maybe
20 in its worst case -- the worst scenario you thought might be
21 available, whether that's a 20 percent phase-in instead of a
22 10 percent in the first year after you do some calculations,
23 that would -- I would think would satisfy me personally
24 anyway. I can't speak, again, on behalf of the industry,
25 because I haven't discussed this with industry at the

1 moment.

2 But I'm just encouraging, if there is any way that
3 they could look at this -- and I guess in response to Mr.
4 Lagarias' inquiry earlier, one of the things that did cause
5 me to think of this this morning was a potential increase in
6 the interaction between BMW and Rover Group.

7 And so, although I haven't discussed it with BMW,
8 that would be one area that I think we could get the
9 aggregate levels down and offer some potential flexibility.

10 MR. LAGARIAS: Well, I think concepts of this type
11 are well worth looking at. And on this particular one, I
12 don't think we have enough information to act on. But in
13 the future, I would certainly look at anything that
14 increases the rate at which we can reduce emissions in the
15 future.

16 CHAIRWOMAN SCHAFER: Are there any other questions
17 from members of the Board for the witness or the staff in
18 association with this testimony?

19 If not, I'd like to thank you, Mr. Johnston, for
20 your appearance here this morning. I appreciate that. At
21 this time, if there are no more public witnesses for
22 presenting testimony here this morning, I'd like the staff
23 to summarize those written comments that the Board has
24 received by individuals who might have been unable to
25 testify in person.

1 MR. BOYD: We have a couple of pieces of testimony
2 staff will summarize.

3 MR. KITOWSKI: There are two comments that we
4 received that have not been supported by oral testimony.
5 One is from the Rover Group requesting that the small volume
6 manufacturer definition that is listed in the low-emission
7 vehicle exhaust regulations be applied to the evaporative
8 emission regulations as well for consistency.

9 Staff agreed with the comment and has included
10 that as part of the 15 -- as part of the supplemental
11 changes that we've proposed.

12 The other comment is from the Engine Manufacturers
13 Association. They requested confirmation that the
14 regulations are not applicable to compressed natural gas
15 fueled vehicles. It was never our intent to apply the
16 regulation to compressed natural gas vehicles as part of the
17 changes. In the proposed changes to the regulations, we
18 explicitly stated that in those regulations.

19 That's it.

20 CHAIRWOMAN SCHAFFER: Very good. Mr. Boyd, does
21 the staff have any further comments on this matter?

22 MR. BOYD: No, Madam Chair, I don't believe we
23 have any further comments. Thank you.

24 CHAIRWOMAN SCHAFFER: Thank you.

25 I'd like now to officially close the record on

1 this agenda item. However, I just want to mention that the
2 record will be reopened when the 15-day notice of public
3 availability is issued.

4 Written or oral comments received after this
5 hearing date, but before the 15-day notice is issued, will
6 not be accepted as part of the official record on this
7 agenda item.

8 When the record is reopened for a 15-day comment
9 period, the public may submit written comments on the
10 proposed changes, which will be considered and responded to
11 in the final statement of reasons for the regulation.

12 Also, at this time, just a reminder to Board
13 members of our policy concerning ex parte communications.
14 While we may communicate off the record with outside persons
15 regarding rulemaking, we must disclose the names of our
16 contacts and the nature of the contacts on the record.

17 This requirement applies specifically to
18 communications which take place after notice of the Board
19 hearings has been published.

20 Are there any communications with Board members
21 that need to be disclosed at this time?

22 Hearing none, you now have a resolution before
23 you. I'd like to take a few moments to allow you to read
24 the resolution before entertaining a motion.

25 SUPERVISOR BILBRAY: Question to staff. Are there

1 any amendments to this resolution?

2 MR. BOYD: No, no amendments.

3 SUPERVISOR BILBRAY: Okay.

4 (Thereupon, the Board members perused
5 Resolution No. 94-7.)

6 CHAIRWOMAN SCHAFER: The Board has before it
7 Resolution No. 94-7, which contains the staff
8 recommendations. Do I have a motion and a second?

9 SUPERVISOR BILBRAY: Madam Chair, you have a
10 motion to adopt Resolution 94-7.

11 CHAIRWOMAN SCHAFER: Thank you, Supervisor
12 Bilbray. Do I have a second?

13 DR. BOSTON: Second.

14 SUPERIOR RIORDAN: I'd like to second the motion.

15 CHAIRWOMAN SCHAFER: Seconded by Dr. Boston and
16 Supervisor Riordan.

17 SUPERIOR RIORDAN: Two seconds.

18 CHAIRWOMAN SCHAFER: Two seconds.

19 Okay. Is there any further Board member
20 discussion on this item and on this proposal? Okay.

21 I'd like to call for a vote on the motion for
22 Resolution 94-7, and ask the Board Secretary to take the
23 roll.

24 MS. HUTCHENS: Bilbray?

25 SUPERVISOR BILBRAY: Aye.

1 MS. HUTCHENS: Boston?
2 DR. BOSTON: Yes.
3 MS. HUTCHENS: Calhoun?
4 Edgerton?
5 MS. EDGERTON: Yes.
6 MS. HUTCHENS: Hilligoss?
7 MAYOR HILLIGOSS: Aye.
8 MS. HUTCHENS: Lagarias?
9 MR. LAGARIAS: Aye.
10 MS. HUTCHENS: Parnell?
11 MR. PARNELL: Yes.
12 MS. HUTCHENS: Riordan?
13 SUPERIOR RIORDAN: Aye.
14 MS. HUTCHENS: Vagim?
15 SUPERVISOR VAGIM: Yes.
16 MS. HUTCHENS: Wieder?
17 SUPERVISOR WIEDER: Yes.
18 MS. HUTCHENS: Chairwoman Schafer?
19 CHAIRWOMAN SCHAFFER: Aye.
20 MS. HUTCHENS: Passes 10-0.
21 CHAIRWOMAN SCHAFFER: Okay. Thank you very much.
22 At this time, I'd like to advise the Board members
23 that the second agenda item the staff expects will take
24 about an hour and 15 minutes.
25 So, we have an option of proceeding with that now