MEETING

OF THE

SCIENTIFIC REVIEW PANEL ON TOXIC AIR CONTAMINANTS

CALIFORNIA AIR RESOURCES BOARD

SOUTH SAN FRANCISCO CONFERENCE CENTER

255 SOUTH AIRPORT BOULEVARD

SOUTH SAN FRANCISCO, CALIFORNIA

THURSDAY, OCTOBER 31, 1996

9:30 A.M.

Nadine J. Parks
Shorthand Reporter

MEMBERS PRESENT

Dr. James Pitts, Chairman
Dr. Craig Byus
Dr. John Froines
Dr. Gary Friedman
Dr. Stanley Glantz
Dr. James N. Sieber
Dr. Hanspeter Witschi

Representing the California Air Resources Board:

Genevieve Shiroma, Chief, AQMB
Dr. Joan Denton, Manager, Substance Evaluation Section, SSD
Jeff Wright, Stationary Source Division
Kirk Oliver, Staff Counsel
Bill Lockett, Deputy Ombudsman, Northern California
Peter Mathews, Office of the Ombudsman

Representing the Office of Environmental Health Hazard Assessment:

Dr. Richard Becker, Director OEHHA
Dr. George Alexeeff, Chief Air Toxicology & Epidemiology Section, OEHHA
Dr. Bart Ostro, Chief Air Pollution Epidemiology Unit, OEHHA
Dr. William Vance, Acting Deputy Director, Scientific Affairs
Jennifer Mann

I N D E X

Staff Comments Regarding what items are

P R O C E E D I N G S

--o0o--

CHAIRMAN PITTS: Good morning. I want to welcome all of you to this public meeting of the Scientific Review Panel on Toxic Air Contaminants.

I presume that you all have with you or will have available -- if you don't, we can make it available -- the formal agenda for this meeting.

I have one modification to the agenda. Given the importance -- from a lot of aspects, science, public health in general -- and the opportunity for the SRP to meet with key figures in the OEHHA to discuss matters of mutual interest to each organization -- ARB, OEHHA, and the SRP -- the chance to do this in a fairly comprehensive manner on two issues, particularly lead and ETS, for example, in consultation with the Department of Pesticide Regulations, we have actually deleted -- we've postponed Item 3 on our agenda. Item 3 is the update of the DPR program.

We have confirmed with them that that will be the first item on the agenda in our December 16th meeting. That will give us ample time to discuss these things. They have no problem with this modification.

Now, I'd like to begin on Agenda Item 1, which is a report on California's Environmental Protection Agency's risk assessment practices project. And in so doing, the

presentation will be by the new Director of OEHHA, whom we welcome to our group, Dr. Richard Becker.

We'd like to have him come forward, then. Welcome. And we'd like to maybe perhaps start by -- perhaps you could introduce members of your team who are here today to all of us. And just briefly perhaps for the edification of the Panel members, maybe give us a couple of comments on your background and sort of where you came from and where you're going in your new and highly responsible position.

DR. BECKER: Great. Thank you. I'm going to steal your microphone.

CHAIRMAN PITTS: Good. That's one way to keep me out of the discussion.

(Laughter.)

DR. BECKER: Good morning, everyone. Again, thank you for the welcome. It's a pleasure to be here addressing the Scientific Review Panel of the Air Resources Board.

My name is Richard Becker. I'm the new Director of the Office of Environmental Health Hazard Assessment. I was appointed September 3rd by Governor Wilson. And it really is a pleasure. It's a tremendous responsibility, and it is for me very much of a challenge.

Our job at the Office of Environmental Health Hazard Assessment -- we play a key role in Cal-EPA's programs and the programs of the State. As the Scientific

Review Panel well knows, we are charged with the objective scientific evaluation of health effects of environmental chemicals.

And what I'd like to talk to you about today, briefly, is this external review that has occurred. But before I do that, I want to introduce the folks from the Office of Environmental Health Hazard Assessment who are here with us today.

I have the Acting Deputy Director for Scientific Affairs, Bill Vance; let's see, the Section Chief for Air Toxicology and Epidemiology, George Alexeeff; Dr. Bart Ostro, who is the lead in writing the lead health assessment document; Jennifer Mann, who's one of our research scientists. We have Dave Morey, who is one of our scientists in the Pesticide and Environmental Toxicology Section; Michael DeBartolimess (phonetic), a Senior Toxicologist; Bob Pacirello (phonetic), who is our Chief of External Affairs; and Debra Hesse, who is our new Deputy Director for Admin. and Outreach. And last, but not least, Dr. Tom McDonald, who is the key staff person for the review that I'll speak about shortly.

Did I miss anyone? Okay. Well, you'll hear probably from most of these folks today.

This review was mandated by a law sponsored by Senator Charles Calderon, SB 1082. And the law was passed

in 1993, I guess, and it became effective in January of '94.

It required the Director of the Office of Environmental Health Hazard Assessment to convene a committee of outside scientific experts to conduct a comprehensive review of the policies, practices, and procedures of risk assessment -- chemical risk assessment used by all the boards and departments within Cal-EPA, not just OEHHA, but OEHHA, Department of Toxics, the Air Resources Board, Department of Pesticide Regulation, the Water Board, and I'm probably missing one other one. But all of the boards and departments were required to participate.

The product of their review -- and I have the draft report here. And I think each one of the Panel members was sent at least the executive summary. Oh, they did receive the entire report. Great.

The product of their review was to make recommendations for improving the science and conduct of risk assessment within California.

DR. FRIEDMAN: Excuse me. Some of us did not receive that.

DR. BECKER: Mr. Lockett, can we make sure that the Panel members all get a copy of the report?

(Thereupon, Mr. Lockett indicated an affirmative response.)

DR. BECKER: Thank you. Well, I won't send you the draft, because the final report is in the final stages. So, we will be sure you get at least the final report.

DR. FROINES: I think I'd like that document as well.

DR. BECKER: Okay.

DR. WITSCHI: Me, too.

DR. BECKER: Okay. We'll send both then.

The charge to the committee: To assess whether the methods, policies, and procedures used by Cal-EPA are based on sound science. So, this is basically an outside scientific peer review of the program of risk assessment within Cal-EPA, and to assess -- in terms of consistency -- the appropriateness of any differences between the methods and procedures used by Cal-EPA and those used by other similar bodies, such as U.S. EPA, or the National Academy of Sciences, or FDA.

In trying to decide how to compose this committee, we were confronted with a very difficult task, because everyone knows risk assessment is made up of various scientific disciplines. And how do you construct a committee that can comprehensively review in detail each and every one of the disciplines of risk assessment?

Well, we decided on a hybrid structure that worked extremely well. The committee was composed of 34 outside

expert scientists drawn from academia, industry, and research institutions. We convened a core committee of five members headed by Professor Sieber. And this core committee then provided the continuity throughout the entire review process. And at least three. and most of the time, all five core committee members attended each and every one of the meetings of the committee.

And then we had expert -- topic-specific expert committees for hazard identification, for dose response, for exposure assessment, fate transport, and risk characterization.

We had a lead scientist, and then subcommittees, if you would, composed of five or six different scientists with expertise in each one of these topic areas.

DR. GLANTZ: Can I ask a question?

DR. BECKER: Yes.

DR. GLANTZ: All right. I've been looking over the list. I see -- I mean, it's mostly academics and government people. But I do see several representatives of business, which is appropriate. But how come you didn't include anyone who is an environmentalist?

You know, there are scientists who work with comparable groups, you know, with the same level of expertise of the people with industry, but they bring a different perspective.

DR. BECKER: As far as I can tell, in terms of the committee that we pulled together, it was meant to represent all aspects of the science and disciplines of risk assessment.

We did contact people and solicit through both public notice and also informally participation on this committee. And this is representative of those people who indicated their interest, if you would, in participating.

DR. GLANTZ: So, are you saying that you solicited participation from the environmental groups, and they declined?

DR. BECKER: Well, at least to the extent that we provided an opportunity for them to participate as committee members through our public notice.

And, Tom, correct me if I'm wrong, but we did send out a public notice at least on one occasion, if I recall, soliciting ideas and input for this committee.

DR. GLANTZ: I don't understand.

Are you saying -- when you say ideas and input, do you mean like the public comments we get here, or suggestions for specific people to sit on the committee?

DR. BECKER: I believe we solicited some specific people. But I can check on that.

Tom, do you recall?

This was before I joined the Office of

Environmental Health Hazard Assessment; so, I don't know.

DR. McDONALD: (From the audience.) Yeah, we actually put out notices soliciting issues for consideration.

CHAIRMAN PITTS: Excuse me. We have a court reporter, and we're taking recordings here of the entire proceedings. Could we ask the audience, if they have questions, to please speak up so she can hear what you say. And identify yourself. There you go.

DR. McDONALD: My name's Tom McDonald from the Office of Environmental Health Hazard Assessment.

To my knowledge, we merely put a notice in the regulatory notice register soliciting ideas and issues that were very important to the committee for consideration during their review, not a direct public solicitation of names.

DR. GLANTZ: Well, do you have any concern -- I mean, since, in looking this over, there's some questions about balance, and fairness, and bias, and all this other kind of stuff, which are legitimate issues.

Are you at all concerned that this may have been, to some extent, a biased committee?

DR. BECKER: Well, I think when I explain the whole process, you'll get an idea about how open this process was for participation. And I think that, in my

view, it was a completely unbiased committee that was centered on evaluation of scientific issues.

We solicited public participation. If you look at this slide that I've put up, we held 10 public meetings and workshops. This was -- all the committee discussions, deliberations, activities, presentations to the committee were conducted in a public forum, where there was ample opportunity for participation on panels from the audience. And I think that it was, in my mind, the most open review process that I have ever seen.

In some ways, it was difficult for the committee, because everything they did was right in the public eye. But, on the other hand, that really provided for a great opportunity for review, and comment, and input as the process occurred.

Now, Dr. Sieber, do you want to add anything to that?

DR. SIEBER: Well, you're exactly right. Everything was open. And the rooms typically were full of people from literally every camp -- risk managers, risk assessors, industry, environmentalists. And all of their inputs were heard, and recorded, and became part of this report.

So, it was kind of a big consensus builder pyramid. That's the way I looked at it.

And, as far as representatives of the environmental groups, I'll have to say, since we all know the academic perspective, you can see that with some of those academics, we would get that input as well.

DR. BECKER: Thank you. In any event, there were 10 public meetings and workshops held starting in of '95, and ending last May.

And, in fact, if you look at what transpired -- and the transcripts are available from last May -- the committee actually drafted their report in public with some public participation at that time. So, it was a tremendously open process.

Overall, I think everyone that participated was very pleased at how the exchange of information occurred in this process. Everyone had a chance to be heard. And their comments and their points were duly noted, and I think recorded and responded to in the committee's findings.

The committee made several general recommendations. First and foremost, though, was their finding. And I think the finding is important to emphasize to the Scientific Review Panel, and it's important for us in the Office of Environmental Health Hazard Assessment as well.

And their finding was that, in general, the risk assessments of California EPA were of high quality, both

from professional practice standards and also from a scientific standard. If you would, they were of the highest quality.

Nevertheless, the committee found that risk assessment, as we all know, is an evolving science. It's an early, if you would, a very early science in relation to some of the more established areas of environmental sciences in general. And the committee found that there was need for continuous improvement.

And they made some very general recommendations, and then some very specific recommendations. I believe the report has over -- if you count the specific recommendations, over 140 specific, point-by-point recommendations for improving the way risk assessment is done, and ensuring that California EPA risk assessments are based on sound science and are effective, if you would, in evaluating information and communicating that information to the public and to risk management.

First, in terms of consistency, the committee generally found that there was a need to improve consistency within the agency across boards and departments. I don't think it's unusual for that type of finding to be made. I believe that someone commented that this same kind of thing occurs in the Federal Government; that you find like programs to be consistent and then programs somewhat

different, say, the pesticides and toxics to be different.

And there was a feeling that there should be a greater emphasis on consistency and harmonization within the agency, and then with our counterparts at the U.S. EPA as well.

In terms of the quality, one of the major issues was that there was a great deal of difference between the boards and departments in their use of internal and external peer review processes.

And so, there was a recommendation that the peer review processes be formalized, and that there should be also, in addition to that, better forums to bring newer methods of risk assessment, new methods of scientific analyses, or environmental health sciences into the risk assessment processes.

In terms of risk assessment and risk management, and that's the acronym RA/RM, and risk communication, the committee made a recommendation that there should be early input from risk management and external stakeholders into the risk assessment process. And this is part of a general theme, that the risk assessment should be tailored to the needs of the risk management.

And then -- yes, I'm sorry?

DR. FRIEDMAN: Will you say that last sentence again?

DR. BECKER: I believe I said something to the effect that the risk assessment needs should be tailored to the needs of the risk management. That leads me to the next bullet.

CHAIRMAN PITTS: Could you explain the needs of the risk management?

DR. BECKER: Yes.

CHAIRMAN PITTS: Because, as I understood 1807, it was set up to definitely separate risk assessment, which is science, from risk management, which is regulation.

How can you tailor the science, I guess --

DR. BECKER: Well, I think that gets to the next bullet, which is what I was trying to get to, which is balancing the level of effort with the importance of the decision.

DR. FROINES: Well, I think that there's --

(Thereupon, the reporter asked the speaker to use the microphone.)

DR. FROINES: I'm sorry. I want to -- I just made a little reaction to that. I didn't mean to start a discussion. I think there's two questions. One is, what does the report say, and then how does the agency interpret what's on that overhead as a policy decision with respect to how all of this is implemented.

And that's where we get into nitty-gritty of how

does one intend to implement it.

DR. BECKER: Well, one of the other findings, of course is that there needs to be interaction, communication between the risk assessor and risk manager. I don't know if I have that on the next slide or not.

In any event, the risk managers and the risk assessors need to work hand in hand, or at least communicate, so that the risk manager can understand what the risk assessment means and what it is saying, and so the risk assessor can understand the needs of the risk manager in addressing those particular areas of risk assessment, whether it's a particular facility or site, or whatever, there needs to be better communication and better interaction.

In terms of resources, the committee looked at the resources that were available within Cal-EPA for risk assessment, and made the very general recommendation that the agency should ensure that there are adequate resources with the specialized expertise for the agency to conduct risk assessments. Specifically for the Office of Health Hazard Assessment, it was noted that we lacked resources in the area of epidemiology. And that's something we all well recognize.

The committee went on to provide some guidance that we should foster interaction with those other State

agencies and the University -- the universities that are available, so that we can get the specialized expertise that we may not have available at the present time to address particular important issues.

DR. SIEBER: That's specifically -- if I could amplify slightly on that.

DR. BECKER: Yes.

DR. SIEBER: Within OEHHA, the recommendation was that, since OEHHA did not have a large epidemiology expertise, that it should seek ways to obtain that expertise.

DR. BECKER: Thank you. Well, the report is broken out into topic-specific chapters as well as a general overview and an executive summary.

Each one of the topic-specific chapters has recommendations which were the result of that subcommittee's work. It's offered primarily or almost exclusively by the expert committee members themselves. And I want to just highlight a few of those specific recommendations that may be relevant to OEHHA, ARB, and the Scientific Review Panel.

First, in terms of hazard identification, there was some discussion about dated risk assessments and what they mean. And when new information is available, when do you go back and revise a risk assessment? And I think that's an important issue that we need to come to grips

with, in that sometimes we're dealing with risk assessments that may be 10, 15, or even 20 years old at this time.

I don't think we're that bad here in California, but it may be the case. So, there needs to be some provision for reevaluating these risk assessments for individual agents, and determine when you would go back or when you wouldn't.

DR. GLANTZ: Are you aware of the fact that we actually have procedures to do that --

DR. BECKER: Yes.

DR. GLANTZ: -- in the SRP and have done it?

DR. BECKER: Yes. We were aware of that; the committee was aware of that. Remember, these recommendations are Cal-EPA wide, not just specific for one particular board or department.

DR. GLANTZ: Yes, but to that end, I mean -- maybe this is self-serving. But in looking at what they're saying, it seems like we're actually doing pretty good by your criteria there.

I mean, how do you see this process as fitting into the overall spectrum of stuff going on?

DR. BECKER: If I may presume to speak for the committee, I would think, overall, they were very impressed with the ARB's efforts in terms of the openness of the processes, the high quality of their science, their exposure

monitoring, and the type of peer review that's conducted here.

DR. SIEBER: I think the Scientific Review Panel, of course -- as Chair of the RAAC committee and member of the SRP, I'm very familiar with how the SRP operates. And I would have to say that in much of the discussion, a comparison was made directly with the SRP. And in many cases, it was help up as a model that the other components of Cal-EPA should emulate.

DR. FROINES: Can I make one comment. Since we all wear multiple hats, I serve on the Carcinogen Identification Committee under Proposition 65. And one of the concerns that has been expressed by that committee is that we very carefully avoid a process that ends up having to spend all our time reevaluating old decisions, and that we don't want to turn the process into something where everybody who wants to have their -- the impact on their own interests minimized keep coming in and asking for reevaluations.

And so, I think's a very important decision, because I don't think we want to open the door to a considerable number of reevaluations that are based on self-interest rather than science.

DR. BECKER: Thank you.

One of the others was the standardization of

collection of information. And the idea was -- and I think I've captured the essence -- that this information is useful for various board and departments. And if it's not standardized in some way that could help collect it or how it is assembled, if you would, that it may be somewhat to translate across these various boards and departments. So, there should be some thought -- I think the committee's thought is making this a more standardized process, and let's make it more user friendly, both for internally and I think externally as well.

And so, that's, I think, the gist of their recommendation for hazard identification.

In terms of dose response -- and we've just captured a few of the bullet items here. There are more, of course in the report. There was considerable discussion by the expert committees and the core members on alternative ways of looking at analyses rather than using large uncertainty factors in our toxicity databases.

And there was no specific recommendation on how to do that, but just think about that. And so, that's a challenge for us, challenge for us in all the fields of toxicology and risk assessment.

One of the others was to develop guidelines for using uncertainty factors. There's been a long-standing practice dating back to the early fifties with FDA using

uncertainty factors of 10. EPA has made some progress in defining uncertainty factors, breaking them out a little bit.

And there was some discussion about looking at that, and then trying to decide if, you know, there are some rules that could be adopted in terms of guidelines for use of uncertainty factors based upon severity of effect and the appropriateness of the database.

And so, these again, they are not solutions, but they are challenges to us to begin to address these areas pointed out by the committee.

In terms of exposure assessment, the major recommendation was to work more closely on integrating fate transport efforts with human exposure assessment efforts. And I think it became clear that there was -- while there was very sophisticated monitoring in some cases; in other cases, there was no monitoring. And there was a need to have that link, if you would, fit in overall to the picture of risk assessment. And there's a challenge for us there as well.

And then, again, more emphasis on receptor-based exposure assessment; human activity patterns when available. And in many cases, ARB, or OEHHA, or others are leading in this way, but this is a general recommendation that applies to all boards and departments within Cal-EPA.

CHAIRMAN PITTS: Dr. Becker?

DR. BECKER: Yes.

CHAIRMAN PITTS: You might gather that this is kind of my bag, exposures. I've got to be careful how I say that.

This relates also to this question of harmonization with EPA. As you know, we discussed this with you briefly. One of the concerns that I think that -- one of the concerns that we may have is again that -- how does one define harmonization, and does harmonization with EPA -- in a regulatory sense, that is a function of the regulators. That's their function.

In the scientific sense, however, it's the function of the staffs here of the OEHHA and the ARB, and in the sense -- a function of the SRP in a sense.

Let me give you an example of sort of a specific, and ask how one deals with the EPA in a situation like this, which involves directly a number of items -- fate and transport modeling, which involves the actual accuracy and reliability of those models.

And, as we all know, a model is as good as, first of all, the input data that you put in, the emission data. "Garbage in, garbage out."

And on our -- which will be the topic of discussion next, which is lead, so this is relevant to the

next item, the lead risk assessment.

On the first page it says, "Based on information from the ARB Technical Support Division Air Toxics Emission Data System, local districts and surveys conducted by ARB staff, approximately 175 to 182 tons of lead are directly emitted in California's atmosphere annually."

Okay. Great. That's what you take. And you say, okay, we put it into our model. And we use various types of models, and we estimate then, as atmospheric scientists, what the dose would be under certain conditions -- the overall dose and then near source. But this is the overall.

Then we come to the next paragraph and it says -- this is California's -- (Reading) In contrast to the direct lead emissions estimated by the ARB staff -- your staff-- the U.S. EPA toxic release inventory, listed approximately nine tons (nine tons) of lead, and then compounds, emissions for California, 190.

Now, I don't exactly see how one harmonizes a number of 9 with something 20 higher.

I mean, you may harmonize, but it's in a different octave. It's a very different game.

And let me continue. And this is important, because I think -- this is why I think that California has a record that it has, being unsurpassed in the world in doing exactly the sort of work that has been done and is going on,

certainly in the air. I can only speak for the areas that I know something about.

Then, it goes on to say (Reading) that the TRI list -- the TRI list is a national database. So, here's an actual database giving us nine times of toxic emissions compiled by the EPA as required by the Superfund amendments, et cetera.

The TRI list relies on the reported emissions of basic manufacturing industries, which manufacture and process so many tons or more a year, and so forth.

Examples of potential sources that are not included in the TRI report, i.e. which the EPA has adopted, are mobile sources -- dum, dum, dum, duh. And among the mobile sources that are not included are aircraft fuel combustion, which is, as a matter of fact, 140-some-odd tons.

So, the major contributors of 140-some-odd tons, which is in the air and isn't even in the report from the EPA.

And I think -- so, do you understand where we're coming from? We have some sensitivity to this sort of an issue, and it is one that we would like to see kept well in mind during the -- during the discussions. And I'd like your comments.

How do you harmonize that?

DR. BECKER: Well, you're getting ahead of me, Dr. Pitts.

CHAIRMAN PITTS: Well, that's okay. Well, you know what they said, "Rommel, I read your book."

(Laughter.)

DR. BECKER: I think you have to be very careful in risk assessment or in your exposure assessment document example. And I think there, you're talking about reported data versus some type of measured data. And you have to be very careful on how you look at that data. You always have to look at the source and the quality of the data before you use it as a very basic step.

And that's kind of more specific, and I think that in the presentation on the lead document, the ARB staff can go into a little more detail on that.

CHAIRMAN PITTS: How would you harmonize that? How would OEHHA harmonize? Would you just say that's nonsense, they don't include emissions from aircraft? I would.

DR. BECKER: I think you have to look at the quality of the data. And you have to say, what is it? What is the question that I'm asking?

CHAIRMAN PITTS: I'm asking the question.

DR. BECKER: No, I'm sorry. As a scientist, you would look and say, what is the question we're asking? We

want to know how much lead is being emitted into the California atmosphere.

And you want to look -- from all sources. And if you were trying to figure out where the lead is going, you look at all media, you know. And I think that's where, in many ways, we in California have led the nation in these multimedia type of assessments, whether it's from exposure, or from fate transport, or from risk.

And I don't see our efforts -- the recommendations and harmonization diluting in any way -- and let me repeat that. I don't think it will dilute in any way our efforts here within California to maintain and enhance our high quality of environmental standards and environmental protection.

And if I can quote -- and I don't really remember which committee member said this, but they made it very plain and clear. In no way does their recommendations or does their analysis, their review indicate that EPA is the gold standard that we are trying to live up to.

It was clear -- and I think I'll ask Dr. Sieber to comment -- that in many ways the efforts of California, the California EPA, the ARB, and OEHHA I believe, and DPR as well -- and I don't want to leave any of the other folks out; so, I'll make it all of the other boards and departments -- they're leaders in terms of environmental

regulations and in risk assessment methodologies.

So, I think that harmonization doesn't mean exactly the same. And I think you used the term "one octave higher," or "one octave lower," or whatever -- as it's appropriate for the State of California.

CHAIRMAN PITTS: You might say that the EPA in this case ought to, in this specific case, ought to be harmonizing with California.

DR. SIEBER: Well, let me just make a brief comment. I know Dr. Glantz has a comment to make, also.

By "harmonization," I think that the term that was used was "to the extent possible." So that when both the State and the Feds are confronted with the same data set and they reach conclusions, "to the extent possible," they should try to harmonize, because they're starting with the same data.

And when there are differences -- and they could be very legitimate -- I think the differences need to be explained and defensible so the public doesn't see two different numbers -- one Federal, one California; they're totally confused; they don't understand the origin of it.

We never met as a committee -- and I think this is what Rick was talking about, the gold standard -- that we would automatically forego our responsibilities in the State and simply defer to what the Federal Government said.

And I'm glad to hear Rick remembers that.

DR. BECKER: I remember that quote. From my perspective and the perspective that I'd recommend is that we need to talk to each other. We need to work with each other more, work with the Federal agencies. And that way, in my mind, is a way of leveraging some resources as well.

I don't know how this will exactly play out, but I could envision something where we could do part of the analysis and they could do part, because they are the experts in one area and we don't. And then we end up with a single document, if you would, that works for sound science's objective, and satisfies both of us. And that, to me, is one way of harmonizing.

So, DPR has another way of harmonizing their efforts, which is explained more directly in here. It's about exchanging data and data reviews, and it's a way of streamlining our processes. And where they're both looking at the same data sets, they would -- one would be the lead and one would be the reviewer kind of thing. And in that way, they are leveraging their resources and streamlining the processes in some way.

DR. GLANTZ: You know, it may be that we're coming from a -- you've said that this committee and this process is better with the perspective; so, we may be coming at this through a distorted view. But when I read this, I was

concerned -- and I'm very pleased to hear what you're saying, because I was very concerned that this meant "lock step."

And I mean, to me, when you talk about -- I mean, many of these recommendations, to me, are sort of motherhood and apple pie, things that I thought we were already doing frankly, at least in this committee.

But, to me, to harmonize our results with EPA or anybody else means to look at what they said and think about it very carefully, and recognize that they have an extensive process that they go through, too.

But, you know, to -- if we have additional information -- by definition, we're doing it after they are. If they have something to look at, they already did it by the time we're looking at it.

And so, we almost always have the benefit of additional information since the EPA already made their decisions. Now, there are several places where we've ended up concurring with them, and there are several places where we've ended up differing with them. And I think the key is explaining it and -- as Dr. Sieber said.

But I think it's important that this harmonization thing be interpreted very broadly and interpreted as any good scientist would. You look at it, and you think about it, and you consider it, and then you explain any

differences very carefully. And you would do that if you were writing a paper. But it shouldn't be interpreted as saying that we have to agree with them. We have to consider what they say. And usually we will, but not always.

And the other concern I had -- and I'd like you to address this -- is this -- California and this committee in particular are way ahead of the EPA, way, way ahead of EPA. And you're not implying that we would have to wait for them before we did anything?

DR. BECKER: I see this much broader. I would say that we would lead, and we may be able to -- how would I say it -- through our advanced efforts here in California, actually through harmonization, achieve greater -- I want to choose my words carefully, not to offend the U.S. EPA -- but provide a stimulus, if you would, to the EPA to move into areas that we have moved to where we are advanced in. Let's put it that way.

But I see it as a two-way street, not a one-way street.

DR. GLANTZ: But you wouldn't require them to act before you would act?

DR. BECKER: In no way is harmonization require that as far as I can tell, no. And I don't think that's the intent.

DR. SIEBER: Let me just briefly repeat one other

obvious thing that the committee stated in the report. California has a st of laws, and we're obligated to do certain things. Prop. 65 has no federal analogy. So, always, we're going to have to do things that don't rely on some action at the Federal level. That's the nature of the beast.

DR. BECKER: To the extent that we're working on similar issues, there needs to be a dialogue, exchange of data, and analysis. I mean that's where I see the harmonization.

DR. FROINES: I want to make one comment. I think that it's important that one recognize that in the legislative history of AB 1807, that the Legislature actually passed 1807 precisely because of the weaknesses of the Federal Government -- particularly U.S. EPA -- in the area of air toxics.

And so, since 1983, the operating principle of this committee and this law has been that California has to be in the lead to deal with this question adequately. I would say that my experience with the two chemicals that I've dealt with as the lead -- perchloroethylene and methylene chloride-- are two compounds that California was clearly out in .S. EPA and did better science than U.S. EPA.

And I think that the principle that we do the best science here should be one that we take very seriously. And

I think it's very good what Dr. Becker is saying. I think the committee was concerned about the issue of harmonization from the standpoint of will there be pressure brought to make things similar. What you're saying is good. I think this committee should pass a motion later to make that an explicit recommendation of this committee, though, so that we don't just leave it for others to decide; that we make it formal on our part.

But I think the notion, as stated, is certainly fine.

DR. BECKER: I'd refer you to the draft if you want further information on that. But I think Dr. Sieber summarized it, though. You know, to the extent possible, there should be consistency. And when there's not, there needs to be good scientifically valid reasons, explained clearly, so that people can understand what the reasons for those differences are. And it may be that California has a different climate, or there were regional differences, or other differences that need to be clearly explained.

DR. FROINES: Rick, one of the things that's important to know is that since the passage of the Clean Air Act, U.S. EPA has never been proactive on the issue of air toxics. In some respects, they -- if you talk about weaknesses in epidemiology, well, they're tenfold for U.S. EPA. And if you talk about weaknesses in exposure, they're

equally tenfold more than Cal-EPA.

In fact, we have better and more resources in those two areas in some respects than U.S. EPA has even now given the size of their budget.

DR. BECKER: Let me just respond very briefly. I think it's well recognized that California is the leader in the nation and the leader in the world in their air programs, both from the monitoring and from a regulatory standpoint.

I think with lead -- again, if I could just jump ahead a little bit -- that the ARB had tremendous foresight in being the first in the nation to lead the phase-out of lead in gasoline. And this has had a dramatic effect on the blood lead levels of children. So, I don't believe that it could be interpreted as diluting, if you would, the efforts of California to maintain and enhance the high quality of standards.

The way I interpret it is that we need to look at the same data sets and exchange these types of analyses. If our analyses win the day, if you would, in terms of the science, then that should go forward. And there's no reason to, I think, consider harmonization to be exactly -- someone used the term "lock step" with the different organizations.

There are different constituents that we serve and a different environment.

DR. FROINES: I want to make one final comment before we go ahead. I think that in terms of the overhead that you showed about resources and using our resources most effectively, one of the things that we are very different than U.S. EPA on is the fact that in the -- we have the University of California, and we have enormous scientific expertise in all the nine campuses, and that what we see ourselves in is a partnership between State agencies and the University in terms of developing the best science.

And so, I think it's important that OEHHA make use the University of California expertise even more than you already do, because I think it's a resource that is unparalleled in the United States.

DR. BECKER: I think the committee members who participated would share that analysis. And indeed, in their recommendation really does specifically speak to encouraging Cal-EPA to reach out to the experts.

And primarily, as you know, the University of California has long been the research arm of the State Government. So, we would see it as an enhancement of those interactions. And that's very important for improvement of the quality of science.

DR. SIEBER: Someplace in the document it specifically mentions the University of California. Of course, it's not exclusive. It mentions other resources

available in the State. But that is definitely emphasized.

I think in one of Rick's previous overheads, he talked about ways to reduce uncertainty. And in the same regard, there's times when you simply need to go out and get some more data. You don't have enough data. At some point you have to say, "I don't have enough information here." And the University and other organizations were specifically mentioned in that regard as well.

DR. BECKER: I'll go back to this one. On risk characterization, improve the characterization of uncertainty and variability. This is very much consistent with the National Academy of Sciences report on risk assessment. In fact, several members of the National Academy of Sciences participated on an expert panel, in fact--

DR. SIEBER: Dr. Witschi.

DR. BECKER: -- and Dr. Sieber, of course, as well.

These last two are stressed that there's a real need that we sometimes, as scientists, fall down upon, and that's how we communicate this information to the public. And that's something that's a real talent for -- not just getting the science right, but working on the communication and interaction. So, that was a key point in the risk characterization.

DR. FROINES: One thing has to be said about this. We talk a lot about doing better science, and we talk a lot about how to do better with the X, Y, Z issues of uncertainty, and variability, and what have you. But the key issue is the data we have to work with from the beginning; that is, the toxicologic data and the epidemiologic data is what makes any risk assessment possible.

So, if we don't have the basic information, then we're going to spend all our time looking at uncertainty and variability. And I am concerned that one of the things that's happening in the United States is that we are doing less epidemiology and less toxicology to provide the basic data to use for risk assessment, and that our emphasis on new methods in risk assessment and on new ways to do risk assessment is a little bit like fixing the problem at the wrong end of the process.

And I think one of the things that has to happen is that OEHHA has to press for more toxicology and epidemiology so we have then a better database to operate from.

And everybody now is rushing towards doing basic research and improving issues of variability and uncertainty, and the database that we have to work with is going to shrink. It is shrinking. The dollars from the

Federal Government for testing are shrinking. And that's a serious issue for us, because it means that we won't have enough to really do very much with this kind of thing in the future.

DR. SIEBER: Exactly. And I don't think you meant to exclude exposure data, because I think one of the concerns that Jim Pitts and I had was that we're relying too much on models that will not have basic exposure data. So, it goes in all parts of risk assessment.

DR. BECKER: One of the things that's important and near and dear on everyone's part is the collection and use of data. And if you hear from seven different boards and departments from Cal-EPA, you find they all have different data collection systems historically and for one reason or another. And there was some real question about the useability of that data.

In fact, I think there was some testimony that provided that, as data reports came in, they looked at them once and put them on a shelf. And, as far as they know, no one ever looked at them ever again. And that was of great concern because of the time, and expense, and trouble of collecting that data, and then it was not readily utilized.

So, there was a broad cross-cutting recommendation that there be a review of how data is collected, what data is collected, and what it's used for, and try to figure out

if there are ways to make the data more available. I think that captures the gist of the committee's recommendation.

Particularly access to this -- maybe as we move from -- I think this is, again, partly my philosophy. As we move from a single media evaluation to more of a multimedia evaluation, it's important to be able to access the data from the various different media, and that's where I think this really will be helpful.

Well, what's next? Well, we have the committee draft report. There was public review and comment on that draft report, and we intend to have the final report released very, very soon. And one of the successes that we've had in terms of distribution has been posting this report on our home page. And so, we have received tremendous accolades, if you will. This was one of our first major efforts with delving into the internet. And by posting it on our home page, the report becomes immediately available worldwide. And from our standpoint, it also saves us a tremendous amount of resources.

So, in terms of that, we're getting very close to that effort. And then, of course, there's the implementation phase. And the exact processes of implementation have not been laid out either within OEHHA or Cal-EPA, but I included -- I will include just a few of these things that we're undertaking at this point in time.

I would say I put these together, because our efforts are strategic planning efforts. Our efforts are consistent with the RAAC recommendations. And these are some of the ones that I pulled out that the Office of Environmental Health Hazard Assessment is employing at the present time.

The first is that we were encouraged by the committee to develop a memorandum of understanding with our counterpart at the U.S. EPA, Bill Farland's group at the National Center for Environmental Assessment. So, we're in the process of negotiating that MOU. And this is the MOU that would provide for greater consistency or harmonization, exchange of information, and exchange of peer reviewers, exchange of documents, working more closely together, if you would, between our scientists.

A very strong recommendation was to enhance peer review and peer involvement. And in our efforts with that was to open the processes up as much as we can, to solicit and involve our peers from academia, from industry, or research institutions in the process as early on as we can, of course, to collect and analyze data.

And so, we're looking at ways that we can improve in that regard. We've established this year a few matrix teams of staff level scientists from the various sections that we have within OEHHA to do very focused projects. One

of them is to look at this tiered risk assessment. And this is one of the recommendations of the committee, that there be -- risk assessment is an iterative process. The committee recommended that there be a way to look at -- if you could have tiers in this risk assessment, maybe a screening level analysis, and then an intermediate step, and then more advanced types of analysis.

And we have our process of assembling a team of scientists to try and look at that. And this is within OEHHA at the present time.

The other thing we're doing is trying to establish a pilot project. You know, U.S. EPA came out with new cancer guidelines. We've got a prototype, but we're not sure of how it's really going to function. So, we'd like to get a team together of a few -- again, a few staff scientists, work on a chemical of concern, of course. We're not going to work on a chemical that is not of concern. And let's take those for a test drive and see where the holes are and see where we can fit in some of our particular expertise or guidance to fill those gaps.

DR. GLANTZ: Can I?

DR. BECKER: Yes.

DR. GLANTZ: I'd like to ask a question about the second one, which would be enhancing peer involvement. One of the more successful protocols and procedures that the SRP

put in place years ago was good communication between the SRP and the staff, the OEHHA and ARB staff, such that the -- when these reports have been prepared, the key SRP people looked over the reports informally as part of the internal review before the reports were sent up for policy review.

And the reason for that was to try to catch things that were red flags from the SRP's point of view before the document was actually issued to try to save time, and save work, and save steps. And I think it's been quite successful.

Well, a day or two -- I think it was yesterday or the day before, I called up Lauren Zeiss, who's in charge of the second-hand smoke reports, and asked her what the status of it was. I realize that's another agenda item. She said, basically, they were done.

And I said, "Well, can I get a look at them before they go out to, you know, to see if there's any problems with them. And I was told, no; that management had said that that wasn't permitted.

What's changed? Why?

DR. BECKER: I don't know that anything's changed. This is news to me. But I'll be glad to ask if Bill Vance has any comments. Bill, maybe you can comment on that.

DR. VANCE: Sure. Dr. Glantz, I'm fairly new in my position, but I am now responsible for the work products

that come out of the four scientific sections in OEHHA.

And I feel it's my responsibility to take a management level review of these documents before they are put out for public comment and review. There's a lot of things that I like to look for in these documents. One is clarity, readability, and consistency.

DR. GLANTZ: I understand. But that's not the question. And that's totally appropriate. And that's the way it's always been.

DR. VANCE: Okay.

DR. GLANTZ: But the thing which is different now was that it used to be that before the documents were sent forward for management review, the key SRP people took a look at them for technical aspects to make sure that the science straight or at least raise any issues that they expected the SRP -- they were basically speaking on behalf of the SRP to raise any technical issues that they thought were going to be problems, so at least OEHHA and/or the ARB would have the benefit of sort of an advanced warning where these issues were so they could be fixed, if OEHHA thought it was appropriate, before the documents went up for management review and went out for public comment.

And the feeling was that it was -- and the reason that this practice evolved -- and I've been on this committee longer than I care to remember, although not as

long as some of members -- was because reports were issued, sent out for public comment. They would revise -- it was a very extensive process.

And then they would come to this committee, and then issues would be raised. And by raising them early in the process, it just saved a lot of work and a lot of time.

And so, I again ask the question. In the past, when these reports were finished in sort of final internal draft form prior to management review, they were circulated to the appropriate SRP people to just look at them from a technical perspective. And in some cases, people said this is cool; in some cases, a lot of issues were raised.

Why isn't that being done with the ETS reports, or have you changed your policy on everything?

DR. VANCE: I'm not aware that that is a policy, Dr. Glantz.

DR. GLANTZ: I can tell you that it's been the practice for the last many years. I've been the lead on several documents.

DR. FROINES: He's saying that the policy hasn't changed.

DR. GLANTZ: Oh, okay. That means that the SRP can see these reports?

DR. VANCE: That is not what I said.

DR. GLANTZ: Oh.

DR. VANCE: I would like to correct that, Dr. Froines.

I'm not aware that that is a policy in OEHHA; that our internal documents that are in draft form are released outside of our department or outside of Cal-EPA for review prior to a management level review. I'm not aware of a policy that allows for that.

I would be -- it's my prerogative, I believe, to take a first cut at these documents from our scientific sections before they go for external peer review.

DR. GLANTZ: So, I think -- would it be fair then to say that you're changing the practice? Because I've -- I mean I've reviewed many of these documents at that stage.

DR. FROINES: Stan, I don't know agree with that way you characterized it, because what has happened in the past and was stated explicitly in the past between this committee and the agencies was that the process of developing the documents was an iterative process; that the leadperson for the committee worked with the staff developing the document to ensure the best quality science was being put into that document.

That's the way we have all worked on this comittee. We have always been an integral part of the process of development of the document to ensure the best possible science. So, there's never been a question of our

seeing a document before it went to management. It's been that we have known the scientific issues and what was in the documents as the process unfolded.

So that the notion that Stan says was that we were not reviewers but participants in the process to ensure scientific quality so we could minimize -- minimize documents going back and forth and being rejected by the committee.

So, it was for practical consideration to speed up the process that we adopted as practice. So, it's never been a question exactly of seeing the document before it went forward.

When I worked on methylene chloride and perchloroethylene, there were major pharmicokinetic, toxicokinetic modeling issues. And George and I, and a whole raft of others, worked together to resolve those issues as the process went along.

It would be very disturbing if we're hearing that that process is going to be changed.

DR. GLANTZ: Yeah. If I could just add, I totally agree with what he said.

DR. VANCE: Okay.

DR. GLANTZ: And all of the documents or all of the compounds that I've been involved with as the leadperson or a co-lead on, I mean, I've attended the workshops to the

extent I could. And, you know, the -- the most recent one I can remember -- one of the ETS documents -- maybe it was the exposure assessment. I can't remember. I mean, I raised, when I took a preliminary look at it, I raised a huge number of issues that ended up generating a lot of work before the thing ever got sent up the line.

And it would have frankly, I think, been a waste of management's time to have reviewed the thing I looked at, because it had a lot of problems with it. And so, I see this -- maybe there was a miscommunication, but it seemed to me that -- I was very surprised to the reaction I got the other day. And it seems to me that it goes directly against this middle recommendation (pointing to the overhead screen).

DR. BECKER: I think you characterized it correctly in terms of miscommunication. Our intention is to enhance peer involvement and to enhance peer review.

And part of our peer involvement process includes a very rigorous internal scientific peer review before documents are released to the public for public review.

DR. GLANTZ: Right.

DR. BECKER: I think we need to, and I'll be glad to. Bill and I can talk tomorrow and make sure this is really clear. But our efforts here are to really make sure it's a quality document.

DR. GLANTZ: So, does that mean that the draft documents --

DR. FROINES: Excuse me for interrupting. I want to be very clear. We don't count as public input.

CHAIRMAN PITTS: That's correct.

DR. FROINES: We're not the public input.

CHAIRMAN PITTS: That's a statute --

DR. FROINES: We are part of the process.

CHAIRMAN PITTS: -- a legislative mandate.

DR. BECKER: I used the term peer involvement.

DR. FROINES: No. It's more than that. These are our products.

CHAIRMAN PITTS: I have to sign the findings that are prepared. It's a legal document.

DR. GLANTZ: And so, it's just fairly troubling to me.

CHAIRMAN PITTS: Yes.

DR. GLANTZ: In the past, as these documents have involved -- and I've been involved in a bunch of them -- anytime that there was a question, I was consulted, if it was appropriate. Anytime I had a question or wanted to see a draft of something to comment on it or to have some input, it got sent over.

This is the first -- I've been on this committee 10 years. Okay? I think. And I can't remember --

CHAIRMAN PITTS: Put it closer to 13.

DR. GLANTZ: There's some uncertainty as my brain comes to maturity.

CHAIRMAN PITTS: Put a plus or minus on that, plus or minus the standard deviation.

(Laughter.)

DR. GLANTZ: I have never been told no when I've asked to see anything until a day or two ago. I mean -- and this is very troubling. I mean, is this a change in the way you guys have historically acted?

DR. VANCE: I think --

DR. GLANTZ: Maybe I should ask Dr. Becker.

DR. VANCE: Okay.

DR. BECKER: I think it's a point that we need to clarify in terms of miscommunication.

Our goal is to have, again as I stated, enhanced peer involvement and to have a very strong internal peer review process.

CHAIRMAN PITTS: But this would involve -- when you say "internal," this peer review process, the "internal" encompasses the SRP. We are not -- the public comments down the line for peer review.

DR. VANCE: Dr. Pitts, I never meant to imply that. All I'm saying is that I agree that these documents were meant for your reading.

DR. GLANTZ: So, does this mean --

DR. VANCE: Can I --

DR. GLANTZ: I'm sorry.

DR. VANCE: I act as the quality assurance person. I do the first screening of these documents before they come to your hands. We take great pride in our work. And I would like you to read a good document.

DR. GLANTZ: But what if I say, as I've said in the past, and as every member of this committee has said, we want to see it before it even goes that far? You know, because --

Well, let me just ask the question. If I were to ask, as a member of this committee, to see whatever documents that have been dumped on whoever's desk they were dumped on by Lauren, can I see them tomorrow or Monday?

I mean we've never handed -- nobody, as I know, on this committee when he's reviewed these internal review drafts -- I mean, they're not treated as public documents. They're treated as internal review drafts.

The ones I get, the first documents that I see for the compounds that I'm working on have "Internal Review Draft" stamped on them, not "External Review Draft" or "Interim Review Draft."

So, if I were to ask or if I ask you today, right now, could I see whatever it is you've got, the most current

versions as of Monday, when I get back to San Francisco, would you let me look at them and comment on them?

DR. VANCE: I would prefer to look at them first, make my comments, have those corrected, then they would come to you.

DR. GLANTZ: Okay. We understand that's what you would prefer.

DR. VANCE: Yes.

DR. GLANTZ: I'd prefer to look at them. Will you let me look at them?

CHAIRMAN PITTS: Well, maybe Rick has to make that decision.

(Thereupon, several persons smoke simultaneously.)

DR. FRIEDMAN: I have written some things which I wouldn't even want to show to the person in the next office, let alone somebody on a review committee. So, I don't think that you should assume that we committee members have the right to see every little draft or the most crude draft.

DR. GLANTZ: This isn't a crude draft. I mean this is the stage -- the stage that these documents are at right now, they are at least as far along -- these are the second revisions. They've already been out for public comment and revised.

So, this is not, you know, a rough draft written

on the back of some piece of toilet paper.

What I'm saying is, though, I've never -- in the ten years I've been on the committee -- been told no when I've asked to see something, never.

I've never been told -- I mean, never, never. So, this is the first time it's never happened. So. . .

DR. BECKER: Again, there may have been some miscommunication there.

CHAIRMAN PITTS: But there is some miscommunication.

DR. GLANTZ: No, he's said it very clearly.

CHAIRMAN PITTS: To give it a little perspective in this as to --

DR. GLANTZ: You've been on it for 13 years.

CHAIRMAN PITTS: Yeah, John Froines and I are sort of the surviving members of this, the pioneers. Much of this, I might say, evolved. These questions -- remember, John? Some of these questions really were present way back at the beginning, 13 years ago. And over time, the interactions, for example of the ARB in certain areas were not that closely coupled with and between the Panel.

And that actually caused some problems. But over time, we worked these out. And over the last ten years, they've been really relatively smooth. And the process has evolved.

And one of the reasons that the process -- and one of the reasons that Stan, and John, and the rest of us feel that it's extremely important to get involved is not from our interest, but for the interests of the agencies -- OEHHA and the ARB -- and for a very good reason. If you want these documents, as you say, if you want the state of the art of the science, you have to have interactions early on in the preparation of the document with people who are involved with personally or know who's involved with -- gee, I really didn't do a rate constant on that reaction for a certain compound, but I can tell you who does know and who can calculate that.

I'll put you in touch with somebody. In other words, we provide a very important function of being an interface between the staff, who are not having the fun we have doing research, and publishing the research, and in contact with the literature.

And so, this allows us to produce a document then, and which we have done, which is truly state of the art by these interactions.

Whereas, if you simply rely on staff -- rely on reading the literature, reading the reviews -- and reviews can be very biased to the reviewer, and it's tough.

So, we went through all of this 13 years a go. And I remember talking photochemistry and atmospheric

chemistry with acetaldehyde, that happened to be my bag. And I listened to the toxicologists, and I hear things from my peers. This is the latest in this. So, that's my real point. It 's really important. We have been working under the very principles that you people are proposing in this document.

DR. BECKER: Well, again, to restate: Our goal is to enhance peer involvement, and to enhance external scientific peer review. The only point I would like to make in defense of Dr. Vance is that he does make a point about quality assurance.

And so, I think that it's a legitimate point that he can assure the quality. But again, I would like to state, Dr. Glantz, that perhaps this was a miscommunication. I'll be glad to make sure that Lauren and myself and Bill sit down and iron this out, and get back to you on Monday.

DR. GLANTZ: Right. I think -- I appreciate that. But I think that if you change the operating procedures which have evolved over the last 13 years -- which this is a change in those procedures -- and those are procedures which have evolved in a way that I think has led to a very high-quality product in the end. You know, after all the public comments and meetings, after all this has gone through, we have put out reports that I think everyone can be proud of.

And that's the reason we, all of us, stay on this Panel. We were discussing before the meeting if we'll ever get up to getting paid minimum wage for it.

But the point is, it's very troubling if these things are not shared when we ask to see them. You know? I don't care what level they're at. I see lots of -- I have never seen any drafts come out of OEHHA that was crummy as some of my students,

And I think it's very important that there be a clear policy statement on your part as to what you think it should work. Because it worked well and it served the goals of this committee. You, yourself, said that the SRP process is one of the models that you were looking for. And I think it's a very serious problem.

And I think that it's an abuse of your -- or not an abuse of your prerogative; it's clearly not. But I think that it's a change in procedure that's going to reduce the scientific quality of the work and it's going to drag the process out and waste time, money, and effort on everybody's part.

DR. VANCE: Dr. Glantz, I assure you, it will not reduce the quality of the work, and it will not drag it out.

DR. GLANTZ: I'm not accepting it, because if somebody changes a procedure on me, I want to be told about it. And I don't think it's acceptable to change the

procedure. I want, speaking as a scientist, to be a participant in the process of developing these documents. And if I'm told that I cannot see a draft report that I worked on, that's not acceptable. And it's not acceptable for this committee.

DR. BECKER: We heard you loud and clear, and I will make sure that Bill, and I, and Lauren sit down and talk this out, and make sure there is no miscommunication out there.

CHAIRMAN PITTS: I don't think Lauren's involved. I think this is a high level management decision that has to be made, perhaps above your level -- I'm serious about this. Because we can't function -- I don't see how we can function or I, as Chair, can function in the situation that you've described. Because we were 13 years, and we have presumed, and we are -- it is a function which will -- which will degrade the ability of OEHHA, and the ARB, and the SRP to protect public health from airborne toxics. It's just that basic.

It's a real fundamental gut issue in airborne toxics. Are we producing -- are these agencies producing the finest risk assessments that can be produced, state of the art, where you've covered from people involved across the spectrum -- the staff, the researchers outside of it. And if we cannot do that, this is a very different ball

game, and it has to be understood that it is a different ball game, and that has to be resolved at whatever levels, Rick, that you want to resolve it.

But the level, at least as I see it in a sense -- I don't know if I'm speaking for the Panel, but I think I am -- am I speaking for the Panel? Is there general consensus, then, that this must be the case?

DR. GLANTZ: Yeah. I mean we have viewed these reports in many ways as our reports. We're the ones who have to give the final approval.

CHAIRMAN PITTS: That's the law.

DR. GLANTZ: He's the one --

CHAIRMAN PITTS: That's the law.

DR. GLANTZ: He has to sign, you know. And to that, you've added another problem I want to raise. And that is on the lead document.

DR. BECKER: Dr. Glantz, that will be coming up later.

DR. GLANTZ: Well, no, this is --

DR. BECKER: Okay.

DR. GLANTZ: -- the same thing. On the lead document, I have spent more time on this document than I can count. About a week ago, I went through the Part B, and I sent a letter to Dr. Pitts, and then it was forwarded on to you with a bunch of basically points of clarification that I

felt needed to be made in the document, and got back yesterday or the day before the responses to the specific issues I raised, which were by and large very responsive and very helpful.

But there were two items where there was no response. Okay? One of them had to do with the never-ending concern about how to characterize the uncertainty. And I called George up and talked to George about it, and he convinced me that they had already done what I wanted, and I just didn't read it carefully enough.

And I have now gone back and read it, and I agree with you, George, with one minor editorial change to avoid the confusion.

But the other point that I raised was a -- in the report, one of the issues in the report has to do with effects on I.Q. and neurotoxicity. And there was sort of a general statement in there that there were a couple of papers by a guy named Schwartz and Salkever about the effects of these changes in terms of economic impacts and productivity, and lost wages, and stuff like that.

And one of the things I asked for is, I said, add a couple of sentences at the end of the paragraph at the top of the page explaining how the application of the Schwartz and Salkever would affect California in terms of lost wages and labor participation. This information should also be

added to the Executive Summary.

And nothing was provided. And when I asked George about that -- and I hope I'm not getting you in trouble, George, he said he was ordered not to answer that one. Now, I find that very troubling.

DR. BECKER: I'll ask Bill Vance to answer that.

DR. VANCE: All right. This is the situation, that what we produce in Part B is a health assessment.

DR. GLANTZ: Uh-huh.

DR. VANCE: What you requested is the next level of assessment, which is an economics analysis.

DR. GLANTZ: Uh-huh.

DR. VANCE: It wasn't clear to me that that was part of the health assessment.

DR. GLANTZ: But you see, again, we're the ones who have to approve this document. And I think that's -- that's the judgment we're here to make.

We have spent -- I've been on this committee ten years, and had the difference between risk assessment and risk management pounded into my brain. And I think that's a good distinction.

I think that we -- our job here is to put the best science we can, in the face of great certainty, out there for other people to deal with. And I think that the judgment of what belongs in these reports, that's a judgment

for us.

I mean, we function -- I mean, I serve as an associate editor of a cardiology journal. And it's very much the same function of managing the peer review process that we're playing here. And if we go back to an author and say, "We want you to include this information in your paper," they include it. They don't say, "Well, we thought about it and we don't feel like it."

They either include it -- if they say that, we just say, "Fine. We'll reject your paper." Then it's okay.

Now, they can come back and say, "Well, we think the reviewer or the editors are nuts for wanting this, and we think it's not appropriate, and we think they're wrong, and here's the evidence for it."

And sometimes, as an editor or reviewer, you say, "Well, okay. I was wrong. Let it pass." Okay?

There are other times when you say, "Thank you for your opinion. Put it in or we won't publish the paper." Okay?

And you didn't even come back and make that argument. You just simply ignored it. And I put a lot of work into these documents and spend a lot of time working on this, for which I am paid about five cents an hour. Okay? And I don't like simply being ignored. And I think that when you look at this kind of behavior in the context of the

refusal to allow the SRP to see these documents early in the process, documents which have already been out for public comment -- I mean, I'm very, very concerned that there's a change in the way things are functioning over there.

And I happen to think and, as I said earlier, one reason I have stayed on this committee so long, and it's a lot of work, is because of the quality of the product which is produced, and because of the peer relationship with some very good scientific staff that you've got working for you.

And I think you need to rethink, you know -- not to be too obnoxious about it -- but you need to rethink the way you're running that place, because I think you're in for some real problems with me at least. And I think, if your goal is to enhance the quality of your product, you need to deal with the oversight of these products and the peer review that this committee produces in a way for people who have the ultimate responsibility for approving the report.

And, you know, I think -- I've heard your answer to that, and I don't agree with that. A couple of sentences to that point need to be in that document to understand what the true impact of that lead exposure is.

Now, if the risk management people look at that and say, "Well, that's nice. We don't care." Or, "That's not enough to worry about," or whatever. "That's a trivial cost, or even if it's a huge cost. . ." -- the cost of

dealing with it in the future, that is not my problem; that is not my business.

But, you know, I would like to see those two sentences written and put in this document if we have to write them ourselves in this meeting.

DR. VANCE: Dr. Glantz, you will not have to write yourselves.

DR. GLANTZ: Thank you.

DR. VANCE: Okay. I think what we have to be very careful about here is that we are now going beyond a health assessment in Part B.

If the committee wants to consider economic impacts, they might have to think about an additional document.

DR. GLANTZ: Well, I'm sorry. No. That's not correct. The health -- you know, we're looking at drops in I.Q. We're looking at --

CHAIRMAN PITTS: Could you read those two lines so the audience could hear what you're talking about.

DR. GLANTZ: Let's pull the document out.

DR. FROINES: I just want to make one comment. I don't know how I feel about the economic issue. But I really feel that when an SRP member raises a question, it should have an answer; it should not be ignored. That is disrespectful, and I won't tolerate that. That's

unacceptable.

DR. VANCE: It was not meant to be disrespectful.

DR. FROINES: It was. It was disrespectful, because you ignored his question. You cannot do that. Let's leave that as a given and go on with the discussion.

DR. GLANTZ: Okay. Just so the audience knows what we're talking about, I'll just read it. They're talking about the effect of lead on I.Q. And they say that the current -- it's some level, I don't know if it's a hot spot or the ambient air, whatever it is. And they say there'll be a total decrease of a certain number of I.Q. points with a range of a certain amount. And then it says, "Recent research, Schwartz and Salkever. . ." and I notice the Salkever citation was added in the revision, which is fine, ". . .provide some insight into the implications of I.Q. loss in terms of lost wages and labor force participation."

Now, that's in your document that you handed to me. Okay?

And I then said, "Add a couple of sentences at the end of the paragraph explaining how the application of Schwartz and Salkever's work would affect California in terms of lost wages and labor force participation."

So, all I'm asking for here is to take a statement that's in the document and just put it into the context of

California, which is what everything else in this document is done by.

And I don't see that as spilling over into cost/benefit analysis, or risk management, or anything else. It's asking to provide a bit of information which will help the risk manager get some assessment of what does this really mean, you know?

And I would hope that maybe over lunch you could write me those couple of sentences, because George and Bart and those guys know more about this than I do. But, you know, I just think your statements reflect a fundamental misunderstanding of the way this whole process works.

DR. VANCE: Dr. Glantz, we have the analysis, and we have the sentences written.

DR. GLANTZ: Excellent! That will save us all a lot of time.

DR. VANCE: Our concern was, again -- and please don't interpret this as disrespect --

DR. GLANTZ: Okay.

DR. VANCE: -- that the sentences that are written will be dollar amounts.

DR. GLANTZ: Okay.

DR. VANCE: Okay? It was my opinion that that went beyond health effects. Though dollar impact is a consequence of the health effects, we're getting just a

little bit off the track now with the focus of a Part B health assessment.

DR. GLANTZ: Okay. Well, I think that the sentence should be there. Now, if you want to ignore it, that's -- once these reports leave us, God knows what happens to them.

DR. VANCE: Dr. Glantz, I assure you, at the direct request of this committee, we have the sentences prepared, and we'll provide them to you today.

DR. GLANTZ: Thank you.

DR. FROINES: I have a problem with that Stan's saying. You know, I don't want to get into where everyone in the world is going to come in and say, now we have to be able to comment on the economics of this thing. I hope we aren't opening "Pandora's Box."

DR. VANCE: You're opening "Pandora's Box."

DR. FROINES: Because there are a lot of people who would like to slow these things down.

DR. GLANTZ: What I had expected to see there was something saying that it would affect the number of -- this number of people would be impacted, and there would be this many additional lost days of work or something. And to me, that's a health effect, you know?

I wasn't thinking in terms of dollars. You don't have to put a dollar sign in there. But how many people are

going to be impacted? We have how many people are going to be impacted with neurotoxicity. We have how many people are going to be impacted for potential cancers. We have how many people are going to be impacted with a variety of cardiovascular end points.

And I think it's completely reasonable to put in how many people are going to be impacted in terms of their labor force participation.

DR. VANCE: Okay.

DR. GLANTZ: If you don't want to put a dollar sign on it, I don't mind that. Let somebody else worry about the dollar sign. What I had in mind here was the numbers, just like the numbers you have for all of the other end points.

DR. VANCE: Okay. Then I misunderstood. We'll have that.

DR. GLANTZ: Thank you.

CHAIRMAN PITTS: Now we have communicated.

Dr. Byus?

DR. BYUS: I just wanted to say that I had the same thought when I read the document over several days ago about having the Schwartz data, at least several sentences, included, mainly about the lost labor force rather than the dollar figure, as an indication of the health effects of the cumulative loss of I.Q. I thought it was very appropriate

to put that in.

CHAIRMAN PITTS: Jim, Dr. Sieber?

DR. SIEBER: Maybe we could get back on the track of wrapping up the risk assessment in the committee report. And then I just wanted to point out, in case the audience is confused by this, the --

(Laughter.)

DR. SIEBER: -- the risk assessment, the committee recommends an open, transparent process with public involvement, workshops, peer review; everything is on the side of public involvement and transparency in risk assessment.

Now, how the Scientific Review Panel does its business is really a separate thing. And there's nothing in the Risk Assessment Advisory Committee report that speaks to any of the discussion that's gone on. This is how this committee works with staff and the different agencies; is that correct?

And I didn't want to get put in the position where the Risk Assessment Committee had said something that somehow was being used to change or modify the policy of openness, and perhaps you can pick it up.

CHAIRMAN PITTS: I might just add one more thing in regard to the report. It did compliment, I believe, the SRP on its effectiveness in putting out documents that were

scientifically sound, directed to the protection of public health from a public health aspect.

And so, from the presumption that they felt it was a model perhaps; then, in the model you see, that's what our concerns are, the model and how it has developed and is operating successfully. So, you can see our concerns in a major -- what we consider to be a major change in the mode of operation this represents. Okay?

DR. BECKER: I just reiterate that our goal is to enhance peer involvement and peer review, and enhance that level of communication. So, to the extent we have room for improvement, it's my goal, our vision, our objective to improve. And I think that's clearly where we're headed.

I'll do one more slide and then I'll end here. One of the things that we're working on actively -- and this is getting back to efforts that OEHHA has that complement the recommendations of the Risk Assessment Advisory Committee or are consistent with that. It has to do with training and improving the interface between the risk assessors and the risk managers.

The Risk Assessment Advisory Committee made a very strong point that there needs to be training for two reasons: One is that our own staff can stay up to date on scientific developments, so there was a recommendation about continuing education. And the other is to enhance the

training and understanding of the risk managers in risk assessment, so they can use these tools effectively and more effectively in making their risk management decisions.

The other effort that we have undertaken is one that dates back some time ago, at least to 1988 or so, when we were all part of Health Services, there was a coordinating group put together to try and coordinate the efforts of these various programs in the Department of Health Services to address at that point the chemical risk assessment issues.

That group will evolve or has evolved into the risk assessment coordinated work group -- and it is comprised of scientists, technical level staff from all the various boards and departments -- to come together and to try and coordinate their efforts in risk assessment, whether it's exposure assessment, or toxicity assessment, or hazard identification, or dose response evaluations.

And again, part of this reason is that we are taking more and more of a multimedia viewpoint on environmental contamination. This is what the data is telling us; that you can't just look up in the air, can't just look down at the soil, or can't just go into the water. You have to consider things as a whole. And this is one of our efforts to try and coordinate that.

One of these efforts will be -- the committee has

a very specific recommendation -- they seem to be satisfied with how this working group is functioning -- that there should be a subgroup or a similar type of group that deals specifically with exposure assessment across the various boards and departments.

And this was important, because it did appear that while the -- maybe the risk assessors and the toxicologists were talking, the exposure assessors maybe were not talking as much across these different boards and departments.

So, that would increase the consistency and help us leverage our knowledge across the various media.

DR. FROINES: I haven't told Jim yet, just in that respect, we have formed a Southern California Exposure Assessment Group made up of people from UCLA, USC, Riverside, and hopefully Irvine. I think that group -- it meets every other month to deal with research issues in exposure assessments. So, I think that group would be very interested in interacting with you.

DR. BECKER: And we would be very interested in interacting as well.

Well, on that note, I guess I will end my presentation of the Risk Assessment Advisory Committee. I'd like to ask Tom McDonald just to come up briefly. We have here -- and this is not on the agenda, Dr. Pitts. I hope you'll indulge me.

On behalf of the Office of Environmental Health Hazard Assessment and indeed of all Cal-EPA, we would like to take this opportunity to present this very small token of our appreciation to Professor Sieber for his dedication, hard work, and untiring efforts to share and bring to fruition this very important process -- a comprehensive external peer review of Cal-EPA's risk assessment practices.

The work of this committee will really serve to help guide us and keep us, California and our environmental assessment groups, in the forefront. And this is very, very important. For that, Dr. Sieber, we thank you immensely. Thank you.

DR. SIEBER: I didn't know this was coming.

(Applause.)

DR. SIEBER: I feel like -- first of all, let me reiterate. I didn't know that was coming. Thank you very much, Rick.

We did what amounted to a year-long assessment of risk assessment activities in the State of California. It was time consuming. It was a lot of work and a very interesting process.

But one group wasn't mentioned this morning. I think it was by Rick, but let me reemphasize it. It was the participation of State staff in the entire process. These were folks from the Air Resources Board, many of whom are

here in the audience. I'll just mention Genevieve Shiroma, Joan Denton, and others who were actively involved in the process; from the OEHHA group, Lauren Zeiss, George Alexeeff, Tom McDonald. Rick himself was a staff member then. He was not Director of OEHHA. He participated in all the meetings.

And I have to say, in this State, we can be unusually proud of the expertise and the interest and dedication of our State staff.

So, our discussion on the lead interaction I think kind of runs counter, because obviously the State staff is participating in these types of activities to the fullest extent.

I can say categorically, they were not held back in any respect. So, we want to make sure that kind of give and take between the scientific community, the peer reviewers, the risk assessors, and the State staff continues in the future. It was an excellent activity on behalf of the State staff, on the part of State staff.

And I don't know, Rick, you got a letter from Senator Calderon.

DR. BECKER: Actually, I didn't bring it.

DR. SIEBER: Well, I'd like to give it to you.

DR. BECKER: I just got word of it this morning on my way here.

DR. SIEBER: Jim, I don't know whether it's appropriate or not, but --

CHAIRMAN PITTS: I think it is appropriate.

DR. SIEBER: I think it should at least be mentioned, and perhaps Rick would like to quote from the letter.

CHAIRMAN PITTS: Why don't you quote it, Rick?

DR. BECKER: You want me to read the entire letter?

CHAIRMAN PITTS: Sure.

DR. BECKER: It's directed to me as the Director of OEHHA. It's signed by State Senator Charles Calderon, dated October 30th.

"Dear Dr. Becker:

"As the author of SB 1082 (1993), I want to commend OEHHA for the impending publication of recommendations by the Risk Assessment Advisory Committee, and urge faithful adherence to those recommendations in all pending assessments.

"SB 1082 indicates the strong desire of the Legislature to resist, 'junk science' and to adhere to sound scientific principles in the development of regulatory policy. That, of course, requires a complete review of

available scientific literature; and, as the Risk Assessment Advisory Committee recommended, adequate evaluation of the variability and uncertainty of the data underlying any assessment.

"I know OEHHA has limited resources and that meeting the mandate of sound science is exacting and time consuming. But it is imperative not to fall back to incomplete or unbalanced assessments which tend to promote special interest agendas rather than sound public policy.

"Sincerely."

And it's signed "Charles M. Calderon."

CHAIRMAN PITTS: Thank you.

DR. GLANTZ: Could I just ask one other question as my role as an unpleasant person.

(Laughter.)

DR. GLANTZ: I read in Nature and Science about document shredding, which is, I'm sure, your favorite topic. That really is very troubling. Again, if we're interested in having an open process -- I mean, I just never heard of that before in this context.

And I was wondering if you wanted to clarify anything for the record of the Panel?

DR. BECKER: I would love to clarify for the Panel; however, the staff counsel has advised me that on this issue in terms of particular questions -- because of pending litigation, that I should not provide any comment at this time.

He's not here, so I'll say something.

(Laughter.)

DR. BECKER: Let it be very, very clear. We have rescinded that policy. I have rescinded that policy as Director. We have -- that policy is history.

Beyond that -- I've probably said too much already. I have staff counsel.

DR. GLANTZ: That's okay.

DR. BECKER: I will say one other thing. Once the pending litigation issues are resolved, I can honestly say I look forward to talking with you and everyone else about this issue.

DR. GLANTZ: Well, just to follow up on that, would it be fair to say that the policy of openness now means that, if we request information or things like that from your staff, they will provide it as a general principle, which again is the way it used to work.

DR. BECKER: Well, this is not dealing with that principle at all. The general principle of enhancing peer involvement is an underlying -- I'm sorry -- it is a major

goal of our organization. So, we will continue to work carefully and closely with our peers, so we get the best quality scientific product that there is.

And that does mean interacting very closely. I can't again -- I wouldn't say staff counsel has beat me over the head, but pretty close to that, in limiting my comments on the other area.

DR. FROINES: I think that the important thing -- it seems to me that you've spoken very well at this meeting today, at least I feel that way. And I think that what we want to avoid is distrust. And when you have the policy that we aren't able to get documents until they've been reviewed at the top, and a two-year lapse from this committee meeting, without trying to characterize anybody's motive, it does create potential or an appearance that can lead to mistrust and concern. I think Stan is saying that.

And I think that what we want to do is to go forward and work together to resolve these issues. But I think you have a problem and you have to overcome that. Because there is tension in this room, and there has been tension in this room. We all knew there was going to be tension in this room, because we all know when we met last.

We all read the newspapers. We read the Nature article. And we heard Bill today say something quite directly, which actually adds to the concern.

So, I think that we have to, you know, put a needle in the balloon and let it kind of let the air out, and let everything cool down. And I think what we need is some real commitment to openness between this committee and OEHHA.

And I think if that's the guiding principle, we can go forward and work very effectively together.

DR. GLANTZ: And you know -- just to add, I absolutely agree with that. And I think that the one reason that we have produced -- by "we," I mean "everyone" -- have produced such a high-quality products from the scientific point of view, is that the process has been open. Information has freely flown back and forth -- or flowed back and forth between OEHHA, and ARB, and the members of this Committee, and the public through the public comment process.

And, you know, I sense a real effort to change that. And I think that, on the one hand, you're out here saying we want the best science, we want peer review. We want to bring everything up to speed as much as possible. But yet, I see on a day-to-day basis, things which are pushing in the opposite direction.

And I mean, there were times -- and this is true for every member of the committee -- when I've met with staff from OEHHA and ARB, and occasionally DPR, where

they've come to me for help in how to develop the reports, you know, and how should something be modeled, or how should the statistics be handled, or something like that.

And, you know, it's not something where they said, "We've got to get a draft and get it up for management review before we come talk to you."

It's been a very different kind of relationship than you're talking about. And I think that the changes that you're trying to make here are antithetical to your stated goals of making the science as good as possible.

DR. BECKER: I want to make sure that's clear. Our goal is to make the science as good as possible. We recognize the need for enhancing our interaction with our peers, and we hear your observations, your recommendations very loudly and clearly, Dr. Glantz, and from the other members. I appreciate that.

CHAIRMAN PITTS: Jim?

DR. SIEBER: One last comment. We worked with Rick very closely over the last 12, 14 months through this Risk Assessment Committee process. And I'll have to say that I was very impressed with his inputs and his knowledge of the large body of knowledge that we have to deal with.

And I'd like to say that, as a member of this committee, to Rick that we do look forward to working with you. And actually, I'm happy to see you in your position.

So, we're looking forward to it.

DR. BECKER: Thank you. I've been here since September 3rd; we didn't hear that.

(Laughter.)

DR. BECKER: Obviously, I face many challenges. And I do look forward to working with peers on this committee and peers on the other committees, and also other expert scientists throughout the nation and the world as we tackle these very difficult issues, as move forward and have the best science, to ensure again that the best science is brought to bear on the problems facing California.

DR. FROINES: I'd like to know what else is out there. We have lead, diesel, and ETS. What else is out there?

CHAIRMAN PITTS: I have even a more humane suggestion, and that's that we take a 15-minute break and return here -- a ten-minute break and return here at 11:30. How's that?

And then we'll address that issue.

(Thereupon, a recess was taken.)

CHAIRMAN PITTS: We will reconvene, please.

Dr. Froines, you were, at the time we adjourned briefly, you had some questions and some -- you have questions regarding the timetables. And Dr. Becker is here and remains. And we appreciate if you will come up and

discuss the questions that you have in mind to consider. Dr. Becker?

DR. BECKER: I will defer to the Air Resources Board, because I'm not up to date on that.

DR. FROINES: My question was very simple, which is where are we?

DR. BECKER: Okay. I will have to defer to them.

MS. SHIROMA: Good morning, gentlemen. How are you?

All right. The question is, what's in the pipeline and when you can anticipate seeing them in the future. First of all, if this Panel feels that our lead report is approvable, then we will take the report to our Board in March, the March Board hearing for identification of inorganic lead.

We also have a report in progress on the identification of diesel exhaust. We anticipate -- we and OEHHA anticipate releasing another draft of that document the March, 1997 time frame for another comment period and a public workshop.

I believe that we are on your December 16th schedule to provide you with an update on that work.

We also have a petition that OEHHA is reviewing on nickel. A petition was sent in on nickel as a toxic air contaminant.

And then, OEHHA has --

DR. FROINES: Is that for a revisit?

MS. SHIROMA: A revisit of the health value.

And the SRP has a full process, which we are utilizing, for dealing with a petition. And the first step is that OEHHA reviews the scientific information.

Then, OEHHA has a number of reports in progress pertaining to the SB 1731 legislation attached to the hot spots program, working on health values and risk assessment information for the toxic air contaminants and hazardous air pollutants. And perhaps, Dr. Vance, if you want to fill us in on that?

DR. VANCE: Well, I'd be happy to. What we have is an acute -- a document describing acute reference exposure levels, which has already been out for public review and comment and a workshop.

We have in the pipeline, I believe, a chronic reference exposure level document, and we are currently working right now very hard on a technical support document for exposure assessment and stochastic analysis.

We hope to be able to release that just before Thanksgiving for public review and comment. We'll also be having a workshop on that document.

DR. GLANTZ: When will there be internal review drafts for the diesel document that would be available to

the SRP to take an informal look at it?

DR. VANCE: Well, I don't have them in my office yet, Dr. Glantz, so I can't give a direct answer to that question right now.

DR. GLANTZ: Where is the Part A? What's the status of the Part A?

MS. SHIROMA: Well, I can give you a short update right now. We are working on the Part A now to update the ambient concentration estimate and also a near-source estimate, and also looking at the indoor/outdoor environment.

So, we're in the process now of folding in this latest information on these aspects.

DR. FROINES: The acute and chronic documents, are they -- do they include chemicals for which risk assessments are being done, or are they procedures, or what are we talking about?

DR. VANCE: George, would you like to respond to that? Then you can get a correct answer.

DR. ALEXEEFF: George Alexeeff with OEHHA. Actually, there are four major documents in preparation. One is the acute exposure level documents. That has actually gone out for public comment. And also, both Dr. Sieber and Dr. Glantz have interacted with that document. That one has had public comment, and we're revising it at

this point.

The chronic reference exposure level document is utilizing or looking -- we've reviewed the reference exposure levels that U.S. EPA's used, and you know, and adopting or proposing to adopt those that we think reflect the best science, and then adding additional chemicals that are HAPS. We're proposing to add additional chemicals using the same procedures.

And that document will -- you know, we're still in the process of preparing it internally, but below my level. And then the cancer --

DR. FROINES: Wait a minute, George, before you go on. That document will come to this committee for review?

DR. ALEXEEFF: Yes. The law requires it to come for review. And I think that when we first -- when Genevieve and I first presented to the panel the information that there were two laws passed -- AB 2728 and SB 1731 -- we appointed some Panel members -- at that time, we didn't quite envision how the process was going to work in the sense of how many documents there will be in that. And it may be some value in making sure we have enough Panel members to cover each document.

I think we appointed two people for 2728 and two people for 1731. And we haven't really divided it along regulatory lines. We've just provided along health and

exposure end points.

So, it might be good just to clarify who the leads are.

DR. FROINES: In the chronic reference exposure levels, how many chemicals are you talking about?

DR. ALEXEEFF: Over a hundred. And for the acute document, there was over 50.

And then, there's a third document on cancer potency factors, which doesn't derive any new values, but it simply sort of documents where all the existing values come from, particularly the U.S. EPA values.

DR. FROINES: I'd like to see a process happen where we took these three documents and somehow broke it down so that this committee, with say meeting every three months, and taking a part of one of those, and then meeting three months later, and taking a part of another one, and in a sense kind of make sure the process was facilitated, so that we don't get these long gaps where everybody forgets what happened two years ago.

So, if there's a way to structure this process, I think that would be helpful.

DR. ALEXEEFF: Well, as I think Dr. Vance pointed out, our next release is our stochastics modeling document. And so, all of our effort is focused on preparing and finalizing that document.

And the other ones are following behind as quickly as they can follow, finishing up the internal peer review and that sort of thing.

So, I don't think we're planning on breaking it down to smaller parts right now. But I do think that it's not clear, probably from my perspective, SRP leads that would be appropriate for each part. We actually have two leads on the acute document clearly established. And the other documents, it might make sense to go to two leads, you know, however we do the leads on the other ones, just so that one person or two people aren't bogged down with each document.

Each document will be fairly extensive, hundreds of pages with that many chemicals.

DR. GLANTZ: Are there any compounds in the pipeline for AB 1807, any new compounds, other than the ones we have talked about?

MS. SHIROMA: At this point, there are not, because the -- that first piece of legislation, 2728, took us through a process to identify all of the 189 Federal hazardous air pollutants as toxic air contaminants. And so, then, those folded into this 1731 process that George is referring to.

And so, that has been all of our focuses at this point, plus wrapping inorganic lead and diesel exhaust.

DR. GLANTZ: Would it -- I don't want to take too much time, because we've still got to do lead, and I don't want to leave here until it's done, because I don't want to wait another three years.

Would it be appropriate at our next meeting maybe to have as an agenda item a more formal review of all of this stuff, and maybe -- you don't need to redo it, but maybe bring -- you guys had done a priorities document for 1807 a few years ago, and maybe bring that back, and maybe look at what your overall plans are for all of this stuff in some context where we've had a chance the documents before the meeting and think about it.

Because, as you know, we have from time to time expressed views about priorities and stuff. And maybe we can do that at the December meeting with a little staff preparation.

I mean, is that reasonable or would that make a whole lot of extra work for you that wouldn't benefit much?

MS. SHIROMA: No, we'd be happy to do that.

I also neglected to highlight that we -- Joan's staff put together the compound summary report, the reference document that contains information on the various characteristics and aspects of these compounds, which help setting priorities and supplying information to the public.

DR. FROINES: Was that 244 substances?

MS. SHIROMA: Yes. Yes, that's correct.

DR. FROINES: If those deal with the exposure assessment, I want to look at those, because the amount of exposure information in those documents is vanishingly small, and it shows you something about the state of the monitoring that's going on these chemicals. There are 244 chemicals, and it's very striking, the lack of data.

I still always worry about this, because I still think that we do these lead and methylene chloride, perchloroethylene, and acetaldehyde, but we still at some levels don't know what the problem of air toxics is. We still don't have an overview of what we are dealing with in some ways, at least in my mind.

So, for example, we're dealing with diesel, but we know that in Southern California we produce an awful lot of nitro PAHs and the atmospheric chemistry between PAHs and nitrogen oxides. And so, in Southern California, we have nitro PAHs produced by atmospheric chemistry and we have diesel exhaust, and it would be interesting to me to know what is the scope or the mention of that particular problem, because a lot of those compounds are very potent carcinogens.

And so, what is the scope of that problem? We keep doing individual chemicals, but we somehow have a forest/trees problem I think. It would be worth -- just

that one alone would be interesting to try and think about.

DR. SIEBER: Let me add one other aspect. There's a lot of interest in particulate matter, and the small fraction of particulate matter, PM2.5, in changing regulations now. Whether or not that's part of 1807 is almost beside the point, because chemicals don't respect those distinctions.

There will be lots of air contaminants associated with particulate matter in different size categories. It's kind of related to both the lead and the diesel issues, and probably lots of others.

So, where is particulate matter in the new knowledge that's being generated now on particulate matter? How's that factor into what we're going to do the next year or two? You don't want to keep aside as a separate issue.

DR. FROINES: There's some extraordinarily interesting new toxicologic data on particulates that the people at Harvard are doing that shows particles having strong effects on animal models. It's very interesting stuff.

CHAIRMAN PITTS: Are there any other questions. Are we agreed then on what we will be discussing on this topic in December? Maybe we could clarify that. If not now, let's get together and decide how you want to present this in December.

Stan used the term, "and all that stuff." So, let's clarify some of that stuff. We can do it informally subsequently, but what is your view, what is your feeling now as to what you would like to present and we'd like to hear?

MS. SHIROMA: What I understand is that you would like an update at the December 16th meeting on our work in progress on this program, the AB 1807 program and the related 1731 program, the various products, some delineation as to who the lead members of the SRP are or will be for those various products; also a discussion of or a reminder discussion of the way we prioritize substances. We have a prioritization scheme.

Also some discussion of the context of all the work in the overall scope of the program for the toxics program. And perhaps we don't have all the answers on particulate matter, but perhaps some discussion on where we're heading with that.

DR. GLANTZ: The other thing that I'd like to do is to look at the old priority document that you guys had prepared, and to also get some sense of what's in the pipeline, not just what you're working today, but what -- you know, because this is a very long process -- what you envision coming into the pipeline over the next few months, what you anticipate starting to work on.

CHAIRMAN PITTS: Did you have in your request your question about bringing up diesel? You wanted some comments on the status of where we are?

DR. FROINES: Let's get John Holmes for all I know, but at some point, I'd like to know when we look at the South Coast Basin, what do we think is going on with nitro PAHs?

CHAIRMAN PITTS: Well, we can discuss that if you'd like.

DR. FROINES: And it's also a research issue, because Janet and Roger are working on it. But it seems to me that the question is, you know, what is the collective impact, and maybe nitro PAHs is one way to look at a little piece of that.

But I'm not proposing anything. It's just frustration.

CHAIRMAN PITTS: Is there some comment as to where we stand on the diesel report, specifically on diesel? The status of where we are on the, for example, the exposure -- Will we see that? Will that be discussed?

MS. SHIROMA: Yes. On December 16th, we will provide you with an update --

CHAIRMAN PITTS: Good.

MS. SHIROMA: -- OEHHA and ARB.

CHAIRMAN PITTS: Excellent. That will be right on

the agenda then.

MS. SHIROMA: Yes.

CHAIRMAN PITTS: And we will have the DPR report that's been deferred today.

DR. ALEXEEFF: It will just be a status update. It's not a discussion of a document.

CHAIRMAN PITTS: And any questions arising.

And in terms of diesel exhaust, you have tremendous amounts of compounds emitted, simple polycyclates and napthalene, and these are emitted. They react very rapidly in the atmosphere and they form 1-nitronapthalene. 2-nitronapthalene. They form nitrophe -- nitrones, which have among the highest mutagenicities of any organic ever tested. And these are right there, and they're measured. They're in the atmosphere. You're breathing them. And they're in respirable particles. In fact, they're particles less than one micron.

And so, they're there. And so the question is, how do these atmospheric transformations -- how are they involved and how do they fit into a sound risk assessment?

And so, that's the --

DR. FROINES: The issue is that we have a lot of nitro PAHs in diesel and other PAHs, and then we have the atmospheric chemistry going on.

And so, it seems to me we ought to look at that as

a common problem and say we've done a risk assessment on this common problem, and here's what the public just is affected by.

I mean, it goes to what is the danger of the real problem in Southern California, for example. And I kind of would like to say one thing that will make everybody nervous. I think at some point we should get an update on what's happening with MTBE, because MTBE is quite a major potential problem as you know.

All of Santa Monica's drinking water wells are now closed because of contamination. And it's in the air. And we are still waiting to see if Maltoni's lymphomas and leukemias can be confirmed. And if they are confirmed, then we have a major issue in California because of the widespread use of MTBE.

And so, the U.S. Geological Survey is very nervous about it, because not only does it get into groundwater from leaking tanks, but it's very soluble in soil. So, it just penetrates like a shot. So, there are a lot of major issues on MTBE. And we ought to have a discussion about it.

CHAIRMAN PITTS: Would you like to have that on the agenda for, say, December, also?

How about the one after this? We have a pretty full platter in December. But that brings up something else right now. It was mentioned by Dr. Froines and by Dr.

Glantz. We might really want to think, as we address these issues, that we sort of set up a formal every-three-month period, a meeting every three months. I can assure you if there's nothing on the platter, we won't need it. I'm not in favor of meetings that have no agendas.

But when we have agendas and new information, perhaps we can discuss this later. You know, this is not the time to discuss it, but let's get a sense of the Panel that this might be very useful to all concerned.

Yes, Jim?

DR. SIEBER: I think it's very timely, because when California ushered in the 189 HAPS, that changed kind of the way we do our business, because most of these compounds are on the HAPS list. I'm not sure whether MTBE is, but it ought to be.

Now what do we do? Do we just wait for EPA to act on these 189 or do we see a problem and go out after it? I'm certainly in favor of that.

DR. GLANTZ: I move that we start lead, because if we don't start, we won't finish.

CHAIRMAN PITTS: Get the lead out, right?

DR. GLANTZ: Yeah.

CHAIRMAN PITTS: Okay. All right. As a matter of fact, we will now move to -- let's see, is this only Item 2?

(Laughter.)

CHAIRMAN PITTS: The review of the proposed identification of inorganic lead as a toxic air contaminant.

MS. SHIROMA: Thank you. I'm going to introduce this item with pleasure.

We've got a good report before you today. Again, you know my name is Genevieve Shiroma. I'm the Chief of the Air Quality Measures Branch at the Air Resources Board. It's my staff that's been working on the exposure portion of this assessment, the Part A.

You know Dr. Joan Denton to my right. And to my left, this is Jeff Wright, who is the staff person responsible for seeing the report through fruition.

Now, where we last left off with the Panel, you had approved the entire report, except for the REL, the reference exposure level, discussion in the Executive Summary and the Part B. And your instruction to us and OEHHA was to reevaluate this portion of the discussion and send the material back out for public comment.

Now, Dr. Bart Ostro from the OEHHA will be summarizing that effort. Now, in the meantime, during the ensuing time, we did take another look at the Part A and have updated certain portions of Part A exposure assessment to reflect the most current information.

So, Jeff Wright will be walking you through the public process that we've used, and the proposed changes we

have made to the Executive Summary and Part A on the exposure discussion.

And then, we'll also provide a summary of the comments we received on the Part A and then our responses to those comments.

It's a very short presentation.

MR. WRIGHT: Thank you, Genevieve.

Good morning, Dr. Pitts and the other members of the Scientific Review Panel. As a reminder, inorganic lead entered the identification process back in February of 1991. Without discussing each box in the overhead in detail, I'd just like to point out that the document has gone through six different public comment periods, the last of which ended last week; three separate workshops, the last of which was held during March of this year.

It was attended by Dr. Pitts, and is now before the panel for the third time. If the Panel approves the report, the staff plans to release the report again in February of 1997 for a 45-day public comment period, and bring it before the Air Resources Board at a public hearing during March of 1997.

Now I'd like to talk about the exposure assessment and changes to the document starting with --

DR. GLANTZ: (Interjecting) If we approve the report today, why does it take until February to release the

thing for public comment?

MS. SHIROMA: Okay. If you approve the report and finalize your findings, it is the logistics of taking this report, Part A and Part B, folding it into a staff report that then goes on to the Office of Administrative Law for final --

DR. GLANTZ: Okay, okay. Never mind.

(Thereupon, both parties spoke simultaneously.)

DR. GLANTZ: I give up. Never mind.

MS. SHIROMA: We've minimized our --

DR. GLANTZ: I give up.

MS. SHIROMA: Okay.

DR. GLANTZ: I give up. You won hands down.

MR. WRIGHT: Okay. Changes to the Executive Summary: Besides minor grammatical and technical clarifications, the changes in the Executive Summary reflect two main points: one, changes in the emission estimates, which I'll describe shortly; and, two, information from Part A clarifying the near-source monitoring is now included in the Executive Summary.

Also, please note that acetaldehyde and BaP were inadvertently left out of Table 1 on page 17 of the Executive Summary. These will be added in the final version.

The most significant revision to Part A is to the

emission inventory. This overhead is Table III-1 in Part A. As a result of updating our emission inventory, six further defined source categories have been added to the table and they're denoted by italics.

The largest change in the emission estimates is the contribution that stationary point sources have to the total estimate.

Stationary point sources went from contributing approximately 160 to 280 tons per year, as estimated in our August, 1993 version of the report, to about 26 tons per year out of a total California estimate of 175 to 182 tons per year. This total estimate is approximately a 45 percent reduction of the total estimate in our previous version of the report.

Now, I'd like to summarize the comments --

CHAIRMAN PITTS: Could I just --

MR. WRIGHT: Sure.

CHAIRMAN PITTS: Let me just interrupt for a second. This is relevant to the comments I made earlier on. As you point out in Part A, not to put too fine a point on it, which is relevant to the way we have an indicator on the board, in the context with a pencil indicator -- just a little modest humor. All right.

That number, and these are the numbers we quoted earlier, that the California estimate is 172 to 182, of

which the mobile aircraft -- this surprised me -- is 149. That's a lot.

Then, when you come down to the EPA's number that was prepared by TRI, you wind up with a total of 8 instead of 182. And, of course, they have left out mobile sources. And hopefully, the aircraft are indeed mobile, especially when you fly on them.

Okay. But that's just an illustration of the point I was trying to make here that it's very important that the categories -- well, I guess back to your emission inventory sources, this group you've put together, what are the emissions? What's involved with the total? I didn't mean to interrupt, but it's an example there.

DR. FROINES: Brass foundries are included under foundries and steel mills?

MR. WRIGHT: Yes, that's correct.

DR. FROINES: And secondly, why is it that only grid casting and lead oxide reduction? Because, when you're in a battery plant, which I've been in -- unfortunately more than I would ever like to be -- there are a lot of sources of lead besides grid casting and lead oxide production.

MR. WRIGHT: As I understand, that's just all the information that we have as far as emissions. So, there could be other emissions. We just don't have data for that.

DR. FROINES: Because those are processes. Grid

casting is supposed to be a process, and so is lead oxide production. And you would think that you would -- it would be like a process of 10 parts, say, that you have information on two of the parts? It seems like you'd have information on all of the parts.

But it's not a major deal. I don't want to slow us up. It's just interesting.

MR. WRIGHT: Now, I'll summarize the comments received during this last comment period on the exposure assessment. Dr. Bart Ostro will summarize the health assessment comments during his presentation.

We received one comment from the Natural Resources Defense Council. Their comment is, they would like more information about the degree of protection that OEHHA envisions, and that it be included in this document.

The staff response is that OEHHA's provided a scientific assessment based on the existing information, but the degree of protection for these children will be a risk management issue.

And we have received five comments from the Lead Industry Association.

Comment 1: The estimate of 2500 individuals exposed to a near source concentration of .20 micrograms per cubic meter has no basis.

The staff response is: The analysis LIA is

referring to comes from our near source analysis in Part A. Table IV-4, page 60 of Part A, shows that 2,000 individuals in the near source estimate were used instead of 2500.

Next, the table shows that approximately 2,000 individuals could potentially be exposed to a minimum of .03 micrograms per cubic meter and a maximum of .2 micrograms per cubic meter.

For the purposes of the near source analysis, we used the upper end of the range. We note that Tables IV-5 and IV-6 show that concentrations at this level are not unreasonable.

Comment 2: LIA objects to the characterization in Part A that near source monitoring results conducted near the two secondary lead recycling facilities in Southern California showed significant concentrations near the facilities without qualification as to the meaning of the term "significant," and t hey want the 52 value removed from the document.

The staff response: These monitoring results are viewed as significant, because they were 52 times higher than the surrounding ambient concentrations, and were over our ambient air quality standard. We believe the example is informative; it could occur, but have placed this example in context as far as its occurrence and possible causes.

The third comment: LIA believes that relying on

emissions data from 6 to 7 years before the implementation of the South Coast Air Quality Management District Rule 1420 is inappropriate.

As I presented before, we have updated the emissions inventory to include Rule 1420 data. During the risk management phase, we will do a thorough evaluation of source contributions to the ambient air.

MS. SHIROMA: And by the way, the response to Dr. Froines' about the battery operations, there again, in the risk management phase, we can work on providing a more comprehensive updated inventory.

MR. WRIGHT: The fourth comment: LIA objects to the characterization that stationary area sources release small quantities of pollutants from many closely located sites over a relatively large geographic area, and find this to be confusing and unfounded.

We agree that this sentence is confusing, and it will be removed, as it is not pertinent to the discussion.

CHAIRMAN PITTS: Where's that?

MS. SHIROMA: Page 25, in the first paragraph under 3, Stationary Area Sources.

CHAIRMAN PITTS: Page 25, what line?

MS. SHIROMA: Page 25, it's the first paragraph, first sentence.

CHAIRMAN PITTS: Why are you excluding that

statement? Is that statement wrong, or is that statement incorrect about the statement?

MS. SHIROMA: Well, in looking at the whole paragraph, I think the commenter felt that we were trying to apply this sentence to the current situation with potential lead sources. In looking at the whole paragraph, we thought that the discussion in the rest of the paragraph is clear and, if that first sentence is confusing, it does not take away from the paragraph by removing the sentence.

CHAIRMAN PITTS: Why can't you be specific and say specifically, "Stationary area sources of lead release quantities of pollutants," if you want to say small, or "significant quantities of pollutants. You have numbers that make them significant, .24 micrograms per cubic meter, .36 of a mile away from the source, over a relative large area -- you might want to define what that is. "Relatively large" is the term that could be quantified somewhat more specifically.

It seems to me that's an important point. As a matter of fact, the most important impacts of lead are -- aren't they rather stationary area sources with --

MS. SHIROMA: I think this is the terminology. The stationary point sources are such things as -- whether it's cement manufacturing, or smelting, or battery manufacturing, or what have you.

The stationary area sources are --

CHAIRMAN PITTS: (Interjecting) Oh, I'm sorry. You're talking about --

MS. SHIROMA: -- such things as landfills, public lands, and so forth.

CHAIRMAN PITTS: Great. How about if you define stationary area sources such as, "such as. . ."

"Such as," and then you clarify the statement.

MS. SHIROMA: Yes, we can do that.

CHAIRMAN PITTS: No one should object to that. That's just defining what you're --

MS. SHIROMA: Rather than delete the sentence, we'll rework the sentence.

CHAIRMAN PITTS: Yeah. Just clarify that so even I can understand it.

MS. SHIROMA: Will do.

MR. WRIGHT: Comment 5: LIA states that the report fails to reconcile the revised emission estimates with the prioritization criteria found in the California Health and Safety code. If reconciled, lead would rank as a low priority for evaluation.

The staff response: Prioritization occurs before substances are entered into the process, and we believe it is appropriate to continue the process. However, even though the emission estimate has been revised and is lower,

it does not result in raking lead as a low priority, because emissions are only one of five factors considered in prioritization.

And that concludes my presentation. We'd be happy to answer any other questions you may have.

DR. WITSCHI: Yeah. I have a question. But this decrease from the last time, you know, from about 750 to 470 tons to 180 tons, is this real or is this the calculation?

MS. SHIROMA: It is real, in that Rule 1420 in the South Coast came to fruition, began to be implemented, and the requirements in the rule are several fold -- whether it's ambient monitoring or inventorying of the emissions, and Jeff or Joan can elaborate on that.

So, Jackie Johnson, who is on maternity leave, on this project, went down to the South Coast with staff, went through all of the records and plans of the various specific company files to update this emissions inventory. And Joan has more data on that.

DR. DENTON: This is Joan Denton with the Air Board. Besides the Rule 1420, we also used updated data from our 2588 database. And we did not have this information available before in our earlier emission inventory. So, we also used data from that eight-tenths (phonetic) database to update the emission inventory. And that's the hot spots inventory from the 2588 hot spots data.

DR. WITSCHI: So, this is real then.

DR. DENTON: This is real data.

DR. WITSCHI: Yes, but I also mean this means that within the last three years, we've seen a substantial reduction of lead being put into the environment. That's correct?

MS. SHIROMA: I think it's a combination of seeing, yeah, the good news being there has been a reduction in lead emissions. Also, we acknowledge that our state of knowledge in the first draft report was based to some degree on extrapolation and estimation.

So, we're not certain how much of that original estimate was actually emitted. But basically, we do know that there has been a reduction in emissions.

DR. WITSCHI: Any other questions?

DR. FROINES: I think the data is important, because as you look at lead from a pollution prevention standpoint, instead of strictly as a control strategy, you really want to know where the lead is found, because then you can figure out some way to do something about it.

So, it seems to me that we need at this point history to start thinking about pollution prevention as we go forward with these documents.

DR. WITSCHI: Any other comments on Part A?

MS. SHIROMA: Then next, is Dr. Bart Ostro, who

will provide a presentation on the Part B. And if there are other questions on Part A that you think of along the way, we'd be glad to come back.

CHAIRMAN PITTS: It seemed very comprehensive and it's a first-class job for an exposure assessment of lead. I think this is sort of a model again, which the EPA might test its current procedures in establishing emission inventories and exposures to the public in 49 other States.

MS. SHIROMA: Thank you.

DR. WITSCHI: Do you have any comments on the exposure assessment of the lead?

DR. GLANTZ: No. But I'll make up for it on Part B.

DR. FROINES: And the world breathes a sigh of relief.

(Laughter.)

DR. WITSCHI: Okay. I think now we go to the health effects part. It might be well to remember at this time that it was lead who broke down the Roman Empire. So, it's a rather important topic.

Let me also say at the beginning that, when reading Part B, I was very favorably impressed by the thorough review that had been done by the staff, really keeping up in the literature, to the news that came out. So, I think you have to be commended for the good job you

have done. Okay.

DR. ALEXEEFF: Hello. I'm George Alexeeff with the Office of Environmental Health Hazard Assessment. And we'll be presenting our revisions to Part B and briefly discussing the comments that we've received and our responses to them.

What I asked Dr. Bart Ostro to do was to give a very brief presentation as to sort of where we left off in January of '94, and what has changed in the document and what are the key issues in the document.

So, we'll give that presentation and then you can ask additional questions to -- if you want more detail, because this is something that could take a long time, but I've asked him to give a brief overview.

DR. OSTRO: Okay. We have reviewed and evaluated the health effects of inorganic lead to determine whether lead should be classified as a toxic air contaminant.

In attempting to assess the risks of lead, we were very fortunate, in that there's a large amount of literature, literature both from the epidemiologic field, toxicology, clinical studies, and occupational studies to draw on.

Now, just to repeat what Genevieve has indicated, we last met in January of '94 to discuss the December, '93 report. And the SRP recommended at that time that the

report be revised with respect to development of the reference exposure level, the REL.

Now, two points to begin with is that we've known for a long time that lead in the environment will ultimately be associated with lead in blood. And perhaps the best evidence indicating the association between blood lead and air lead was provided many years ago in this graph, which looked at the amount of lead in gasoline and the associated amount of blood lead in children over a four-year period.

So, there's two things to note from this. First, that the association is a very strong one, and apparently a fairly immediate one. But, second, that lead has decreased drastically over this four-year period. And if we could extend this graph for another 10, 15 years, this graph would nicely continue down. Both blood leads and air lead levels have dropped drastically since the mid-seventies.

So, in fact, as we indicate in our document, when we look at the blood lead data from the NHANES study that was conducted in 1976 to 1980 versus the NHANES data from 1988 to '91, we see about an 80 percent decrease in blood lead in most of the population. We know that other changes have occurred. Lead in gasoline has now been eliminated. In some parts of California, we have seen about a 30-fold reduction in air lead since the mid-seventies, and that lead has been reduced from other sources of exposure as well.

And OEHHA does believe that the current ambient concentrations of .06 population-weighted, based on data from ARB, that air lead blood levels is a relatively minor contributor to overall lead exposure.

Now, let me go back and review the methodology that we used to evaluate the risks in this process. And the darker boxes are trying to indicate the revisions from the last version, just in case you don't remember. Basically, we looked at three different end points -- cancer, neurodevelopmental effects, and blood pressure effects. These are the effects that we believe are occurring at the lowest levels of lead exposure.

And basically, nothing has changed from the document that relates air lead to direct inhalation and cancer effects. The changes are all related to blood pressure and neurodevelopmental effects.

And we've done a number of changes since then based on the current scientific evidence. You recall that blood pressure effects and neurodevelopmental effects are related to blood lead in the literature, not related directly to air lead.

So, we need to have some kind of pathway that associates or some kind of model that associates air lead to blood lead.

In our last version of the document, we used what

we call the aggregate model, the multipathway aggregate model that looks at the direct effects of inhalation as well as the effects of lead emitted into the air that might end up in the soil or in household dust. So, we consider it a multipathway model.

We've maintained that model, and we've reviewed the literature and tried to update the studies, and narrowed the criteria that we would use in developing a slope that would relate air lead to blood lead.

Also, since that time -- so, we have this aggregate model predicting blood lead, which then relates to blood pressure and neurodevelopmental effects.

Since this time, we've also -- based on some comments that we received as well as an updating of the scientific information, we've also used EPA's IEUBK model, the integrated environmental uptake and biokinetic model, something like that. It's got some of those words in there.

(Laughter.)

DR. OSTRO: Integrated exposure uptake and biokinetic model.

And so, we've used that model also to relate air lead to blood lead as a way of both providing independent assessments of the association between air lead and blood lead, as well as to see how that performed relative to our slope estimates derived from the aggregate model.

Another change I think we've incorporated is the blood lead concentrations. Remember, last time, we had a big discussion about what were blood leads like in California. There wasn't very much information at that time. And, unfortunately, we still believe that, for California, per se, we do not have representative data.

So, what we have used is what we think is the most representative data for California, which is the NHANES 3 data, which exists for the nation. This is a nationwide population-weighted data set with a good deal of quality control, duplicate sampling, and so on. And we believe that the results of the mean blood leads and the distribution of blood leads based on that NHANES 3 are fairly representative or likely to be fairly representative for California.

However, we quickly will add that it turns out that we could make other assumptions about geometric mean and geometric standard deviation, and they do not affect our overall quantitative conclusions.

Now, let me go through very briefly, as George said, what some of the changes in the report are. First, we did go back and look at the reference exposure level as the SRP asked to, and we eliminated the reference exposure level.

If you recall last time, we had assumed a level of about 4 micrograms per deciliter of the mean blood lead.

And then, we asked the question: How much air -- additional air exposure would we have to have to drive the mean from 4 to 10, and we added some safety factors and provided an REL of about .75.

Since that time, we now have this NHANES 3 data, which now gives us a general picture of the overall distribution of blood lead. So, rather than provide a specific reference exposure level, we now indicate what the effects of this distribution of blood lead.

So, we'll get into more of that in a few minutes.

Second, regarding the blood lead/air lead relationship, as I've indicated, we've reviewed the studies. We've incorporated the latest studies, and a tighter criteria was applied for using the aggregate model. Basically, we wanted to make sure that we had blood lead levels in the two populations that we were going to be comparing and air lead levels of both populations that we could be comparing.

And then, from that, we could then determine how blood leads would change with air leads. There were several studies available that did not have information like the means or the air leads. And we felt that those would not be appropriate for determining a slope.

And we've also provided estimates, as I've indicated, using the IEUBK model, the U.S. EPA's model. And

this model starts with a whole different set of assumptions. It's basically a software model, a stand-alone software model, that can be used on the P.C. It accounts for specific intake and uptake, and distribution of lead in the body, and also specifically models biological interactions of absorption, distribution, storage, mobilization, and excretion. So, it's a nonlinear model with an entirely different set of assumptions than the aggregate model.

So, as I indicated, we looked at the relationship between blood lead and air lead using both of those models.

Regarding the neurodevelopment effects, first, we incorporated the latest information for NHANES 3 regarding the geometric mean and geometric standard deviation.

Second, we now provide estimates for the percent of the population that will be moving above 10 micrograms per deciliter, which is the CDC level of concern that we concur with as a level of concern.

So, we now provide estimates for the percent of the population -- mostly the percent of children that will move above 10 micrograms per deciliter at alternative air leads.

And we've also really not changed -- we did this in our last document. We looked at the direct effects of blood lead on I.Q. and present those estimates as well.

Regarding blood pressure, the effects of blood

lead on blood pressure and more serious cardiovascular outcomes, basically -- again, there's been a lot of literature since 1993, and we have added that literature. There have been several analyses that support the association between blood lead and both diastolic and systolic blood pressure, and support the relationship between blood pressure and more severe cardiovascular outcomes, including heart attacks and death.

We've also added uncertainty estimates to our model.

Regarding cancer effects, basically no substantive changes.

And finally -- I shouldn't say "finally." I have one more slide.

Another recommendation that we see in the report is that multipathways need to be considered; the recognition that lead is indeed a multipathway problem. And more specifically, we indicate that the IEUBK model may be useful if there are site specific information and if one wishes to do a multimedia risk management evaluation, we could look at reductions in air lead or other sources of lead.

And in the document, we have provided some suggestions and a little bit of guidance on how the IEUBK model can be used in this regard.

Now, let me just skip most of what I was going to

present and just talk mostly about the alternatives to the REL. And then, if people want to get into other things, I'll be happy to do that.

As I mentioned, as an alternative to the REL, we looked now at the change in blood lead levels, the change in the number of children -- one- or two-year-old children -- that will move above the 10 micrograms per deciliter level of concern.

For our analysis, we used the NHANES 3 geometric mean and geometric standard deviation for the national estimates. Again, we incorporated the 10 micrograms per deciliter level of concern. And, as I've indicated already, the results, in terms of the additional people that will be driven above the 10 micrograms per deciliter level, those results will not be affected by different assumptions about the mean and the standard deviation.

Clearly, they will affect the baseline number which are due to both air lead and many other sources. But assuming some level is given, we're looking at what the change would be above the current baseline level, because of properties that allow normal distribution -- basically, the changes in the percent of the population or the percent of children that will move above 10 micrograms per deciliter are unaffected by those assumptions.

Now, we can look at it graphically and in table

form, but to graphically first. Our Figure 5.3 in the document looks at three different models. Not only do we have the aggregate model, but we actually have two different IEUBK models based on different parameters those models have.

And this table indicates for different air lead concentrations what the percent of one- and two-year-olds who will be above micrograms per deciliter. So, basically, you could look at this graph, and try to get a feeling for what increases in the number of children would be at alternative air lead levels.

DR. SIEBER: And we're assuming there that, since they don't go to zero, that the other sources would be dietary, or lead paint, or --

DR. OSTRO: Lead paint.

DR. SIEBER: That is in addition to the air lead contribution.

DR. OSTRO: Absolutely. The NHANES 3 data suggests that currently for the population of one- and two-year-olds, there's been 11 percent of the children above 10 micrograms per deciliter. And we did some back calculations assuming our own slope. Suppose we went to zero lead in California, how many kids would be above 10, and it still would be about 9 or 10.

So, clearly, totally wiping out air lead, you're

still going to have a large number of children above that.

Now, if you like confusing tables instead, here is the three different models -- the aggregate model, the two different IEUBK models -- this first model here I blew up just because I've been told it's not good to present tables like this in public.

So, this is a blowup just of the aggregate model, so it's an abridged form of Table 5.2. And I just want to use it for an example of what the information is.

DR. GLANTZ: I noticed in the report that, while you presented all three models, and discussed them briefly, the numbers in the text and the Executive Summary and all that are all based on the aggregate model.

Could you explain why you did it that way?

DR. OSTRO: I don't think that's true.

DR. GLANTZ: Or I didn't understand? Okay.

DR. OSTRO: For example, we talk about the increase in the number of children when we go from a zero level to 0.6, and we say the range is .6 to 2.3. So, it incorporates the range of the three models.

DR. GLANTZ: I see.

DR. OSTRO: So, I can't say that for every estimate we've carried through all those calculations, but we've tried to incorporate the uncertainty brought about by the different models.

Remember, for the blood pressure effect, these things -- we'll use the aggregate model. The IEUBK model only predicts up to age 7. So, we really can't use it for the blood pressure. But for the I.Q. effects, we tried to incorporate that uncertainty.

DR. GLANTZ: Okay.

DR. OSTRO: So, let me just take you through the aggregate model. As I indicated, our current level of .06 annual average for California as a whole, if we use the NHANES data for 1 and 2 year-olds, 11.5 percent of the children would be above 10. We back-calculated and found that zero, we're expecting about 11 percent.

And then we look at different air lead levels and indicate that, based on our -- the effects of how the whole distribution of blood leads are moving, we've indicated what the new percent of children above 100 micrograms per deciliter would be. And this column is simply the difference between the rows -- this is the net change over zero air lead.

So, one could simply look up on the table and indicate what the impacts would be on the percent of children above 10. So, going from zero to .06, you can see there's about a .6 percent increase. And going from say 75 to 100, there is an associated increase here.

Okay. So, I also have some estimates provided in

the document on what the effects are in terms of I.Q. effects, distributional effects of blood lead, and hypertension and blood pressure effects at .06. But I think maybe in the interest of time, I will -- unless there's a specific request to do so by the Board, I will stop at this point.

DR. WITSCHI: Thank you very much. In reading some of the comments we received, there were two things that struck me, which were uniform. I'm not going to go into any details.

But one of them commented that those changes in I.Q. are really too small to be of practical importance for individuals.

And the other comment, which was raised several times, was the changes in blood pressure are the same thing, and maybe not even exist.

Would you address two questions, please. The one is, how confident you are in the evidence that the increase in blood pressure is a real biological phenomenon? And the there one, how to translate small changes for individuals into a problem?

DR. OSTRO: Okay. Regarding the I.Q. effects -- first, regarding neurodevelopmental effects, basically, the question is, how sure we are that something is happening.

UNIDENTIFIED VOICE IN THE AUDIENCE: The

microphone is not working. We can't hear.

DR. OSTRO: Okay. Regarding the neurodevelopmental effects, basically, they're based on epidemiologic evidence relating blood lead to I.Q. And in epidemiology, we always will have problems in measuring both the dependent variable and the independent variable of concern here.

But our evidence is based on the three long-term prospective cohort studies that have been undertaken, over about a 10-year period now, involving thousands of individuals. And the best evidence that one can do -- the best way to provide evidence in an epidemiologic study, I believe, is to basically replicate the study with other conditions, with other populations.

So, we can think of this as three separate studies where the findings are very, very similar. When we look at the population of children in the six- to ten-year-old age group, the latest set of data using a similar I.Q. test, the WISC-R, we found that each of the studies report a very consistent association between blood lead and a change in I.Q.

So, this gives us a lot more faith. If we only had one study, we might be a little bit more concerned. But this gives us a lot more faith in the estimates. And what we've done is we've combined estimates from the three

studies to generate the estimate.

Now, we agree that on an individual basis, the I.Q. effects that are estimated will be quite small at the .06 level. As our table indicates, though, if you go up to higher and higher air lead levels, which are at least possible under the current lead standard, the consequent I.Q. effects would rise accordingly.

So, one has to think of these things more on a population basis; that is, the effects on any individual might be zero. But for the population as a whole -- and then children will respond differently. But for the population as a whole, there are these total number of I.Q. effects.

DR. SIEBER: That's certainly true. I agree with it. But there's no estimates of uncertainty in here. I.Q. values, for example, in Item 15 in the proposed summary of findings, there are no uncertainty intervals around the average, which I believe is 1.32 I.Q. points. So, it might give the false impression that we know that number was -- in fact, there's got to be some uncertainty there. Is there any way to describe this uncertainty with that?

DR. OSTRO: Absolutely.

In the document itself, we do have uncertainty estimates. We have 95 percent confidence intervals. So, if that's not reflected in the summary or the findings, we can

make sure that that is. Okay?

But we do have 95 percent confidence intervals for the I.Q. effects in there.

Now, regarding the blood pressure effects, the same thing is the case, but even more so. For this, we're drawing on roughly 15 or 20 studies that relate blood lead to blood pressure.

And since our last document, there have been two meta-analyses as well, both indicating that for -- in some of those studies, the population is 20 to -- age 20 to age 70, but we took a narrower band of age 40 to 59; that there is an association between blood lead and blood pressure and again between blood pressure and more serious cardiovascular outcomes.

Now, we took the 40 to 59 year old age group, because we thought that the evidence was strongest in that group. And many researchers have specifically looked at only that age group. The reason being is that, if you look at a wider age group -- between say 20 and 70 as some of the studies have done -- age is increasing, but that's related to blood lead, because there's a blood lead age profile, and there's also an age blood pressure profile.

So, by narrowing the age band, you're reducing the effects of confounding by age. So, while some researchers have indicated that there are existing effects for the wider

population as a whole relating blood lead to blood pressure, we decided to focus on the 40 to 59 year olds.

Now, the estimates are higher for the 40 to 59 year olds, as you might expect; so, if you wanted to extrapolate to a wider population, which we did not do, I would guess that the effects per unit would drop.

So, again, to just finish the response to Dr. Witschi, it's the same idea that some individuals will be responsive, some will not, probably because of genetics and personal differences, and so on, behavior patterns, activities, and so on, medication.

So, one should look at these more on a population basis than on an individual basis. So, we've tried to indicate what the effects were per person as well as the effects for the population as a whole.

DR. WITSCHI: Thank you. Are there some more questions?

DR. ALEXEEFF: Can I just make one comment?

DR. WITSCHI: Yes.

DR. ALEXEEFF: I think we should just comment on our response to comments that have come in. So, I think Bart was asking if there were some additional clarification needed on those slides.

So, if there aren't, I'd just like to mention the status of the response to comments.

Okay. We received comments from the Gradient Corporation on behalf of ARCO, also a comment from -- a series of comments from the Lead Industry Alliance and a number of associated companies and industries with that, and also from the Natural Resources Defense Council.

We summarized these comments, and they're provided in the back there, and they were sent to the Scientific Review Panel members earlier, a couple days ago.

And the summaries provided were focused, but we did thoroughly review the complete comments. But in terms of our responses, we focused on the summary comments that each of the commenters provided.

And so, we looked at their major points, and we looked at their documentation for those major points, and tried to make sure we answered them substantially.

So, I don't think there's a need for me to go through our responses, since these have been available out in the back and to the SRP members for a couple of days.

And there's only one that has -- we had a slight change on, and that is the response to the NRDC comment, where they asked us to add some additional health effects that -- or they had concern about additional health effects. Other health effects were overlooked.

And so, we went back to look at our document. Our document focuses on the three effects that Dr. Ostro

mentioned -- carcinogenic effects, neurodevelopmental effects, and the cardiovascular effects.

But in the Chapter 2, we have sort of a brief summary of the overview of health effects. And in looking at NRDC's comments regarding adding some additional health effects to the document, almost all the ones they suggested are in Part 2 already. Okay?

There's a couple that we feel we did omit, and we would like to add in. And one was that result regarding postural sway; there's a relationship between lead and postural sway. And we thought we'd add a sentence with regards to that, that lead at low levels has also been associated with postural sway, and that's a study by Bhattacharya and associates.

That's all we would say about that. These are very summary comments.

And then the other issue that we thought we should add in was -- had to do with hearing acuity. And so, what we're going to add is a -- again, in Part 2, a very, just brief statement that lead levels of 10 micrograms per deciliter and below have also been associated with decreased hearing acuity. And that's due to the studies by primarily Schwartz and Otto.

So, there's a couple health effects that we weren't able to verify, birth defects and spontaneous

abortions. So, we weren't going to add those into the document.

So, that's the last, the only change to the response to comments that we have here.

DR. FRIEDMAN: I'd like to first compliment Dr. Ostro for a very lucid report. But my question is: In calculating the effects of the raise in blood pressure due to lead, you focused mostly on heart attacks and cardiac disease. Hypertension is at least as strongly related to stroke if not more so. I wondered why there was so little attention paid to stroke. Maybe I missed it. But I didn't see much about stroke.

DR. OSTRO: It's really due to the history of our writing this. When we started writing this four or five years ago -- five or six years ago, there --

DR. GLANTZ: Bart actually has had a stroke in the interim.

(Laughter.)

DR. OSTRO: No. There seemed to be a little bit more controversy around the stroke than around the MI and mortality quantification. However, I did, when I looked -- recently, there was a series of articles in JAMA and several other -- Lancet, and some other publications, which were exactly confirming what you're saying now; that there does seem to be, as well, affects on stroke.

So, since we hadn't been really focusing that much on the blood pressure effects, per se, and we thought we'd cover a large number of the effects that would be expected. We didn't go back and add the strokes to that. But I think your statement is correct. There does seem to be a pretty strong association with stroke as well as some other cardiovascular outcomes.

DR. FRIEDMAN: Would you think it would be worth adding a little bit more about stroke to the report? I hate to give you more work to do, but I wonder if it would be worth it.

DR. OSTRO: We could actually add, as George has added, some sentences that -- we could also add a couple of sentences indicating some other potential cardiovascular effects that we did not quantify. That would not be hard to do.

DR. FRIEDMAN: I think that would be worthwhile.

DR. FROINES: We could approve the document with the provision that that will be added, so we don't have to go back.

DR. ALEXEEFF: As we've done in the past, we could just have Dr. Friedman confirm the sentences or review those sentences if we don't have them done today.

DR. WITSCHI: We were promised some comments.

DR. GLANTZ: Yeah, I have some comments. The

first thing is I, too, want to compliment the staff on a really nicely done report. And I think that you've done a good job of integrating the data that's become available in the last three years, more or less, since we looked at this.

And I also think you've done a good job of responding to the public comments, and even to the point that -- or at least one of the commenters from the lead industries has recognized that you've been responsive.

And you've made a bunch of changes in response to the letter that I sent you through Dr. Pitts. And I have a bunch of additional small changes that I think are necessary in the document. And I'll just run through them.

Most of these things are additional points of clarification. But in some, in some cases, I think that they really reflect changes that are necessary to make the document accurate. Because we heard earlier in the discussion of the RAAC report the need to accurately reflect the uncertainty that is implicit in any risk assessment, and we certainly at every meeting obsess about that. But I think in this case there were several changes made to this document which lead to an overstatement of the uncertainty, which in terms of many of the end points in here, I think are relatively -- there's relatively little uncertainty compared to what we're used to dealing with.

And I think someone reading this document could

come away thinking there's a lot more confusion about some of these health end points than there really are.

And so, those are where my comments are directed to. And let's see. I'll just go through these quickly.

On page 5-16 -- and some of these are just points of clarification, and this is in the response -- this is in the response to me thing, not in the actual document, but in this letter. It's a fax of a fax of a fax of my letter. This thing (indicating document).

On page 5-16, your response number four, at the bottom of the page, where you're talking about the impacts on a community of 2,000 people on kids, you say, this amounts -- you're talking about an effect of an increase due to a point source. The last sentence on the page, you say, "This amounts to between 3 (and) 8 children" that would end up with an increased blood lead level. After 3 to 8 children, in parentheses, I think you should add "in a small community of 2,000 people," so you know what the denominator is.

DR. OSTRO: We could actually say what the number of children are.

DR. GLANTZ: Okay. That would be even better. Yeah, that would be even better. Yeah, because that would let people know what the denominator is.

Then, at the bottom of page 6-5, the second to the

last line, delete the quotes around "threshold." You know, it doesn't need to be in quotes.

And then, oh, and this was something that I talked to George about. He was going to look up, on page 6-6 in the first full paragraph, you said, "Because of the fewer number of studies for women, we therefore have assumed that the effects of blood lead on diastolic blood pressure for women are. . .half that for men."

And the number of studies isn't the effect of lead on blood pressures. And, George, you remember you were going to come up with a sentence that made more sense there. Have you done that?

DR. OSTRO: I have a response to that.

DR. GLANTZ: Okay.

DR. OSTRO: There's a couple things. There's two points. First, the number of studies just makes us a little bit less certain.

DR. GLANTZ: That's okay.

DR. OSTRO: But we do say on a couple pages earlier -- hope I can find it for you -- or maybe it's in the new paragraph. That there's evidence from the Schwartz study, which looked at both men and women, that the effects for women were about half that for men.

DR. GLANTZ: Uh-huh.

DR. OSTRO: But there is a meta-analysis by

Staessen which indicate that the effects are about the same for men and women.

DR. GLANTZ: Un-huh.

DR. OSTRO: So, in the spirit of being cautious, Stan, we just assumed the .5, given the fewer number of studies.

DR. GLANTZ: Well, but what used to be cautious led you to overestimate risks; now caution is to underestimate risks?

DR. ALEXEEFF: Dr. Glantz, if you look on page 6-5 of our response to your comment, the paragraph beginning with the word "Similar," which is kind of two-thirds down the page --

DR. GLANTZ: Yeah.

DR. ALEXEEFF: Okay. And then you go down a couple of sentences there. This is what Bart is referring to. It says, "For example, Schwartz (1991) used NHANES II data to examine the relationship between blood lead and blood pressure in men and women age 20 and older."

DR. GLANTZ: Uh-huh.

DR. ALEXEEFF: And then it says, "Blood lead was a statistically significant predictor of diastolic blood pressure and of left ventricular hypertrophy in both males and females across the entire age range examined."

Then it says, "The magnitude of the association

for diastolic blood pressure was abut half that reported for men."

So, that's actually where the half comes from.

DR. GLANTZ: Okay. Well, then, I don't have a problem with the substance. It's just the sentence. And because I don't think -- why don't you, instead of saying because of the fewer number of studies of women, why don't you change it to say, "Based on the limited data available for women, we have assumed that the effects of blood lead," blah, blah, blah.

Okay. And then maybe to be cautious, you might add, you know, "There is some evidence that it might be--" or do you think it's fair to say there is some evidence that the effect might be larger, or do you think that based on--

DR. OSTRO: Larger than men or larger than --

DR. GLANTZ: No. Larger than .5.

DR. OSTRO: Oh, yes. There's definitely some evidence of that.

DR. GLANTZ: Well, why don't you also, then, add in a statement there maybe after that sentence or something. That is a long sentence. Why don't you just after that sentence add a sentence that says, "This may underestimate the risk, because there is some evidence that the risks for men and women are comparable.

Would you say that's an accurate statement?

(There was no oral response.)

DR. GLANTZ: Okay. Then, going through the report --

DR. ALEXEEFF: Will you wait one second?

DR. GLANTZ: Sure.

DR. ALEXEEFF: Okay. Thank you.

DR. GLANTZ: In Part B, if you look at page 5-10, in the last full paragraph, the effects for the hypothetical elevated exposure, you should delete that "hypothetical," because it's based on a real place.

A couple lines down, at the end of the line, change that "could" to "would."

And in the last full line you say, "Might occur." The word "might" should be changed to "would be expected to occur."

And then the fourth line of that paragraph, change "would" to "could."

DR. OSTRO: Okay.

DR. GLANTZ: That should be put back in the way it was in the original. Then, at the bottom, take out "might" occur and that should be "would be expected to."

DR. OSTRO: Okay.

DR. GLANTZ: The last full paragraph on the next page, you had changed --

CHAIRMAN PITTS: What page?

DR. GLANTZ: the last full line on page 11. You had changed "10 micrograms per deciliter that could potentially result. . ." I think you overdid the uncertainty in light of the evidence you presented.

On page 5-12 in the middle of the page, there's a deletion that should be put back in. That's starting with "In certain cases."

And then, a couple of sentences down, it says that the air lead concentrations at .5 micrograms per cubic meter, see that sentence?

DR. ALEXEEFF: Yes.

DR. GLANTZ: That should be moved to the end of the paragraph. And in its palace, you should say, "at lead concentration equivalent to the ambient standard of 1.5 micrograms per deciliter, more than 32 percent of children age 1 and 2 would have blood levels above the CDC guideline of 10 micrograms per deciliter (sic).

DR. ALEXEEFF: Could you read that again?

DR. GLANTZ: "At lead concentration equivalent to the ambient standard of 1.5 micrograms per deciliter --

DR. DENTON: It's per "cubic meter."

DR. GLANTZ: 1.5 micrograms per cubic meter, more than 32 percent of children age 1 and 2 would have blood levels above the CDC guideline of 100 micrograms per deciliter according to the aggregate model (Table 5-2).

DR. ALEXEEFF: One second, please.

DR. GLANTZ: Sorry. I just want to finish this.

DR. FRIEDMAN: I wonder if we could take care of this in writing, as we have done in the past, and have the staff --

DR. GLANTZ: (Interjecting) They took three years to make the changes from the last time we met. I'm jus taking the time to go through, and it will be done. If there's any disagreement on these, you can say so, and we'll argue about them. Somebody thought it needed to be changed back again.

On page 13, the first change in there where you changed "elevates" to "may account for" should be changed back to "elevates."

And in the next line, "increase" should be deleted. And then --

DR. ALEXEEFF: One second.

DR. OSTRO: I think you're right.

DR. GLANTZ: Okay. 0.15 --

DR. OSTRO: Okay.

DR. GLANTZ: then in the middle paragraph at the bottom where you have -- it says, "Lead levels," you deleted the word "poisoning." That should be, "any blood levels and lead poisoning."

And the next page, page 5-14, you've got a change

where you say, "elevated near source environmental levels." I think that "near source" should be put back the way it was.

Then, where you have .6 percent times 1,200,000 equals 7,200 -- the word "additional" should be put back in. You're talking about "additional," not an absolute number.

And then in 5.3.2, "hypothetical elevated air lead" should say, "elevated near source air lead exposure scenario. It's a real place.

DR. ALEXEEFF: Okay.

DR. GLANTZ: That should be changed back to the way it originally was.

DR. FRIEDMAN: Can I just say something? I would like to see you work this out with the staff, and we can be assured that the changes will be made, and that way we don't hold up --

DR. GLANTZ: I really feel it's worth taking the time. If someone disagrees, I want them to say so. It 's very important, I believe. It might be boring, but I feel there have been substantive changes made since the last time I had raised the issues. What I had asked to be changed have been changed back.

So, here we go again.

5-15, I'm just thinking these -- I want to emphasize that these are changes to bring the language in

the report into agreement with the numbers in the report, and to ore clearly represent he factual statements in the document. I think that these are substantive changes in the fundamental conclusions of the report.

But anyway, continuing to page 5-15 in the third line, the word "hypothetical" should be deleted. And so, the sentence should read, "This community scenario is partly based" -- delete the "partly."

So, the "scenario is based on the information in Part A," et cetera, et cetera.

And then, in the second to the last line of that paragraph where it says, "The number of young children calculated to exceed," insert the word "CDC," -- Centers for Disease Control -- "blood level guideline of 10 micrograms per cubic meter."

then, in the next paragraph, at the end of the paragraph where it says level of concern there, I would say, "CDC guideline," so it's clear what you're talking about.

I'm actually skipping a couple pages. On page 5-17, in the second line in the middle, "level of concern" should be changed to "CDC guideline," so it's clear what you're talking about.

And then it says, "Using the hypothetical elevated exposure example in Section 5.3," that should be changed back to the way it used to read. It should say, "Using the

ear source exposure example."

Again, it's not a hypothetical example. It's a real place.

then, in the middle of that paragraph, you're talking about 10 micrograms per deciliter as "the level of concern." That should be the "CDC guideline."

In the next paragraph, w here it says, "With regard to hypothetical elevated exposure," it should be changed back to say, "near source" as it was before.

Then, on page of page 5-18, where you have deleted Table 5.4, that should be put back in, and the reference to it should be included.

Then, I'm all done with that, and I'm in the blood pressure part on page 6-2.

Okay. This is something you may have already fixed, George, where you say in the middle, "current ambient air levels may be associated with an incremental 26,000 cases of hypertension." You see that?

And is there something you already fixed? It's not clear.

DR. OSTRO: Yes.

DR. GLANTZ: Okay. Then you have added a sentence, "as indicated by the order of magnitude range of risks," that sentence should be deleted. I think that there's not a considerable uncertainty here. It's an

inaccurate statement.

Then, on page 6-3, under equation 6-2, where you say at the end of the first line, the equation "could" result, should be "would" result.

Then, at the top of page 6-5, you had a sentence, "As indicated by the range of values representing the 95 percent confidence interval, there is considerable uncertainty. . ." That should be deleted. I think, compared to most of the stuff we've done, this has very little uncertainty.

Let's see. The language in the middle paragraph, last sentence, it says, "an estimated average 26,000 cases." The word "average" should be deleted. You already fixed that?

DR. OSTRO: No.

DR. GLANTZ: The word "average" doesn't mean anything there.

And then in the lower part of the page, one, two, three, four, five, six lines up from the bottom, you said, "Care should be taken to not ascribe a greater precision or accuracy to these risk estimates."

"Accuracy" should be deleted, because it's redundant.

And in the Executive Summary, you have --

DR. ALEXEEFF: I'm sorry. Could you wait a

second?

DR. GLANTZ: I think that you have taken care of some things today in response to my letter.

On page 8, that's your response back to my letter of October 18th to Pitts. Okay. Insert 1, I think, should not be inserted. It's on page 3, you see?

Insert 1 should not be inserted.

In the Executive Summary, page 8, the last sentence in the first full paragraph, "Based on these studies, a blood level of 10 micrograms per deciliter has been identified as the level of concern for children." It would be appropriate to say, "been identified by CDC."

Why don't you say, "by CDC," so it's clear?

DR. MANN: We also reidentified it.

DR. VANCE: That would not be appropriate.

DR. ALEXEEFF: I could say "reviewed by" on that.

DR. GLANTZ: Would it be fair to say, "by CDC and concurred in by OEHHA"? Could you go for that?

DR. OSTRO: I would.

DR. GLANTZ: By CDC and concurred by OEHHA.

Then, on page 10, insert 4 and insert 7 should not be inserted. Again, I think they're misleading statements.

And then, on Table 1 -- before I do that, and if you look at the list of Executive Summary inserts, I'd like to suggest two changes in the wording there.

Insert 6, if you see that there, last sentence, "each subsequent year, the models suggest an additional 780 children would be predicted to have I.Q. levels below 80. Change the word "suggest" to "estimate" That's clearer.

And then, at the bottom, insert 13, and I would add the following under the unit risk for cancer due to lead is 1.2 times 10 to the minus 5. That's added at the end of insert 13 in the footnote.

And there's a new sentence for toxicity, which --

(Thereupon, the reporter requested Dr. Glantz to speak into the microphone.)

DR. GLANTZ: I'm just trying to get through this and get it done.

So, that would be the new footnote in Table 1. And then in Table 1, change the title of the table to -- delete the word "cancer," so that it just says "Potency," and then lead would be lowered in the table with a unit risk of 4.6 times 10 to the minus 4.

The lead line would be deleted and would be inserted between Benzo{a}pyrene and nickel, with a unit risk of 4.6 times 10 to the minus 4, and the explanation that it's mostly cardiovascular. Okay? Those are my --

One other thing here.

DR. SIEBER: Stan, go back to the last one, I wasn't clear on all this. Why are you making a change to

the table? To me, it's pretty clear. There's cancer potency values for all of them. You want to delete cancer and then -- it just seems a strange way to go about it. There might be a better way to change it. I frankly don't understand it.

DR. GLANTZ: This table is looked at by a lot of people to sort of say, "Is this bad or not? How bad is it in the spectrum?"

And to put lead in that table, I mean, the lead is a difficult compound. So, it seems to me that the reason people care bout cancer is that it kills you. So, that's why people don't want to get it. And is 4.6 times 10 to the minus 4 unit risk from numbers in the report, and so that's the potency for death. And it's for cancer death for everything except lead. I think it should be made clear. I think it's very important that lead appear in the table of relative potency and reflective of the true risk associated with it, and it's probably an inconsequential end point.

CHAIRMAN PITTS: I think we're confusing them. You can add a Table 1A, and then have a little section with a line saying this is for cardiovascular potency, and it would be down lower here. And then you have answered the question. The cancer potency is low and --

DR. SIEBER: You could put the there number following the cancer potency factor in the footnote and say

something about the risk for cancer.

DR. GLANTZ: My only concern is -- if it's moved to the bottom of the table, I wouldn't care. But again, if we're interested in accurately communicating risk as documented in this report, the reader -- you don't take something that's going to end up in the top third in the list and sort of dump it into the footnote.

The way that I drafted it up was not irrational. Obviously you guys can see the logic of it. The whole idea is to put it in some context, so I think it's -- so, I think that two tables --

DR. FROINES: The cancer potency is too high, because you're not dealing with mortality. We're dealing with lead. If we --

DR. GLANTZ: I can live with that. That's fine. I'll leave it up to staff to do it in two tables, and let me look at them, and I'll see what -- cancer potency is not a key end point. So, let's see.

I have a couple of other things, then I'm done.

Let's go back now to the original findings in the brown document. That's the summary.

I'm sorry, the findings (sic). "Is there a concern for exposure to inorganic lead in California?"

I propose the following sentence at the end of that paragraph. "Cardiovascular and more toxicity end

points are more important than cancer."

And then on page 6, "Is there evidence of indoor exposure. . ." You need to add second-hand smoke as one of the sources. I couldn't let that pass. Indoor smoke.

And then at the top of page 11, you've added, "As indicated by the range of values," that sentence should be deleted. Again, I think it's misleading.

Then, on page 12, third line down, "For the noncancer end points," you see the second full sentence on page 12? I suggest making that a new paragraph. I think it would be clearer.

And then at the end of that paragraph, also say, "Noncancer end points are more important for lead."

And then the section, "Is there a threshold level for lead?" Since such estimates are not exact predictions," you see that sentence? I think that should be deleted.

And then on page 15, the third line down, you say, "level of concern." I'd change that to say "CDC guideline of 10 micrograms per deciliter."

Then in the next paragraph, you've underlined "possibly," and you haven't underlined anything else in the report. It's clear if you just say "possibly."

At the end of the paragraph, last line, it says, "blood pressure and related cardiovascular effects."

Now, what I think you mean to say there is

increased risk of fatal myocardial infarction.

DR. OSTRO: Cardiovascular effects incudes MI and mortality.

DR. GLANTZ: Death from coronary heart disease It would be more correct to say increased risk of fatal myocardial infarction and death from coronary heart disease; would that be correct?

DR. OSTRO: Uh-huh.

DR. GLANTZ: Well then, you should say that.

DR. FRIEDMAN: I see what you're attempting to do. And maybe you should add frequency then, and add some other effects, such as hypertension, and not be too limiting.

DR. GLANTZ: Happy to do that. You can add that if you --

DR. OSTRO: Just add the related change, more serious cardiovascular outcomes.

DR. GLANTZ: Just so you make it clear.

So, those are my modest suggestions. So, you'll never send me another report.

(Laughter.)

DR. GLANTZ: I just think that it makes it much more accurate.

DR. ALEXEEFF: Can I ask a question?

DR. GLANTZ: Sure.

DR. ALEXEEFF: A number of the comments that you

made -- and we've tried to take them all down -- a number of them reflect directly on the Air Resources Board, and particularly changes in the Executive Summary. And I'd like to take a couple of minutes to confer with them to see if they have an issue with this.

CHAIRMAN PITTS: Five minutes.

(Thereupon, a recess was taken.)

CHAIRMAN PITTS: Ladies and gentlemen, I'll ask you to take your seats and call the meeting to order.

MR. OLIVER: Dr. Pitts and members of the Panel, my name is Kirk Oliver. I'm an attorney with the State Air Resources Board. And I wanted to inform you that there's been a request from a member of the public that this hearing be continued on the inorganic lead identification until the December meeting of the Panel to allow public comment on these proposed changes, and to put that question to you, Dr. Pitts, and the other members of the Panel.

CHAIRMAN PITTS: Oh, all right. Fine. I appreciate that. And we certainly will -- and it's appropriate to consider this request at this time.

I the context of this request, let me ask the following from the staff for the OEHHA and the staff from ARB, their feeling as to the -- whether these comments or suggestions -- one, were they wholly new and were they completely new material to them, and essentially to previous

reports. To what degree does this represent new material? That's just a question there.

And have there been interactions with the two staffs -- I'm just curious myself -- on these matters prior to this meeting?

DR. ALEXEEFF: I didn't understand the last part.

CHAIRMAN PITTS: Well, have there been discussions on these? Have there been interactions on these? Scientific discussions. Do they represent new science?

I guess the question is: Does this represent new science, new information that hasn't been previously covered or, as Stan has stated I believe, that it's clarifying a number of issues that could be used -- clarified to get a more cogent document?

DR. ALEXEEFF: Right. No, these -- the changes suggested are simply clarifications and most of them seem to be removal of redundancies that we had in some of the sentences.

So, we don't see any change in the science or change in a substantive way. We do have one comment or a suggested change back with regard to the near source hypothetical issue. And we think that in the discussion of the -- that's an example where we near source, and then we switched back to hypothetical, kind of go back and forth as to what's the best way of explaining it.

And I think that probably the best way is, instead of saying hypothetical near source or hypothetical elevated exposure, we conferred with ARB staff, and the best way to express it would be an estimated near source. Because there is some estimation involved. And then also to clarify on the -- where we cite where the information comes from, Part A, Table 4-3, just add the additional tables related to that Table 4-3, 4-4, 4-5, 4-6. And that provides information where the estimates come from.

DR. GLANTZ: I don't have any problem with that.

CHAIRMAN PITTS: All right.

DR. GLANTZ: That's fine with us. We concur with OEHHA.

CHAIRMAN PITTS: All right. Other --

DR. FROINES: I have two comments. One, that making the changes to a document is a process that we have done for 13 years that I've been on the committee. And we've made small changes at the meetings to avoid having to go back -- to avoid having to determine that a document is whatever that term is.

DR. GLANTZ: Seriously deficient.

DR. FROINES: Seriously deficient. To avoid having to do that, we've made small changes, which staff has been willing to accept. And that's been the consistent pattern throughout.

So, I don't think this is any different than anything we've done on prior occasions.

Secondly, we have approved the document some time ago. And this is, in a sense, a return to -- some of the changes actually take this document back to what's -- the document that we already approved.

So, it's not as though there'd been substantive changes. In fact, it's in a sense a reinforcement of what we had already approved. So, I think that the argument that there are new substantial changes occurring is not correct.

CHAIRMAN PITTS: Anybody else?

DR. SIEBER: Well, can I ask a question?

DR. GLANTZ: Sure.

DR. SIEBER: I suppose we could vote on it, but first, before we do that, what would be the consequence of continuing the discussion until December? Procedurally, what does that mean? Does it go out for public comment between now and December? What happens?

MS. SHIROMA: Yes, that's correct. We would produce a new draft document with Dr. Glantz' proposed changes and our amendment to that, and we would send it out to the mailing list for the comment period. And then we would return to the December 16th meeting. It would mean a short comment period.

DR. GLANTZ: Is that going to cause problems?

There's nothing here that's of substance. This is all clarity. Are we going to get stuck where somebody's going to come back and say, "You're rushing it, because you didn't give us X-months of public comment look at this thing"?

CHAIRMAN PITTS: You would have public comment. Is it clear that the statutory -- would it appear that the concept of public comments, would that be satisfied by the process in which the individual from the audience requested, would that, in fact, be adequate public comment -- time period to qualify for an adequate time period for public comments (sic), to have time so the process could take place and have them in time for the December 16th meeting?

MS. SHIROMA: Our counsel is checking that. I know that the statute says that 21 days prior to the SRP, our staff submittal to you. Now, you are asking for some changes, so it's coming back this way. But anyway, I'll turn it over to our staff counsel.

MR. OLIVER: Dr. Pitts, I believe the statute says that the report or whatever we end up with this report today has to be made available to the public. It doesn't say exactly how long. I'm quoting Health and Safety Code Section 39661(b).

So, I think we would be well within any kind of a time parameter to give public comment an adequate chance to review and say that they have to say about the report.

DR. GLANTZ: Could I just say one thing as the person who inadvertently started this discussion? And I apologize for doing it, for being overzealous.

I have plowed through all of these public comments from all of these people over, and over, and over again. And if we were to continue this to give people an opportunity to further comment, would it be possible to say that the comments should be restricted to the changes that were discussed at this meeting so we don't have another 300 pounds of stuff to read?

MS. SHIROMA: That would be what we would be asking comment on.

DR. GLANTZ: Bart is looking unhappy.

MR. OLIVER: That's entirely appropriate, Dr. Glantz.

DR. GLANTZ: That's all I need to hear.

MR. OLIVER: Legally, it's appropriate to do that,

CHAIRMAN PITTS: And we would be commenting on the comments that have been made and changes suggested, in the context of the previous document, which we actually, in fact, approved. And so, it will be restricted to that. Is that correct?

MR. OLIVER: That is correct.

CHAIRMAN PITTS: All right. I guess -- I don't know whether we vote on this or not, or whether I --

DR. GLANTZ: Does that change our deadline or our timetable in getting the approved report to the full Board by its April meeting?

DR. DENTON: March.

CHAIRMAN PITTS: Let me ask that question again of Joan. Joan, would that change the deadline?

DR. DENTON: Dr. Glantz, it would, and it would put it off by the amount of time that we would add onto the comment period. So that means, if we've got two months, November and part of December, then it would mean, instead of March, it would May or June.

DR. GLANTZ: I feel bad.

DR. FROINES: I think that we haven't made substantive changes, so I don't think it's necessary to get into a process that is just being further delayed for no substantive reason.

There's no substantive reasons, because there have been no substantive changes.

MR. OLIVER: Dr. Pitts, Kirk Oliver again. Might I suggest at this point that a vote on that issue might be appropriate among the Panel, and then we can determine that and move on.

DR. GLANTZ: You mean a vote as to whether these changes I suggested were substantive or not.

MR. OLIVER: First of all, I would vote on whether

the Panel would care to adopt those changes into the report. I don't think that that's been made clear on the record whether the Panel as a whole or as a majority endorse those changes.

If so, then a second vote on whether or not the Panel felt that those changes were substantive and deserving of another opening of a public comment period.

DR. GLANTZ: Can I just say one thing so we can -- this will actually speed things up.

George has given me -- this is where we can vote on everything at once -- a brief one paragraph explanation for where that 4.7 times 10 to the minus 4 number came from, which I'll pass around, and which I would propose to reincorporate into the report and the Executive Summary at the appropriate place.

It's just taking numbers out of the report and showing how they're put together to get that number. So, I'd like to also add that. This is not substantive. This is by way of explaining how they computed the number, which is using standard methods.

And other hanging issue is this question about the I.Q. loss and the economic burden. And during the break, several of my colleagues -- some expressed enthusiasm for including it and some expressed enthusiasm for leaving the report the way it is.

So, I think that should be -- I'm happy to do whatever the majority thinks is appropriate. But I think, why don't we just get those quickly and we can vote on everything at once.

And I guess this thing about the economic impact, is that something the committee wants to add or not? I see two noes.

CHAIRMAN PITTS: I don't have a vote, but I don't think we should.

DR. GLANTZ: I vote we leave it out, so that's off the table.

MR. OLIVER: Well, let's let the record reflect that, as a unanimous vote, the economic analysis language has been withdrawn by Dr. Glantz.

Back to you, Dr. Glantz.

DR. GLANTZ: Okay. And then, I would like to just pass around this thing that George gave me. And this I will include by -- it's the bottom paragraph. There are two paragraphs on the page. And that would be integrated. This, I would say, is just an editorial thing again, integrated in the appropriate place wherever Table 1 is referred to in the Executive Summary and in the document, in Part B, just so people know how that number was calculated. And again, there's nothing new here.

This is a standard unit risk calculation based on

the numbers that are already in the report. It's just showing how they got that one number.

So, it's the bottom paragraph. So, I would like to also, as part of what we voted --

CHAIRMAN PITTS: Would you read that paragraph?

DR. GLANTZ: Okay. That's a good point. It's been a long day.

Table 1 provides estimates for both the cancer -- this will have to be edited slightly, since we've agreed to have two tables. Okay? But we'll leave them to edit it.

Table 1 provides estimates for both the cancer and noncancer unit risks associated with lead. The noncancer risks are based on the predicted number of cardiovascular deaths for individuals age 40 to 59. The estimates indicate an expected 74 deaths per year for 7.92 million adults exposed to 0.06 micrograms per cubic meter air lead concentration.

Therefore, the risk for microgram per cubic meter would be 74 divided by 7.92 million times 1.06 equals 1.54 times -- pardon me -- 1.56 times 10 to the minus 4.

Using the upper 95 percent confidence estimate of 218 deaths would generate a unit risk of 4.6 times 10 to the minus 4.

DR. WITSCHI: I have a problem. I still would hate to see lead with a number next to something like

dioxin, vinyl chloride, as though these kinds of things --

DR. GLANTZ: No, no. We've already agreed to have two separate tables.

DR. WITSCHI: Okay.

DR. GLANTZ: So, this will be changed. Where now Table 1 is the cardiovascular and Table 2 is --

(Thereupon, several members spoke simultaneously.)

CHAIRMAN PITTS: Table 1 provides for the noncancer unit risks.

DR. GLANTZ: So, the first sentence would say Table 1 provides estimates for the noncancer unit risks.

CHAIRMAN PITTS: Are there any questions?

DR. GLANTZ: The Table 2 will be the cancer table.

CHAIRMAN PITTS: That needs no further comment. Is there any discussion on this? Do I hear a motion to include this?

DR. SIEBER: I'd move that we include the amended table.

CHAIRMAN PITTS: Is there a second?

DR. WITSCHI: Second.

CHAIRMAN PITTS: All in favor?

(Thereupon, there were hands raised.)

MR. OLIVER: Excuse me, Dr. Pitts. Let the record reflect there was a unanimous vote to include that amendment that Dr. Glantz proposed to the Table 1.

CHAIRMAN PITTS: All right.

Now is an appropriate time to vote on the question as to moving on the proposed modifications that were discussed during SRP meeting today.

DR. FRIEDMAN: I move that we accept them.

CHAIRMAN PITTS: Is there discussion on this? Do I hear any discussion? If there's no discussion, do I hear a second to the motion?

DR. SIEBER: Second.

CHAIRMAN PITTS: All in favor?

(Thereupon, hands were raised.)

CHAIRMAN PITTS: Those opposed? Let the record reflect it was a unanimous vote. See, I'm learning.

(Laughter.)

CHAIRMAN PITTS: Okay. Now we come to the question as to the deferral of the vote, if I have this correctly, on the document.

How does the Panel want to handle this request from the audience? Basically, as I understand the request, that a member of the audience felt that the comments that were made by Dr. Glantz were substantive and they were of such a nature that they should be incorporated, once again, into a public comment period -- exposed to public comment. They should be produced for public comment.

Now, it is also my understanding that we could,

in fact, carry out the public comment process and have that done by the December meeting. And that's legally correct.

It is also my understanding that, if this were the case, it would, in fact, by statutory requirements I presume, defer, or delay, or would simply put back the -- assuming that we approved it in December, and the public comments were answered, and critiqued and answered, we could then go ahead and put the vote by ARB to something like a month and a half later?

Is that right?

DR. DENTON: Two months.

CHAIRMAN PITTS: Two months later.

I'd like to ask Mr. Oliver, did I state that appropriately?

MR. OLIVER: Right. I guess the vote to the Panel would be whether they wanted to go ahead and vote and adopt the report right now and the findings, or would they care to open these changes that they just adopted to public comment and reserve their vote until the December meeting.

And those changes being only the ones that Dr. Glantz suggested with the modifications that we've all agreed on and voted on.

CHAIRMAN PITTS: This question is open now to the Panel.

DR. FROINES: I make a motion to adopt the

document with the changes that we voted on.

DR. WITSCHI: I second it.

CHAIRMAN PITTS: Discussion?

DR. SIEBER: In the spirit of openness and communication with the public, I guess my feeling is that, yes, we would lose a month or two in the final adoption, but would the gain outweigh the loss there? In other words, a gain being that the public would, in fact, feel that they had an adequate input into the final documents. That's really the issue, balancing one good against another good. And where you come out -- again, I guess personally, I would tend to favor having additional public comment.

CHAIRMAN PITTS: Craig?

DR. BYUS: I don't think there was anything of a scientific substantive changes made to the document. Frankly, there was nothing at all that was scientific. But I think the one, in fact, the language that you've used, Dr. Glantz, you've actually used the word "substantive change in the tone of the government." I think that was the fact in this case. And that's why we sat here and listened to it, because it did change the tone of the document.

And so, although the science wasn't changed and the scientific opinions weren't changed, I would certainly vote for it. I also would favor having a public comment period.

CHAIRMAN PITTS: So, basically, you would vote no on this motion?

DR. BYUS: Yes, I would.

CHAIRMAN PITTS: With the understanding, that the second motion would be that we -- how about you, Stan?

DR. GLANTZ: Well, I have, first of all, I feel very guilty.

DR. BYUS: Let's not --

CHAIRMAN PITTS: No mea culpas.

DR. GLANTZ: Okay. Well, in any event, first of all, there was no -- I want to reiterate that none of the changes I made were substantive in terms of the scientific content of the document. No numbers were changed; no end points were added or subtracted. To me, those would have been substantive changes.

And so, but I think that there were certain editorial changes that have been in the process of the document coming to us which, in fact, made the document, as it was written, not reflect the technical, scientific content that it included. And that was the goal of my changes, was to make the language of the document clearer and more consistent with the scientific content.

I'm also very concerned, frankly, that this has been, of every compound we have worked on, the one which has dragged on, and on, and on, and on, and on, and on. And I'm

very reluctant to let it keep dragging on. But having said that and since I feel guilty, I'll go with whatever the Panel wants as long as we have assurances that -- see, when we had our last meeting almost three years ago where we discussed this document, we approved it, except for some very minor components.

And, in fact, there were changes made in the language that we had already approved and voted on. So, we sent the document back to OEHHA with what I thought were requests for some fairly minor clarifications. And we ended up with what, two or three public workshops and almost three years of delay.

And I'm very concerned that that not happen again. I mean one reason that I went through this the way I did and made everybody listen to this, was that I wanted to walk out of here with a finished document. I don't want to plow through another 5 million pages of stuff.

So, I mean, do we have an absolute, ironclad assurance that, first of all, there will be no further changes to the document made or suggested by OEHHA or the ARB; that the document, as we have voted on it and with the changes we voted will be the document that comes back here in December? That's the first question.

And that we can limit -- that we can limit the public comment to the changes that were made at this

meeting, so that we don't have to go through and reargue a whole lot of things that have been argued multiple times already.

And I think those are two questions I would like to be --

MR. OLIVER: You can certainly limit the notice to merely the changes that you have here and perhaps a resolution of the Board, if that were the majority sentiment on the Board, reflecting the views that Dr. Glantz just said in the form of a directive to OEHHA and the ARB might be appropriate also.

MS. SHIROMA: And we don't have a problem with proceeding in this fashion, as far as putting it out for public comment the proposed changes given as per the vote, asking for comment on those, providing about a two-week comment period, and then receiving the comments, providing those to you, realizing that staff may have some recommendations as to how to handle those comments back to you.

DR. GLANTZ: Yeah. But the thing I want to avoid is getting a whole bunch of rewriting of the document, using this as an excuse to undo what we've approved.

CHAIRMAN PITTS: It will be restricted to comments on the comments. Can we have the agreement that this will fall within the acceptable time frames of OEHHA

and CARB, that they can produce this material for public comment; that they can come back -- that it come back to them in the appropriate time, legally appropriate time; that they can then forward to the Panel members these comments and the responses you'll be -- you'll be able to prepare the responses so we will be able at the December 16th meeting, then, to make the final decision on the comments on the comments on the entire document.

DR. FROINES: I have a question. I don't agree. I disagree very strongly, because it seems to me that the reason I talked about the fact that we've done what we did today for 13 years is the fact that we have done it for 13 years.

And now, it seems to me that we have potential precedent before us; that everytime we want to make a few changes to a document, some lawyer in the back of the room can come up and say, "No. I need now to send it out for a comment period."

And I think that's inappropriate. I think it minimizes the attempted efficiency of this process. The reason we do this is to make things flow more smoothly. In the long run, we're concerned with the public health. We think having these documents get out has some benefit. And it seems to me that we have to think about what we're doing, because this isn't the first time. This may be the first

time, but this won't be the last time, because we will have other people who want to intervene to find more time to have the process take longer.

And then I think that once we decide to do that, we should realize that we're in that -- we accept that precedent. I still don't think that there's anything that Stan's done today that requires going out for public comment. I don't understand the Panel's view as to the substance of the issue. I understand the Panel's view in terms of the perception of the issue. And everybody wants to have the perception of fairness. I'm for that, too. Perceptions are important in government.

But, in fact, the substance of it is that there hasn't been anything that's happened here today that should require a comment period.

DR. GLANTZ: Well, can I ask a question? There's going to be another public comment period. If we approve this report today, there'll be another public comment period, right? Because there's a public comment period before it goes before the ARB.

DR. ALEXEEFF: Yes.

DR. GLANTZ: And given that there seems to be unanimity among the members of the SRP that the changes I proposed were not substantive, why couldn't we now -- John is now sort of convincing me. Why can't we approve the

report and let people comment. And this is actually the way it's been done in the past with changes that have been made.

If people want to comment on the things and people can come in and try to make an argument that there was something substantive here, they can take that to the Air Resources Board, and they can consider it at that point.

And what's the downside of doing that? I'm sorry.

DR. FRIEDMAN: I agree with both John and Stan. I feel that the changes that Stan gave were often just a return to the original language we approved. A lot of the changes were just getting rid of some redundant words. And again, I don't feel that the science has changed. I think there is no need to have an additional public comment period, especially given that there's still going to be another month.

So, I would argue in favor of approving it today.

DR. WITSCHI: I would agree, too, with Stan, and John, and Gary. Besides, I would also like to make the observation that really the comments that were received in March were not very different from the ones that were received the second time or the third time around.

So, at least there were no substantive changes in the comments that were made. So, I think, sooner or later, one has to come to a decision in what way to look at and interpret the existing scientific database.

CHAIRMAN PITTS: I'd like someone to clarify the procedures and the steps that will be followed if we pass this. Then, this we've approved -- what, the draft? I want to hear it clearly where we go. Have we approved the final comment which goes out to public comment? How does one handle the public comments on the final document?

MS. SHIROMA: You will have approved, with the changes voted on, on the Scientific Review Panel version of the document. We will then take that, and we need to add some things to it for purposes of a staff report for our Board. And then we file that staff report with the Office of Administrative Law, and provide for a 45-day formal comment period prior to the Board hearing. The members of the public may comment during the 45 days, and may also come to the Board hearing to testify.

And then, we are required to respond to all the comments provided during that 45-day comment, and that becomes part of the record and also gets filed at the Office of Administrative Law after the Board hearing.

DR. GLANTZ: I really think there's no need then. I'm sorry.

CHAIRMAN PITTS: So, legally then, these public comments will have been responded to -- forgive the preposition. You will have responded to the comments on this document which has been passed.

There will be formal responses for the public; those will be treated in a formal manner and will be available for the Air Resources Board, our risk management arm, for their elucidations.

MS. SHIROMA: Yes. And, as part of the staff report, we also include the entire Part C, which are all of the comments received on the report, plus all of our responses.

DR. SIEBER: And I'm happy to hear that. The only difference I can see is that the SRP's out of the loop then. The comments won't come to SRP; they'll be handled by the full Board.

MS. SHIROMA: Yes, that's correct. Now, at the Board hearing, the leadperson from the SRP is also there providing a perspective from the SRP, and presenting the findings of SRP at the Board hearing.

DR. SIEBER: Well, that sounds to me like it handles the situation. So, I think I've been persuaded to be ready to vote.

DR. BYUS: Me, too.

DR. GLANTZ: I am, too.

If it would be helpful, I'd be willing to go to that Board meeting.

(Laughter.)

DR. GLANTZ: No?

CHAIRMAN PITTS: No.

DR. FROINES: You might get some varying opinions, though.

DR. GLANTZ: That's what my wife says. I look great on paper, but --

(Laughter.)

CHAIRMAN PITTS: Do I hear a call for a motion? A call for the question?

DR. FRIEDMAN: Call.

CHAIRMAN PITTS: All right. All those in favor, say aye?

(Ayes.)

DR. GLANTZ: I'm going to have to abstain. Or do you rather I voted aye?

CHAIRMAN PITTS: I would rather you make up your own mind.

DR. GLANTZ: That's true. I'll vote aye. That makes it unanimous.

MS. SHIROMA: We still have the findings to do.

DR. GLANTZ: Okay. Let's do the findings.

MR. OLIVER: Dr. Pitts, might I suggest that we recite to let the record reflect the unanimous vote of the Panel was to approve the document with the changes. It might be appropriate for you to say that.

CHAIRMAN PITTS: All right. Let the record

reflect that the Panel voted unanimously to accept the document and the changes.

But let the record also reflect that the Panel was seriously concerned with the question of public comments to the recent comments made by Panel members, and that the Panel sought clarification on time scales and procedural matters, and we're pleased to learn -- as a matter of fact, it was the basis for the certain votes on the Panel that there would be, in fact, adequate time for public comment, and that this product would be placed formally in the proceedings and would be legally there, and meets with our responsibilities as well as the -- our responsibilities.

Now, we have the question of the findings, the last act. The findings have -- do we all have them?

Let's take five.

(Thereupon, there was a brief recess taken.)

CHAIRMAN PITTS: Okay. We'll come back to order. We now in the position where we now wish to vote on the findings. The findings have been presented to the Panel. Would you like to discuss these and present them to us again?

DR. DENTON: Sorry, Dr. Pitts. I didn't understand the question.

CHAIRMAN PITTS: We're now prepared to take up the

question of the findings. And do you have any changes you would like to see made in the findings?

DR. DENTON: The only change that we recommend is in Finding 5. given the debate this morning about the emission inventory, that the Panel clarify in the findings that the primary source of emissions are aircraft fuel combustion at 149 tons per day.

CHAIRMAN PITTS: Does the Panel agree with this? That's a default. That's obvious.

DR. DENTON: So, we can just add that.

CHAIRMAN PITTS: Just add that. There's no problem.

All right. Are there comments as to the findings from the members of the Panel?

DR. OSTRO: Excuse me. For No. 19, the numbers for the cardiovascular effects should be updated to include both the males and females.

CHAIRMAN PITTS: Is there any objection to that? Can that be done in the process of --

DR. OSTRO: Yes.

CHAIRMAN PITTS: All right.

DR. GLANTZ: Also, in No. 19, I think you should add the following sentence:

And that is, "These values equate to a unit risk for cardiovascular disease of 4.6 times 10 to the minus 4,

and maybe (Table), whatever table it is. The reason for putting that in is to relate what it says here to the numbers in the table.

CHAIRMAN PITTS: Any discussion? This is basically the informational point.

DR. GLANTZ: This is just relating the findings.

CHAIRMAN PITTS: That's nonsubstantive information. Okay.

Now, I understand that there's something that should be deleted. An addition and a deletion. Let's do the deletion first.

DR. WITSCHI: The deletion will be on Finding No. 7, the second part of the paragraph, "In addition, the airborne toxic control measure," blah, blah, blah, down to "approximately 78 percent."

That should be deleted.

CHAIRMAN PITTS: Okay.

I think it's important to know the reason for that.

DR. GLANTZ: Because it's speculative.

CHAIRMAN PITTS: Speculative, and we don't want speculative material.

DR. GLANTZ: It does not have any data to support what might happen in the future.

DR. WITSCHI: Delete, "In addition, the airborne

toxic control measure for emissions of toxic metals from nonferrous metal melting adopted by the ARB is expected to reduce emissions from facilities subject to this regulation by 45 percent statewide. Rule 1420, emission standard for lead, adopted by the South Coast Air Quality Management District, is expected to reduce emissions of lead from facilities in the South Coast District by approximately 78 percent." That should be deleted.

CHAIRMAN PITTS: We're deleting that.

DR. WITSCHI: I have some minor editorial changes to make. There is nothing substantive.

CHAIRMAN PITTS: Unless I hear an objection, we'll let them be done; nothing substantive?

DR. WITSCHI: No.

CHAIRMAN PITTS: All right. We have your assurance and we accept that.

DR. WITSCHI: Yes.

CHAIRMAN PITTS: Is there anything else?

DR. WITSCHI: Yes, there is. There is one finding that should be added, and this is about there is no REL in this document, and yet we still have current ambient standard of lead for 1.5 micrograms per cubic meter, which is probably too high. And somehow, this should be addressed. And the following is proposed to add to the findings:

The current ambient air quality standard for lead in the State of California is 1.5 micrograms per cubic meter. This standard was based on preventing blood lead levels in 99.5 percent of children from exceeding 30 micrograms per deciliter, a level of concern that dates from 1978. Since the CDC has revised its level of concern for children down to 10 micrograms per deciliter, at the new lead level of 1.5 micrograms per cubic meter, around half of California children would be expected to exceed the CDC guideline. Unfortunately, even if all airborne exposure to lead were eliminated, 10.9 percent of California children would still exceed the CDC guideline of 10 micrograms per deciliter. If the State were to adopt the standard of .5 micrograms per cubic meter, one-third the current standard, the percentage of children exceeding the CDC guideline of 10 micrograms per deciliter would be 21.1 percent, twice the percentage it would be if there was no lead in the air.

At the current ambient level of .06 micrograms per cubic meter, the percentage of children exceeding the CDC guideline of 10 micrograms per deciliter is estimated to be 11.5 percent, 0.6 percent over the percentage it would be if there were no lead in the air.

While this is a negligible risk, a substantial public health risk would develop should the present values raise in the future.

CHAIRMAN PITTS: That's a fairly complex statement. What it's saying is that the dose of lead, the lead burden carried by children at an age bracket, is a certain value of 10.19 or something, micrograms per deciliter, a number like that.

That at .06 micrograms per cubic meter, the contribution of airborne lead to that is negligible; that the current burden is basically from other pathways. Am I correct on that?

DR. WITSCHI: Yes.

CHAIRMAN PITTS: Now, that's great. However, there remains the fact that the air quality standard of 1.5 micrograms per cubic meter set many years ago was coordinated with, in a sense, the 30 micrograms per deciliter of blood, which was again some 20 years ago. 30 has been dropped to 10.

No change has been made in the air quality standard. I think if we said that, and then said that the SRP wishes to point this out, and is concerned about a lead standard that high -- which, although we're far from that standard today, it should -- what the Air Resources Board should consider an appropriate air quality standard which would protect public health from possible future increases in lead burden beyond the position -- the level it is today in airborne lead.

Have I said that in more or less what we're trying to say without all the numbers?

DR. GLANTZ: I think we could say it better.

DR. FROINES: The Panel finds that an increase in air lead over the current ambient levels would result in more children having blood leads above 10. And so, in consideration of this fact, that future -- any lead standards in the future should not result in a greater proportion of children having blood leads greater than 10 than currently exist.

CHAIRMAN PITTS: That sounds good. Are there other comments?

DR. FROINES: What we're saying is that the policy of the State is that there will be no standard that will make matters worse.

CHAIRMAN PITTS: Now, what form could we put this in? Is there a general agreement among the Panel that this would be a useful finding in that form? And could we ask you, Professor Froines, to write that out and transmit that to the staff, with the understanding that no substantive changes in that what you said would have occurred in the process of going from what you write to the staff.

DR. SIEBER: So, we'll have an opportunity to look at what's written and the vote on it? I had a hard time following the words without actually seeing it.

CHAIRMAN PITTS: Why don't you write it right now, and then we'll vote on it while I'm discussing future meetings.

Why don't you write it so we have a clear way of understanding it.

Are there any other questions about the findings that should be brought up?

In other words, we're accepting the findings.

Yes, sir.

DR. ALEXEEFF: On Finding 17, the percent of children that will move above 10, we should probably just use the percent of children that would move above 10.

CHAIRMAN PITTS: Okay, fine. That's a clarification.

While they're discussing this, let me just move ahead and indicate that we will defer the Environmental Tobacco Smoke discussion till the next meeting, which will be December 16th. That's number one.

So, there's two items on the agenda, and the first will be the discussion with the DPR. So, that will be two items, and any updates. The third item on the agenda will be updating the status of priorities of the programs and where we are today.

Now, is there any other business at this moment that we can discuss while we're waiting for this particular

message?

MR. LOCKETT: Mr. Chairman?

CHAIRMAN PITTS: Yes, sir.

MR. LOCKETT: It would helpful if the Panel would mark their calendars for January, February, and March -- it's in your material -- as to when they're not available, so we can set a meeting for the first of the year. If you do that, we'd appreciate it, then give it to us before you go.

(Thereupon, a recess was taken to allow the creation of a statement to be included in the findings.)

CHAIRMAN PITTS: Let's come back to order. Yes, I'd like Dr. Froines to read in his suggested addition to the findings.

DR. FROINES: Dr. Froines would like helpful suggestions.

The current ambient air quality standard for lead in the State of California is 1.5 micrograms per cubic meter. This standard was based on preventing blood lead levels of 99.5 percent of children from exceeding 30 micrograms per deciliter, a level of concern that dates from 1978. The Center for Disease Control, CDC, has established a level of concern for children at blood lead levels of 10 micrograms per deciliter, and an air lead level of 1.5

micrograms per cubic meter, approximately half of California's children would be expected to exceed the CDC guideline.

Unfortunately, even if all lead exposures were eliminated, 10.9 percent of California children would exceed the CDC guideline of 10 micrograms per deciliter.

The percentage of children exceeding the CDC guideline 10 micrograms per deciliter is estimated to be 11.5 percent, five percent more children than if there were no lead in the air at the current ambient air lead concentration of 0.06 micrograms per cubic meter.

The Scientific Review Panel concludes the ambient airborne lead levels should not lead to future increases in blood lead levels in excess of the current distribution of blood lead levels.

DR. GLANTZ: Now, wait, wait, wait. Before you change it, is that okay, George?

Can you explain the five percent versus .5 percent.

DR. VANCE: It's a half a percent increase.

DR. GLANTZ: The absolute increase is .6 percent, right? So, it may be that the clearest thing to do, because I went around and around with George on this when I was trying to understand the document, maybe that should be amended to put both numbers to say that it would increase by

.6 percent (which would be a 5 percent increase in the number of children. That way you've presented it both ways and it's not confusing.

MS. SHIROMA: Not to prolong the meeting, but I just want to make sure you have all of our thoughts here on this. The way the wording is on this finding, are you entering the risk management arena as far making a finding?

You're pointing out what the CDC has done, and you're pointing out the results of the assessment, and in that, did you make a recommendation also in that wording?

DR. FROINES: No, we're saying that if the CDC guideline is 10 micrograms per deciliter, we're saying, as a matter of public health, that ambient air lead levels should not be allowed to increase such that a greater proportion of children have blood leads over 10 than currently do.

In other words, we don't want to accept anything that would lead to a worsening of the distribution of blood lead levels.

DR. FRIEDMAN: That is our recommendation.

CHAIRMAN PITTS: But that's risk management.

DR. GLANTZ: What about saying it like this -- I think the thing that's bothering Genevieve is the word "should."

DR. FROINES: Should is different than shall in regulatory language.

DR. GLANTZ: Well, what about simply saying something like the SRP notes that anything that allowed the lead level to increase over the current ambient levels would lead to an increase in the number of kids, or something like that.

CHAIRMAN PITTS: Should this increase, there would be the corresponding increase of .5 and 5 percent, and you don't have any draw any other conclusions. That's just the scientific side of it.

DR. ALEXEEFF: Okay.

CHAIRMAN PITTS: If that finding is modified to reflect that perspective, can we leave it to them -- Genevieve and Joan and John say, to modify it from that perspective?

We're not risk managers, but we're just calling attention to the fact that should this level go up, then it would -- it could result in a .5 percent increase, .5 percent rise in the blood level, which would correspond to a five percent increase in --

DR. FROINES: I think that's fine. We can do that. But in every other document we've ever done, we pick a best value. In this document, we're saying we can't pick a best value because the State doesn't want to do it, and that puts us into a risk management phase. That's B.S. as far as I'm concerned. That's a fundamental difference from

what we do in cancer, where we actually say this is a best value. Go back and look at those potencies. Those are values that the air quality management districts use as bright lines, and we all know that.

What we're saying here is we're not prepared to do that in this document. That is a political and policy decision. It is not a scientific decision. And if that's the way you want to do it, that's your choice, but that's what you're doing.

MS. SHIROMA: I thought the analogy was that -- and, George, correct me if I'm wrong here -- that the best value for a cancer relationship is the slope, and I thought that the relationship given by the OEHHA staff of the blood lead in children in relation to air exposures was that slope, was that best value.

So, I thought that we were being consistent with the previous cancer types of documents, in that there was not a threshold with the lead. There's no threshold. And so, the relationship provided by the OEHHA staff is that slope analogous to a cancer slope or best value.

CHAIRMAN PITTS: Could that be phrased in such a way that -- it is slope. It is analogous to a situation that is not the same as, but analogous to. Would that satisfy you?

DR. FROINES: Everybody wants to get out of here.

So, everybody's in a hurry. And that's part of the problem; we've been here all day.

But the unit risk value is what people end up using.

When we first got this document, whatever many years ago it was in the last century, it was -- George was asked over and over again, what in the hell is an REL? Nobody was comfortable with REL.

Now, we have come to the point where we now have no REL. We now have slopes in here, and that's fine. If you want to do that, you can leave that and let the risk managers, when they take up this issue, deal with what is an appropriate air lead level. That's an appropriate thing to do.

We don't need to make the finding about what is the best value. We, for years people kept saying, but everybody wants the SRP to give the best value. That's what we got pushed into to doing against our will.

We were pushed to do it, and today you're saying, oh, by the way, we don't want you to do that anymore.

So, you decide the rules and we'll live with them.

CHAIRMAN PITTS: Excuse me for interrupting, but we have three serious airplane --

DR. FROINES: But everyone needs to understand what it is --

CHAIRMAN PITTS: We understand that. But are you saying that there is the information in these statements and it could be described in a sentence or two, that this is analogous to -- we find that it is analogous to --

DR. GLANTZ: We've all been struggling with how to say this.

DR. FROINES: Let's just leave the findings the way they are. Let's just vote on them and get out of here.

DR. GLANTZ: But you see, the things that set this whole thing off for me was in the public comments that came in. The point was made that the REL discussion had been deleted after we had told them -- I think the first part of the thing that Pete suggested is simply pointing out that the current California standard is obsolete. That's a statement of fact.

While it's not the function of the SRP to make risk management decisions, it does seem clear that the current California standard for ambient lead of 1.5 micrograms per cubic meter is higher than current science and prudent public policy and public health practice would dictate. If lead exposure was at the current ambient level of .06 micrograms per cubic meter, there would still be significant adverse public health impacts that are large compared to many other compounds.

(Thereupon, several members spoke

simultaneously.)

DR. GLANTZ: Well, I tried.

DR. FROINES: You should say the -- at the current standard, there is .5 -- whatever the percentage is -- percent of children with blood leads that are above 10. Increases in air lead over that value would lead to increases in blood leads in children over 10, and just stop. You're making a statement of science.

DR. WITSCHI: We have made substantial progress. And right now, the airborne lead is really no substantial risk anymore. But we have to convey to the ARB or whoever makes the regulations, that just because things are find now and yet we have antiquated standards, that sometime in the future, somebody comes and works us up to the standards again. And it would be legal. But what we want to convey is that anything going above what we have would be a big public health risk.

And that's the message we have to get across to the regulators.

DR. FROINES: Is there some other way we could get this message across? I think our problem is that we want to get the message across.

CHAIRMAN PITTS: We can do it with a letter. Why don't we draft a letter --

DR. GLANTZ: Can I ask a procedural question?

We've adopted the report. Can we delay the adopting the findings till the next meeting and not delay getting things out to the public and all that other stuff?

MR. OLIVER: No.

CHAIRMAN PITTS: The public has to know the findings and it has to go with the report. The findings are an integral part. All we're worried about is this last -- let me ask our attorney.

Can we now actually communicate the message you've been hearing, and can we communicate that by a separate letter to the ARB from the Panel expressing our opinions and our concerns about -- are interested in this particular issue. Here are the numbers, and we wish to present them to you.

MR. OLIVER: I think that's an excellent idea, Dr. Pitts, and one that would certainly get the attention of all the Board.

(Thereupon, several members spoke simultaneously.)

CHAIRMAN PITTS: Do I have a second?

DR. GLANTZ: I second it, with the following stipulation. The first part of the thing where he ran through the 1.5 or the .6, all the factual statements be included, because those are not in the findings and they're very important.

CHAIRMAN PITTS: I would suggest we have a

committee of three -- John, Hanspeter, and you -- you draft the letter, the three of you.

I don't intend to do it now. I think this is important. You said we could defer this. This is an important issue. I want to take more time on it.

DR. WITSCHI: I want to second Stan's motion that we leave the facts in the findings.

CHAIRMAN PITTS: Absolutely.

DR. GLANTZ: All we need to do is --

CHAIRMAN PITTS: Is there a second -- is there a motion we do that? Is there a second?

(Thereupon, Chairman Pitts, indicated he heard a motion and a second, which the reporter did not hear because of simultaneous conversations and requested that information.)

DR. GLANTZ: I made the motion.

DR. WITSCHI: I did.

I'll read it. The current ambient air quality standard for lead in the State of California is 1.5 micrograms per cubic meter. This standard was based on preventing blood lead levels in 99.5 percent of children from exceeding 30 micrograms per deciliter, a level of concern that dates from 1978. The Center for Disease Control has reestablished a level of concern for children at

blood lead levels of 10 micrograms per deciliter.

At an air lead level of 1.5 micrograms per cubic meter, approximately half of California's children would be expected to exceed the CDC guideline. Unfortunately, even if all the airborne exposure to lead were eliminated, 10.9 percent of California children would exceed the CDC guideline of 10 micrograms per deciliter.

If -- okay. The percentage of children exceeding the CDC guideline of 10 micrograms per deciliter is assumed to be 11.5 percent, 0.5 percent more children than if there were no lead in the air.

There's something missing. Okay. With current air lead levels {.06 micrograms per cubic meter}, the percentage of children exceeding the CDC guideline of 10 micrograms per deciliter is expected to be 11.5 percent or .5 percent more children than if there were no lead in the air. And those are the facts.

DR. GLANTZ: Yes.

CHAIRMAN PITTS: Do I hear a motion?

DR. GLANTZ: I move that these findings be adopted.

DR. WITSCHI: Second.

CHAIRMAN PITTS: All those in favor? Lt the record show that there was a unanimous vote.

DR. GLANTZ: We can write a letter that takes it

further that says that we believe that we shouldn't have lead levels worse than.

(Thereupon, there were simultaneous conversations.)

CHAIRMAN PITTS: We're not going to do it now. Do I hear motion that the meeting be adjourned?

DR. FROINES: I want to say something, and I want to say it before --

MR. OLIVER: Before we move on from the findings, Dr. Pitts, you should mark your official copy of your findings as Exhibit 1 and we'll enter that into the record with the correction that you have.

And I'm sorry to interrupt, but I thought before we moved away from the findings, we needed to clarify the record on that. And that's all I have.

Back to you, Dr. Froines.

DR. FROINES: It's a procedural point that the committee won't take up today, but we have to take up at some point in the future.

What's happened here today is that at one point we went through Stan's comments and then a lawyer in the back says that this absolutely must have a continuation. So, everybody scurries around responding to an ex parte communication.

And later, the same thing happens where it's now

said this Panel is getting into risk management decisions. It's my view that we should not be scurrying around responding to people's comments from the audience. We need a more formal process that says if people want to have input to this, they have input, but not within the context of this Panel having its deliberations.

Because, otherwise, we end up being driven by the audience. And we have historically always sought to never have that happen. Our policy has always been that this is a discussion between the staff and the leadership of the agencies, and the Panel, and we limit it to that.

CHAIRMAN PITTS: I want to say that the comments and decisions of the Panel have not been modified by any input from the audience. We have, however, responded to a comment from the audience regarding the procedures we should follow in handling comments from our staff; we've done this.

It added an extra dimension to this. John, we'll discuss several of the items in terms of the procedures.

One procedural item I would like to put on the agenda before we adjourn, should we meet every three months? What is the appropriate role for public comment? This comes up regularly.

It's totally appropriate to review our procedures and, if we're happy with the way it is in the past, fine. If we see reasons for modifying those procedures, we'll then

get together and discuss these, and we will.

Is that appropriate with the Panel?

DR. FROINES: I support that.

DR. SIEBER: We can't go into it all now, but you at least raise the possibility that we'd look at our procedures again.

CHAIRMAN PITTS: That will be a formal -- I will do this. We will look at this, and we'll look at it in consultation with the staffs and with the appropriate individuals.

Okay. Is there a motion to adjourn?

DR. GLANTZ: So move.

CHAIRMAN PITTS: All in favor?

(Ayes.)

(Thereupon, the meeting was adjourned at 2:50 p.m.)

--o0o--

CERTIFICATE OF SHORTHAND REPORTER

I, Nadine J. Parks, a shorthand reporter of the State of California, do hereby certify that I am a disinterested person herein; that the foregoing meeting was reported by me in shorthand writing, and thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said meeting, nor am I interested in the outcome of said meeting.

In witness whereof, I have hereunto set my hand this 13th day of November , 1996.

Nadine J. Parks

Shorthand Reporter