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 Vagim
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

I N D E X

INDEX, continued. . . PAGE

AGENDA ITEMS:

P R O C E E D I N G S

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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

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

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

CHAIRWOMAN SCHAFER: Thank you very much.

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

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

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

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

MR. PARNELL: Thank you.

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

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

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

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

SUPERVISOR VAGIM: Thank you very much.

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

(Thereupon, the oath of office was administered to each of the new members by Chairwoman Schafer.)

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

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

MR. BOYD: Yes.

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

MS. HUTCHENS: Bilbray?

SUPERVISOR BILBRAY: Present.

MS. HUTCHENS: Boston?

DR. BOSTON: Here.

MS. HUTCHENS: Calhoun?

MR. CALHOUN: Here.

MS. HUTCHENS: Edgerton?

MS. EDGERTON: Here.

MS. HUTCHENS: Hilligoss?

MAYOR HILLIGOSS: Here.

MS. HUTCHENS: Lagarias?

MR. LAGARIAS: Present.

MS. HUTCHENS: Parnell?

MR. PARNELL: Here.

MS. HUTCHENS: Riordan?

SUPERIOR RIORDAN: Here.

MS. HUTCHENS: Vagim?

SUPERVISOR VAGIM: Here.

MS. HUTCHENS: Wieder?

SUPERVISOR WIEDER: Here.

MS. HUTCHENS: Chairwoman Schafer.

CHAIRWOMAN SCHAFER: Here.

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

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

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

(Laughter.)

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

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

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

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

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

(Laughter.)

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

CHAIRWOMAN SCHAFER: Very good. Again, welcome aboard.

Mr. Parnell.

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

(Laughter.)

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

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

Thanks for the opportunity.

CHAIRWOMAN SCHAFER: Thank you very much, Mr. Parnell.

Supervisor Vagim.

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

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

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

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

And, again, thank you.

CHAIRWOMAN SCHAFER: Thank you, Supervisor Vagim.

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

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

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

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

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

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

Mr. Boyd, would you please present this item to

the Board.

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

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

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

(Laughter.)

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

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

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

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

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

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

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

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

you some background. Bob?

MR. CROSS: Thank you, Mr. Boyd.

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

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

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

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

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

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

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

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

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

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

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

tank is heated.

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

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

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

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

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

system can keep up with.

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

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

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

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

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

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

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

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

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

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

And that was the first way of testing evaporative emissions.

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

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

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

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

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

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

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

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

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

measures the hydrocarbon concentration in the shed.

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

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

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

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

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

it at.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

And your Board has adopted several fuel standards,

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

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

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

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

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

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

go from the tank into the canister.

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

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

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

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

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

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

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

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

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

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

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

are over 101.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

MR. CALHOUN: I have one question.

CHAIRWOMAN SCHAFER: Yes. Mr. Calhoun.

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

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

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

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

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

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

MR. CROSS: Yes.

CHAIRWOMAN SCHAFER: Mr. Lagarias?

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

MR. CROSS: It's one day.

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

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

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

MR. LAGARIAS: It's fiberglass?

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

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

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

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

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

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

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

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

MR. LAGARIAS: Sort of seasons it.

MR. CROSS: Yeah. Yeah.

MR. LAGARIAS: Thank you.

CHAIRWOMAN SCHAFER: Yes, Dr. Boston.

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

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

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

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

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

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

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

MR. CROSS: Yes.

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

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

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

CHAIRWOMAN SCHAFER: Mr. Calhoun.

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

Do you think there would be any benefit to closing

the bottom of some of these canisters on older cars?

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

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

CHAIRWOMAN SCHAFER: Yes. Supervisor Vagim.

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

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

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

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

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

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

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

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

SUPERVISOR VAGIM: So it does have a timing mechanism.

MR. CROSS: Yeah.

SUPERVISOR VAGIM: Okay.

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

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

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

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

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

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

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

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

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

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

SUPERVISOR VAGIM: Very good. Thank you.

CHAIRWOMAN SCHAFER: Yes, Ms. Edgerton.

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

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

MS. EDGERTON: High nineties?

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

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

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

MS. EDGERTON: Thank you.

CHAIRWOMAN SCHAFER: Mr. Calhoun?

MR. CALHOUN: I was just listening to Bob.

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

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

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

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

CHAIRWOMAN SCHAFER: Are there any more questions

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

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

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

CHAIRWOMAN SCHAFER: How many tons of emissions are we talking about roughly?

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

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

CHAIRWOMAN SCHAFER: Okay.

Mr. Boyd, do you want to continue?

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

CHAIRWOMAN SCHAFER: Very well.

MS. KWAN: Thank you, Mr. Boyd.

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

evaporative emission test procedures.

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

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

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

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

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

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

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

that duplicated the ARB enhanced regulations with several changes.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

There are numerous technical amendments which will

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

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

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

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

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

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

In addition to the amendments previously

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

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

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

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

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

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

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

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

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

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

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

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

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

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

U.S. EPA is negligible.

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

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

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

Thank you. This concludes my presentation.

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

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

Yes, Mr. Lagarias.

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

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

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

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

MS. KWAN: That's correct.

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

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

MR. LAGARIAS: Thank you.

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

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

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

and they required different equipment -- different procedures rather.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

for the Executive Officer in interpreting the testing requirements.

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

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

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

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

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

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

this objective, although some differences still remain.

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

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

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

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

Thank you.

CHAIRWOMAN SCHAFER: Thank you very much, Mr. Halberstadt.

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

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

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

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

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

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

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

successfully.

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

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

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

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

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

MR. PARNELL: Thank you.

DR. BOSTON: Madam Chair?

CHAIRWOMAN SCHAFER: Yes, Dr. Boston.

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

How can you determine that?

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

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

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

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

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

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

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

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

DR. BOSTON: Okay. Thank you.

CHAIRWOMAN SCHAFER: Are there any more questions from Board members?

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

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

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

(Laughter.)

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

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

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

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

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

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

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

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

I have some concern with the language being

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

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

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

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

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

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

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

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

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

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

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

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

CHAIRWOMAN SCHAFER: All right. Thank you. Ms. Edgerton, you had a question?

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

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

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

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

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

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

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

the future. No one knows how these things work.

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

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

MS. EDGERTON: Thank you.

CHAIRWOMAN SCHAFER: Mr. Jennings.

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

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

CHAIRWOMAN SCHAFER: Mr. Kenny, did you have further comment?

MR. KENNY: No, I have no comment.

CHAIRWOMAN SCHAFER: Mr. Boyd?

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

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

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

CHAIRWOMAN SCHAFER: Okay. Thank you. Supervisor Wieder.

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

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

SUPERVISOR WIEDER: Thank you, Jack.

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

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

maybe put more responsibility on you for that discretion.

MR. BOYD: That's a good point.

(Laughter.)

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

CHAIRWOMAN SCHAFER: Are there any other questions by Board members for these witnesses?

Ms. Edgerton.

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

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

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

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

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

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

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

SUPERVISOR BILBRAY: Madam Chair?

CHAIRWOMAN SCHAFER: Yes, Supervisor Bilbray.

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

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

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

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

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

(Laughter.)

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

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

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

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

want to thank you for your testimony this morning.

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

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

CHAIRWOMAN SCHAFER: Very good.

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

CHAIRWOMAN SCHAFER: Thank you very much, Mr. Halberstadt and Mr. Cullen.

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

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

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

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

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

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

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

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

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

flexibility in meeting these requirements.

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

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

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

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

high-selling vehicle, to phase in.

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

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

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

Thank you.

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

MR. LAGARIAS: Just one.

CHAIRWOMAN SCHAFER: Yes, Mr. Lagarias.

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

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

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

MR. JOHNSTON: Johnston.

CHAIRWOMAN SCHAFER: Johnston.

SUPERVISOR WIEDER: Johnston.

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

MR. JOHNSTON: Yes.

MR. LAGARIAS: The name was --

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

(Laughter.)

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

MR. LAGARIAS: Thank you.

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

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

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

Mr. Cackette?

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

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

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

Mr. Johnston?

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

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

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

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

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

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

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

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

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

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

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

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

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

MR. CACKETTE: I don't either.

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

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

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

(Laughter.)

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

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

moment.

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

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

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

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

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

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

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

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

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

That's it.

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

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

CHAIRWOMAN SCHAFER: Thank you.

I'd like now to officially close the record on

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

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

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

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

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

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

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

SUPERVISOR BILBRAY: Question to staff. Are there

any amendments to this resolution?

MR. BOYD: No, no amendments.

SUPERVISOR BILBRAY: Okay.

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

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

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

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

DR. BOSTON: Second.

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

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

SUPERIOR RIORDAN: Two seconds.

CHAIRWOMAN SCHAFER: Two seconds.

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

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

MS. HUTCHENS: Bilbray?

SUPERVISOR BILBRAY: Aye.

MS. HUTCHENS: Boston?
DR. BOSTON: Yes.
MS. HUTCHENS: Calhoun?
Edgerton?
MS. EDGERTON: Yes.
MS. HUTCHENS: Hilligoss?
MAYOR HILLIGOSS: Aye.
MS. HUTCHENS: Lagarias?
MR. LAGARIAS: Aye.
MS. HUTCHENS: Parnell?
MR. PARNELL: Yes.
MS. HUTCHENS: Riordan?
SUPERIOR RIORDAN: Aye.
MS. HUTCHENS: Vagim?
SUPERVISOR VAGIM: Yes.
MS. HUTCHENS: Wieder?
SUPERVISOR WIEDER: Yes.
MS. HUTCHENS: Chairwoman Schafer?
CHAIRWOMAN SCHAFER: Aye.
MS. HUTCHENS: Passes 10-0.
CHAIRWOMAN SCHAFER: Okay. Thank you very much.
At this time, I'd like to advise the Board members that the second agenda item the staff expects will take about an hour and 15 minutes.
So, we have an option of proceeding with that now