MEETING

STATE OF CALIFORNIA

AIR RESOURCES BOARD

SCIENTIFIC REVIEW PANEL

UNIVERSITY OF CALIFORNIA, LOS ANGELES

COVEL COMMONS, SUNSET VILLAGE

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330 DeNEVE DRIVE

LOS ANGELES, CALIFORNIA

FRIDAY, JUNE 24, 2005

9:30 A.M.

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Dr. Paul Blanc

Dr. Craig Byus

Dr. Gary Friedman

Dr. Stanton Glantz

Dr. Katharine Hammond

Dr. Joseph Landolph

Dr. Charles Plopper

REPRESENTING THE AIR RESOURCES BOARD:

Mr. Jim Aguila, Manager, Substance Evaluation Sections

Mr. Jim Behrmann

Mr. Robert Krieger, Air Pollution Specialist

Mr. Peter Mathews

REPRESENTING THE OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT:

Dr. George Alexeeff, Deputy Director

Dr. Melanie Marty, Manager, Air Toxicology and Epidemiology Section

Dr. Mark Miller, Air Toxicology and Epidemiology Section, Toxicology and Risk Assessment Unit

INDEX

		PAGE
1.	Continuation of the Panel's review of the draft report "Proposed Identification of Environmental Tobacco Smoke as a Toxic Air Contaminant," Part A(June 2005) Part B/Part C Addendum(May 2005)	6
2.	Consideration of administrative matters	207
Adjournment		217
Reporter's Certificate		218

PROCEEDINGS

CHAIRPERSON FROINES: I'd like to call the meeting to order. The date is the 24th of June, 2005. And as I look around the room, all the members of the Panel are present. I don't think we need to take the roll with that statement.

Stan pointed out something that is really quite interesting. I'm assuming that we're going to bring to closure today the Environmental Tobacco Smoke document. And this will be the first document that we have brought to closure since 1998, which was diesel. And we held the meeting -- the conference that we held on diesel was held in this room at that time. So many of the people in the room were here for that very successful conference, and in fact Kathy was testifying at it. So we have a historical event occurring.

I have 2 things to say at the outset. And later we may hear from Kirk Oliver who's the lawyer for ARB. And I wanted to bring the Panel's attention, for the record, to the fact that there has been a communication from Dr. James Enstrom and a communication from Geoffrey Kabat. Enstrom is from UCLA. Kabat is from New Rochelle, New York. And both investigators have raised the question about whether Dr. Glantz should serve on the Panel in addressing Environmental Tobacco Smoke because of what

they allege to be his biases. And so the question has come before is now the -- I won't characterize their document -- Jim, I think everybody has it, don't they? Where is Jim?

MR. BEHRMANN: No, they do not yet.

CHAIRPERSON FROINES: Oh. Well, we'll make sure that everybody has it. But they claim that Dr. Glantz cannot objectively evaluate the studies in the new review of ETS. And I'm tempted to characterize this document, but I think I won't. I think I'll leave it for people to draw their own conclusions. This week we -- so the question is whether there is a conflict of interest and whether Stan should sit on the Panel evaluating ETS, and whether he can do that objectively is the question that's been raised.

And Jim Behrmann and I have been meeting with Kirk Oliver this week to discuss the legal issues from the standpoint of the Agency. Parenthetically, the issue of conflict of interest is something that we need a meeting, at some point, to discuss how the Panel wants to approach it the issue of conflict of interest. We haven't done that probably as effectively as we might. And so, at some point in the future, we will have a meeting to discuss administrative procedures with respect to conflict of interest.

I'm comfortable with an approach like the National Academy of Sciences where people actually disclose any potential conflicts.

In any case, getting back to Stan. I just wanted to say that based on the discussions with Kirk Oliver, it's my conclusion and Kirk -- and the ARB legal staff's conclusion that Dr. Glantz does not, does not, and I emphasize, have a conflict of interest in the matter at hand, and that Stan can -- we believe that Stan, and he has stated at such, can fairly and objectively participate in the Panel's review of the draft report. And given Stan's assurances, I believe the Panel should move forward to consider the draft report on the basis that Stan will be an active participant within the deliberations. And so, as far as I'm concerned, we should move ahead on that basis. And I have nothing more to say unless some members of the Panel have comments.

The second thing I wanted to say is slightly personal, but not entirely. And that is that at the last meeting, which I think personally was a very, very successful meeting, I think we accomplished a great deal. And I think that the document we have before us reflects the accomplishments that grew out of that meeting.

I would also say that at times during that meeting some of us, including me, were very outspoken.

And things were said, perhaps even harshly at times, and so I wanted to apologize for any outspokenness that occurred. And I want to assure the agencies that the success of this panel and the interaction with the agency depends on the ability to have collegial discussions. And I want to assure them and the Panel that we will work to make sure that the testiness that arose at various times won't happen in the future. And I think that's enough said. I don't know if anybody wants to comment on that.

But I wanted to have an apology on the record, so everybody is aware that we recognize that we -- that there was some outspokenness -- and outspokenness being perhaps a euphemism, but we'll leave it at that. But I think that the collegial nature of the interaction is really quite crucial, and we should proceed on that basis.

Comments?

Stan.

PANEL MEMBER GLANTZ: I just had one just for the record, collegial doesn't mean uncritical. It means polite.

CHAIRPERSON FROINES: Yes.

PANEL MEMBER GLANTZ: So just so no one -- I don't want anyone to misread the record to think you're saying that this panel is somehow rubber stamping what the agency is saying.

CHAIRPERSON FROINES: Well, I would go further. I think the legislation is clear in that the legislation wants this panel to be critical. We can't do our job if we're not critical. So that it doesn't mean that we have to do it in a way that's offensive to people, but we have to be able to be critical if we're going to serve the purposes of doing a thorough review of the science. And so I agree, I think that's well said.

So let's proceed now that we've had all of the fun we're going to have this morning.

(Laughter.)

CHAIRPERSON FROINES: Seriously, Janette, I think you were going to start.

The plan for the Panel, Janette and Melanie and I talked, and what we're going to do is have a brief discussion -- I think brief is accurate -- from ARB as to where they are. And then Melanie is going to discuss the changes in the document. She's going to talk about Thun's comments -- am I leaving anything out -- and the basic conclusions, I guess.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yeah, and also responses to some panel comments.

CHAIRPERSON FROINES: And then if the Panel is comfortable with where we've gotten to, we will then take up our own Findings that you've received by Email. So

Janette, you're on board.

ARB AIR QUALITY MEASURES BRANCH CHIEF BROOKS: We're going to have Robert Krieger start out with Part A, a portion of it so he's going to be very brief.

(Thereupon an overhead presentation was Presented as follows.)

ARB AIR POLLUTION SPECIALIST KRIEGER: Thank you, Janette.

Good morning, Dr. Froines and members of the Panel. As Janette mentioned and Dr. Froines agrees as well, this presentation will be short and brief, since it only incorporates comments made by the -- on the March version of the report Dr. Atkinson and Dr. Hammond.

I'll briefly summarize the few comments on the next few slides.

--o0o--

ARB AIR POLLUTION SPECIALIST KRIEGER: For Dr. Atkinson's comments, we have revised Table 6-1 in the report, to incorporate the more increased information on that recent atmospheric average lifetimes for several of the TACs listed in the report.

We've also added a reference by Krol, which is suggested about the lifetimes as well. And added more detail on the atmospheric fate of nicotine. And on Table III that some of the compounds are present in the gas

phase. These are very detailed comments, but they're all highlighted in the Part A report. So if you take a look at those, you can see the changes there.

And finally for Dr. Atkinson's comments, there's just several little minor changes.

Next slide.

--o0o--

ARB AIR POLLUTION SPECIALIST KRIEGER: Dr. Hammond submitted several comments on the March draft report. And one of the most important comments that we addressed was the comment about adding the number of samples, averaging times and the sample locations where appropriate, into our text of tables. And this deals with the fact that ETS in a lot of the studies that we have, some where they're averaged over 24 hours, some were long-term averages, some were short-terms and some were realtime averages.

So it would be appropriate, and we agree too, that that's most important to put into our tables and our text so the reader knows that if you look at one average over 24 hours, it's going to be different from, you know, the spikes that do occur in a few minutes or even an hour. So we put that in.

And we also -- in doing so, we've also revised our scenario calculations to include a little bit more

realistic activity pattern Data. And in doing so, we also included an in-vehicle -- actual in-vehicle concentrations per Dr. Hammond's suggestion. And we used one of the higher vehicle concentrations in our exposure estimation to calculate this.

Our exposure scenarios kind of ended up being a little lower at the low end and a little higher at the high end. So we really didn't change much, but it did change a little bit to use those, so we thought those were appropriate.

This is more of a minor comment, Table III-2, 3 in Chapter 3, we included information on the noncancer health effects for several of those toxic air contaminants that are listed in Chapter 3.

And we also added Dr. Hammond's reference of 1995.

Next slide.

--o0o--

ARB AIR POLLUTION SPECIALIST KRIEGER: Okay. As far as the few clarifications that we made to the report. It was a little confusing to the reader sometimes and to Dr. Hammond too, and we recognize this too as well, that the approach we used to search literature was based on the initial reasons why we updated the 1997 NCI Report, but we tried to coincide with OEHHA on this as far as an update,

and we realized this. So we tried to make that a little more clear to the reader too, because of those studies were reviews of other studies that had different dates, earlier dates than 1997. So it was a little confusing in the text, so we tried to clarify that in our report.

We also clarified some of the workplace exposure studies, again, taking into account the average times of samples. We included that as well.

And you see Dr. Hammond also had other minor changes. And you can see it in the Executive Summary, we indicated that the relative range of exposure was less than .01 for a nonsmoker in a nonsmoking home. Also, it's not on the slide, but the higher end also went up a little bit in the exposure scenario, as I said before in the previous slide.

And there were also some minor corrections to the references. Again, we added Dr. Hammond's reference, and there were a few other typos and minor corrections to the report, which we hope made this, in the end, we believe a much stronger report.

--o0o--

ARB AIR POLLUTION SPECIALIST KRIEGER: The summary of all these revisions, overall the conclusions reached in the report that have been presented to the Panel have not changed. And I think that's all we had for

our part.

Any questions?

CHAIRPERSON FROINES: I was going to go ask Roger and you for comments. At this point, let's just have any questions for the presentation.

PANEL MEMBER HAMMOND: I just wanted to thank you. I think you did a very good job. I appreciate your tolerance with me, based on the extensive remarks. I think it's a very nice job. I just have a few minor typo, very minor corrections, so I'll just get those to you on Monday, but it's a excellent work. It's a lot of work.

Thanks.

ARB AIR POLLUTION SPECIALIST KRIEGER: Thank you.

CHAIRPERSON FROINES: Roger.

PANEL MEMBER ATKINSON: I have no problems with this.

CHAIRPERSON FROINES: Anyone else from the Panel have comments to make at this point?

Great.

I should say that you guys really have made a major effort in terms of trying to deal with the exposure issue and should be applauded for that. That wasn't easy. And we had a lot of early meetings talking about that, and so it really was a challenge.

PANEL MEMBER GLANTZ: I just have one -- and I

mentioned this at an early meeting. I think that the outdoor measurements you made are really unique and I hope you guys will submit it to a peer reviewed publication to get it into the regular scientific literature.

ARB AIR QUALITY MEASURES BRANCH CHIEF BROOKS: We do plan to do that.

CHAIRPERSON FROINES: And you don't have to put all of us on as authors.

(Laughter.)

CHAIRPERSON FROINES: Thank you very much.

(Thereupon an overhead presentation was Presented as follows.)

CHAIRPERSON FROINES: Well, here we are again. Welcome.

OEHHA SUPERVISING TOXICOLOGIST MARTY: I had a couple of little items that I'll put at the end, but I have a slide show now that's going to run through the revisions we made to Chapter 1, the revisions we made to Chapter 7, response to panel comments, and response to comments submitted by Dr. Michael Thun to the Panel.

This is the first time somebody's told me I'm not loud enough.

(Laughter.)

OEHHA SUPERVISING TOXICOLOGIST MARTY: We addressed the comments basically from all the Panel

members on Chapter 1. A lot of them were given to us orally at the last meeting. So we combed through the transcript to make sure we caught all of the important issues. And Dr. Blanc provided a lot of comment, but also other members of the Panel, Dr. Glantz and Hammond in particular, gave me additional comments and Dr. Byus.

So the changes are shown in the track changes mode in the SRP review draft. So they should have been pretty obvious what we did. And they essentially focused on clarifying OEHHA's process for reviewing studies on ETS health effects and evaluating the weight of evidence. And by the way, I think the chapter is a lot better now.

--o0o--

OEHHA SUPERVISING TOXICOLOGIST MARTY: We clarified the use of consultants in Section 1.1, to note that yes, we did use consultants to draft some of the chapters or parts of chapters, and in our meta-analyses, but we take ownership of this document.

And we clarified in Section 1.4.1 how we identified studies. And in 1.4.3 we clarified the weight-of-evidence evaluation and we expanded the description of "criteria for causality" with more text, more explanatory text and examples.

And in section 1.4.4 we clarified how we went about evaluating studies, both qualitatively looking for

inconsistencies and so on, and quantitatively looking at individual risk estimates, whether or not they were statistically significant, and conducting, in some cases, meta-analyses of a couple of the endpoints and also reporting meta-analyses that were in the literature.

--o0o--

OEHHA SUPERVISING TOXICOLOGIST MARTY: In section 1.5 we elaborated on smoker misclassification and how that's different than exposure misclassification, and the overall importance of exposure assessment in environmental epidemiology and ETS in particular.

We elaborated further on the case-control design and cohort-study design, what they are and the advantages and disadvantages. We added more text to the discussion of publication bias and also other confounding.

And finally, we updated Table 1, Attributable Risks. There were a couple of little changes primarily in the risk estimates for breast cancer. And there was another minor change in the estimate of SIDS deaths. I've forgotten now, I've got to go back and look.

--o0o--

OEHHA SUPERVISING TOXICOLOGIST MARTY: And that's all we had to say about, in general, what we did. So if there are additional comments from the Panel now, we'd like to hear that.

CHAIRPERSON FROINES: Yeah. Let's take each section. Are there comments, and Paul you clearly were the lead on this one. Do you have any?

PANEL MEMBER BLANC: Yeah, I have a few comments. I want to put them in context first. I do agree I think that the chapter is very improved and serves the purposes that I think you wanted. So all the suggestions I'm going to make are either questions for clarification or minor -- potentially minor issues that I don't think would impact approval of the document. It would be in the category of things that I would say are minor changes that you could consider for the final version.

One of them you actually reiterated in your oral comments the comment which was down on page 1-3. You say OEHHA takes ownership and full scientific responsibility. I understand the full scientific, but taking ownership is sort of California pyscho-babble.

(Laughter.)

PANEL MEMBER BLANC: And I'm sure you want to --

PANEL MEMBER GLANTZ: Weren't you the one who suggested that language?

PANEL MEMBER BLANC: I don't think so.

(Laughter.)

PANEL MEMBER FRIEDMAN: Is the administration offering to have an ownership society.

(Laughter.)

PANEL MEMBER BLANC: No, I mean -- how could you have legal ownership. I really don't -- but if what you mean is the sort of the common usage, I would --

OEHHA SUPERVISING TOXICOLOGIST MARTY: Take it out.

PANEL MEMBER BLANC: -- take it out.

CHAIRPERSON FROINES: We could put it in Schwarzenegger's ballot this fall.

PANEL MEMBER BLANC: On page 1-7 when you talk about the strength of the association, which I fully agree with, the public health perspective, there are 2 parts you say the very last line of the section that, the first point is that "From a public health perspective such small magnitude associations for common disease can mean large numbers of people affected by the health outcome."

It's 2 things. It's small magnitude associations and a frequent exposure? Right.

In the dose response section, which is also good and clearer, when you say that, on page 1-8, "Absence of a graded responses is not necessarily evidence against a causal relationship." It is evidence against it. It's not very strong evidence. I mean, I think you want to reword that. It doesn't exclude a causal relationship.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Oh, yeah.

Okay.

PANEL MEMBER BLANC: Do you know what I'm saying?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Um-hmm. It is not necessarily, but it does not exclude it.

PANEL MEMBER BLANC: You can word it some other way.

And similarly, again these are minor points, but I just wanted to have this be as clear as possible. A little bit farther down on this page, it says, "This assumption is problematic when a particular biomarker..." Do you mean that this assumption is problem ridden or this assumption is open to question?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Open to question.

PANEL MEMBER BLANC: So that's the correct usage of term. That's fine then. Because people are going to read it and say -- think you mean problem ridden and you -- okay.

This little section on natural experiments on the next page, which is nice. And I think you should say that, "Even so, those natural experiments are not usually considered experimental evidence." They're usually considered some kind of epidemiological study. I mean, they're not -- when people talk about experimental evidence as a causal -- traditionally it's a causal -- as

a piece of causal evidence. They're not talking about natural -- what we would call natural experiments. Those would somehow come --

OEHHA SUPERVISING TOXICOLOGIST MARTY: That's right.

PANEL MEMBER BLANC: The point is well taken. And again this is just trying to be as precise as possible. On page 1-10 where you're talking about the body of evidence approach. And this is something I should have caught, because it's not underlined so it was in there before. And I might have said something, but when you say, "The evidence must satisfy several of the guidelines...", now many people will read "several" as meaning 3 exactly. I'm not saying that that is the correct definition of several, but that is how many people will read it. So if you would like a word, which is less open to that interpretation there -- I mean, you might like multiple or something else you want to say. But just think about what it is, you know -- people are likely to understand.

Similarly on page 1-11 where you're talking about we have this new discussion or expanded discussion talking about why some studies -- a well done study may be, you know, have a lot of influence and on the other hand there could be negative studies which are not very impressive

because of their limitations. I mean, these are generally papers which are in the published literature. So actually you can't stay so unequivocally that their results arose from bias. If it was that clear, they would have been published.

But what you could say is that they're more likely to be attributable to bias or, you know, some -- you have to soften that. You see where I'm saying in the very last paragraph.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Um-hmm.

PANEL MEMBER BLANC: And then here's the most substantive question I have that confused me. Continuing in that section, it's just before Section 1 --

PANEL MEMBER GLANTZ: What page?

PANEL MEMBER BLANC: 1-12. Just before 1.4., you have a paragraph talking about a group of studies and the direction of the risk, right, is it below one or above one. It precedes the beginnings of your discussion about meta-analysis. Is the implication that you did analyses that weren't really meta-analyses, they weren't weighted for study size. They were just -- there was 7 studies and 4 were positive and 3 were negative, is that what you're trying to say there? Because it's not really clear.

When I first read it, I thought well okay then why don't you have a sentence here saying, you know,

weighting for study size as a technique is, you know, commonly called meta-analyses. But then you have a whole section on meta-analysis. So what was the intent here?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Well, the intent was less a quantitative analysis, like a meta-analysis, and more a qualitative overview of the data. So if you take all the studies that have been, at that time, in health, and you plot them in the same figure. If the affect is not really there, you would expect about half the point estimates above one and half of them below one. And you know with a. --

PANEL MEMBER BLANC: Then I thin it would be helpful to have some kind of sentence there that says now we're going to be talking later about more formal met-analysis. This is just more qualitative or something like that.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay.

PANEL MEMBER BLANC: There's a part on page 1-15 where you talk about why sometimes you did the meta-analysis and sometimes you didn't. I thought that was very good to say that upfront. You said there was an analysis performed on childhood asthma that's presented only in summary, since this has been waiting for publication. So what you're meaning -- is this because of the Ingelfinger rule, you don't want to prevent its

publication.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Exactly.

PANEL MEMBER BLANC: And this was done by one of your consultants?

OEHHA SUPERVISING TOXICOLOGIST MARTY: It was actually done by staff. Kathleen Vork was the lead and she is here. We have submitted it now.

PANEL MEMBER BLANC: Okay, but you'd still have the same problem. Could you just make that sentence more explicit, because I don't think a regular reader is going to understand why that meant that you couldn't do more than...

OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay.

PANEL MEMBER BLANC: And then I didn't dwell on the part about the smoking and all that, because I didn't want to -- I'll let Kathy Hammond talk about that. But what I would say is that when you get to the very end, and this may not have been an issue before when it was, you know, shorter and not as good, but when you get to the end, it just sort of ends.

And I think 2 or 3 sentences that just say, you know, in summary we have delineated in this chapter, blah, blah, blah, and blah and that would make it -- I wasn't clear when I got to the end and then there's the table. It's like well, you know,

OEHHA SUPERVISING TOXICOLOGIST MARTY: And so...

(Laughter.)

PANEL MEMBER BLANC: Just --

CHAIRPERSON FROINES: Add a summary.

PANEL MEMBER BLANC: Yeah, just some kind of -- I'm not saying, you know, extensive word-smithing, but I think you could just...

OEHHA SUPERVISING TOXICOLOGIST MARTY: Sure.

PANEL MEMBER BLANC: Because I think you do that in most chapters, right?

OEHHA SUPERVISING TOXICOLOGIST MARTY: We did.

PANEL MEMBER BLANC: I think you just got fatigued and said I'm done with Chapter 1.

(Laughter.)

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes, we did.

(Laughter.)

CHAIRPERSON FROINES: That's unusual. Yeah, it shouldn't end with just other confounding after a long methodological discussion.

Other comments?

PANEL MEMBER GLANTZ: I have a few. I would echo what Paul said, these are points of clarification. And I have a few that I'll just give you, they're just minor grammatical things. But I did have a couple questions.

CHAIRPERSON FROINES: Well, let's try and keep your grammatical ones to a limit.

PANEL MEMBER GLANTZ: I'm sorry, I'm looking at the Executive Summary here.

Okay, this is if you go to pages 1-6 and 1-7. And this is -- and we've had some discussion about this. I personally have a -- really don't like drawing this bright line at a risk of 2 and saying that's big and things less than 2 are little. I think it's very arbitrary.

So I would just like to see the last paragraph -- the last little bit on 1-6 to just say small magnitude associations and then delete the parenthetical statement. And then the latter -- and at the top of the next page, the same place, I would just delete the 1 to 2. I mean, if people feel strongly they like it, I'm not going to fight about it. But, you know, a lot of -- if you apply that criteria, most of commonly used medical therapy would be considered weak.

CHAIRPERSON FROINES: It's worse than that at one level, since the relative risk for diesel was 1.4. You're actually putting diesel into a weaker category by using 2, so I agree with Stan.

PANEL MEMBER GLANTZ: Yeah. And I actually would get rid of the word weak. I mean, I think that there's 2

different things that are kind of mixed up here. One is the magnitude of the risk, and the other is the certainty with which you can say the risk is elevated. And so I would also talk about, you know, moderate elevations in risk or something. But I think you need to be careful to avoid confusing the magnitude of the risk estimate with the significance of the test of the hypothesis that it's not one.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yeah, we definitely don't mean to do that.

PANEL MEMBER GLANTZ: Well, I think it's -- the way it's worded could -- it needs to be stated more precisely.

PANEL MEMBER BLANC: Would it help, Stan, if they said in that first part that when they're saying strong association they put in a phrase, you know, "...has often historically or by convention...". You know, I think the very first part where they say that people often talk about a relative risk greater than -- or an odds ratio greater than 2. I think it's useful. But out front there that, you know, if you look back at the terminology people have used without getting into an extensive discussion of it, then I agree with your comments. I'd rather that they would just say a smaller relative risk. Relative to that it's smaller, but that's not saying it's inconsequential

or whatever.

PANEL MEMBER GLANTZ: Yeah, if you want. I mean, I just personally don't like this habit people have of calling 2 some magical -- I mean, why not use Pi or something. If we worked in Base E, it would be 2.7.

PANEL MEMBER BLANC: Well, I just want -- it's important for them, though, to make it clear that they understand what's generally out there, and that's why it's useful to have that. The reason why 2 I think exists has to do with the attributable risk in the individual, if you will. Because one raises a relevant his of greater than 2, then you -- for that individual more likely than not that risk factor accounted for their disease, right. I mean I think that's the origin of it, if you want.

PANEL MEMBER GLANTZ: I guess. I mean, I don't know -- I think it's -- I mean just this is maybe me personally, but I think people get way -- that's become too much of a bright line for some people. And I just would rather not reinforce what I consider to be bad thinking.

And I think if you just -- I mean, if you want to do it the way Paul is saying, that's okay to relate it. But I think you don't want to characterize risks under 2 as weak. If you have very strong evidence that the risk is there -- you know, if you're very certain that a risk

of 1.1 isn't due to chance or confounding, to me that's a strong statement. You know, it's strong statement about a not huge risk. So I just think cleaning -- that's a place where I think just more precision in the language would be helpful

CHAIRPERSON FROINES: But I think that in fact there's another issue that's true and that is that -- and, by the way, Sander Greenland has written about this issue of 2, and so has David Ozonoff, so there's some literature on it. But the other point is that historically people talked about the number 2 in terms of strength of association. We've all been through that for years and years and years.

But historically what we've done in the recent past, and diesel is a good example, the actual number became less important than the consistency of the 40 studies that showed basically consistent results. So that we drew the conclusion recognizing that 1.42 was not 2, but we drew this -- we felt confident in the Findings because of the weight of the evidence of the 40 studies. So we're making decisions differently now than we did even 10 or 20 years ago.

So we don't look at a specific study, look at it being 2 and say when we're into these environmental carcinogens, we look at -- because of the controversial

nature of them, we look at multiple studies to reaffirm our conclusions and not just at the value of a particular study. Although, obviously a study with a number of greater than 2, we have more confidence in.

But I think that there is a different paradigm that we're operating within. So the question is, how do we address both those issues?

PANEL MEMBER BLANC: No, I think the chapter does that. I think there are some wording change here. I think Stan is overstating the point. He's just saying don't -- you know, make it clear that you recognize that this is out there, but don't so much go into the same language that you say something you don't need to say. That's all you need to say.

PANEL MEMBER GLANTZ: I don't want to like beat a dead horse. But the other problem here is exactly what the word "weak" refers to. Because it's used sometimes to mean a small effect and other times it's used to mean not high confidence in the conclusion of an effect. So I just think avoiding that word will -- and just be very precise.

It's sort of some of the points Paul was making earlier. I think if you're very precise about what you mean at getting rid of that word and using some more precise language would be better.

CHAIRPERSON FROINES: I should point out that one

of the best and most quoted studies in recent years is Arden Pope and George Thurston's 2 studies on particulate matter. And in the most recent Arden Pope study, which of course has an enormously large population, they're looking at 8 percent lung cancer excess risk. So they have an odds ratio of 1.08. And so -- and I think there's nobody that would say that that study isn't a really very fine study. And the 1.08 reflects the size of the population that was in the study. So that, in fact, the value of 2 depends on more than simple views of it.

PANEL MEMBER FRIEDMAN: So to summarize the word weak has certain connotations which you don't like, so maybe you just use the term "small magnitude". That would be very precise, and it wouldn't have any of those other connotations.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay.

PANEL MEMBER GLANTZ: Okay. And then page 1-14, the -- by the way, I think at the top of page you're talking about the unpublished meta-analysis, the Johnson meta-analysis, but I think that's out now. But at the bottom of the page at 5 lines from the bottom, you say, "In our analyses no single study may a significant difference in the final pooled estimates."

And I would suggest you change the word "significant" to "substantial", because significant could

be read as statistically significant and that you did some formal analysis to see, you know -- and then on the top of the next page -- no, never mind. Paul already did that one.

Then if you go to 17, I think the -- at the end of the first paragraph the sentence you added where you say, "Studies that have more detailed exposure assessments generally have higher precision and are considered of higher quality. Imprecision in the measurement blurs the distinction among the groups and results in a misclassification error."

And I was confused by that, because I think one of the things you did well here was to, as you pointed out in your slide, is to separate exposure problems from smoker misclassification. So I would suggest you change -- and I'll give you this -- change results and misclassification error. And I would change that to say "Biases the estimates of effect size toward the null," which I thought was what you were trying to say. Am I reading it correctly?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yeah.

PANEL MEMBER GLANTZ: Yeah, I think that would be clearer.

And then I was confused in the next paragraph -- and maybe fixing the previous paragraph will fix this, but

it wasn't totally clear to me when you were talking about non-differential misclassification. It wasn't clear to me if you're talking about exposure misclassification or smoker misclassification. So I think you need to just clarify that. I mean what were you talking about there?

OEHHA SUPERVISING TOXICOLOGIST MARTY: No, it's actually more exposure misclassification.

PANEL MEMBER HAMMOND: The paragraph starts exposure, right?

PANEL MEMBER GLANTZ: Okay. Well, maybe I just was tired.

And let's see in the middle of page 1 -- I have a couple other little things, but in the middle of page 1-18 -- in the -- You say, "The misclassification of smokers as nonsmokers affects a very small percentage of the nonsmoking referent group in the majority of studies (less than 5 percent)." And could you tell me what you were trying to say there?

OEHHA SUPERVISING TOXICOLOGIST MARTY: That there's very few people who are classified as nonsmokers who are actually smokers, that end up in the nonsmoking referent group.

PANEL MEMBER GLANTZ: Okay. But did you go back and like look at the studies and find of the studies that were done a majority of them -- do you see what I'm

saying? Maybe, I was reading this too precisely, but it sounded to me like you looked at it study by study and 50 percent plus one of them had -- this wasn't a problem. I mean, what --

OEHHA SUPERVISING TOXICOLOGIST MARTY: You know, we should put the citation there because we got that figure from a specific paper who had done just that.

PANEL MEMBER GLANTZ: Okay. Well, I think you should just be more precise about that.

CHAIRPERSON FROINES: Melanie, can I go back to the issue of misclassification that Stan raised?

We routinely in almost every document we ever have, we have this, what's become rhetorical at some level, we talk about non-differential misclassification biasing towards the null. And it's like motherhood and apple pie.

But there's a literature Domenci from NCI, Pat Stewart from NCI and other people have written about how differential misclassification can affect the relative risk estimates. And so that whereas we tend to talk about differential misclassification as bias towards the null. There is an entire literature that looks at the issue different. And even Harvey Checkoway in his book talks about it.

And I wonder if it would be useful to have just a

sentence in the document that said, "As we've reviewed the literature, we find no evidence for differential misclassification that might have a more complex relationship to the relative risk." Just so that you've covered yourself. And I don't know whether it's necessary, but it's -- we have, I think at sometimes over-simplified the issue. And I think it's one sentence. And I don't know what Kathy thinks.

PANEL MEMBER HAMMOND: I think if it's true, if John's statement is true, I think that's a good statement to put in. But I'm not sure whether that is.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yeah.

CHAIRPERSON FROINES: What the what?

PANEL MEMBER HAMMOND: I'm not sure if that statement is true.

CHAIRPERSON FROINES: Which statement?

OEHHA SUPERVISING TOXICOLOGIST MARTY: That we reviewed the literature looking for evidence of differential misclassification.

PANEL MEMBER HAMMOND: I don't know how --

OEHHA SUPERVISING TOXICOLOGIST MARTY: To me it's a form confounding.

PANEL MEMBER HAMMOND: I'm thinking that -- the reason -- we're talking about smoker, at this point, right?

CHAIRPERSON FROINES: Yes.

PANEL MEMBER HAMMOND: And in terms of smoking status, I don't know, but I guess -- I haven't looked at it in quite that way to be sure that that's true. I think its possible that there might be more people who are diseased saying they were never smokers than people who are not diseased, but I don't know that. Do you know?

OEHHA SUPERVISING TOXICOLOGIST MARTY: I don't know that.

PANEL MEMBER FRIEDMAN: John, for clarification in the minutes, you're talking about non-differential being like motherhood and apple pie, and then -- I think then you switched to differential, did you mean all to totally switch to differential.

PANEL MEMBER HAMMOND: I think you want to dismiss the differential. He wanted to make it clear.

CHAIRPERSON FROINES: I wanted to just basically say -- you see, the problem we get into is this -- I feel, and I've written this myself, so that I'm as guilty as anybody else, that we tend to say misclassification that we observe -- we believe is non differential, therefore that will bias the relative risk towards the null, and that says the risks are probably higher. But we have misclassification.

And there is a literature that says the relative

risk can go up or down if you have different --

PANEL MEMBER FRIEDMAN: Differential.

CHAIRPERSON FROINES: -- differential no misclassification.

And so I think that some of this language becomes something that we throw in as like a protective device. And it's not necessarily based on an analysis. It's based on a belief.

PANEL MEMBER HAMMOND: No, I actually would disagree with some of that.

CHAIRPERSON FROINES: That's good.

PANEL MEMBER HAMMOND: First of all, in terms of the differential, what I can talk to is when I was on the U.S. EPA's report was the section reviewing that. The discussion of that point was about the different and there was a differential, at least a postulated differential misclassification of smoker status. And so there has generally been a contention out there that those people who are diseased with what are possible tobacco related diseases, it's like lung cancer, would might be more likely to deny that they smoked in the past than people who were not diseased.

And so that would be a differential misclassification. And so in the analysis -- and then that also might carry over into the passive smoking

analysis in doing that. And so in the U.S. EPA analysis, they actually did some calculations. And when they did their risk estimates, they actually took that into account. And they made an estimate of the degree of that misclassification and adjusted the results downward, because that would -- that type of differential misclassification would lead towards bias away from the null. And to an elevated relative risk, a falsely elevated relative risk.

And so the U.S. EPA revised their estimates downward based on their analysis of the extent of such differential misclassification.

Do you follow what I'm saying?

Now, Melanie, I don't know, but I think that that's still the status of things, isn't it, that there's still the thought -- I don't even know, you know, that there's probably some differential misclassification of former smoking status.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes.

CHAIRPERSON FROINES: Well, maybe --

OEHHA SUPERVISING TOXICOLOGIST MARTY: We have a discussion of that somewhere in this behemoth. It's probably in the --

PANEL MEMBER BYUS: I've heard this before.

PANEL MEMBER HAMMOND: But I didn't.

CHAIRPERSON FROINES: Well, maybe what we should do is just take out that end of misclassification as differential in the 1-17 and just not get into -- because, I mean, if I thought about it, somebody else can think of it.

PANEL MEMBER HAMMOND: And then I'd like to respond to the second part of what you said, John, before we go to -- yeah, I mean -- but the other part was you were saying that the discussion non-differential misclassification bias towards the null being like motherhood and apple pie.

In a small select group of people, yes. But, you know, even in the general epidemiologic community, I don't believe that that's true. I mean, from what I've seen in the literature, I don't see people taking -- most studies don't take due account of that problem. So it may be that we're talking amongst ourselves and we all know that. We recognize that. Now, we think it's a given in the world, but I don't think that's true.

So I think it's always important to talk about it. And it needs to be emphasized, particularly -- I think in this document it's totally appropriate to emphasize that, because I think it's extremely important in the case of Environmental Tobacco Smoke when you have such a ubiquitous exposure, and one that people have

tended to discount for many years. So they don't even remember themselves.

CHAIRPERSON FROINES: Well, I agree with you on that.

PANEL MEMBER HAMMOND: And also because -- and this is important, particularly in certain of these things, where -- we have to look at exposure through a lifetime. And people often do the exposure assessment based on one point in time in the adult life and another exposure are totally neglected.

So there are -- this particular set of analyses are ripe of opportunity for substantial misclassification of ETS exposure. So I think it's very important to emphasize it. And I don't believe it's really recognized sufficiently, even in the epidemiologic community and certainly not generally.

CHAIRPERSON FROINES: Well, I probably run in the wrong crowd, but --

(Laughter.)

PANEL MEMBER HAMMOND: No, you run in the right crowd.

(Laughter.)

CHAIRPERSON FROINES: -- but the non-differential therefore the risk is lower is to me becomes like a litany that we should --

PANEL MEMBER HAMMOND: But it's a small group.

PANEL MEMBER BLANC: I mean, I think that this comes back to what Stan was asking about. I think there is a very easy solution to the omission that you're calling potentially, which is on the same section that Stan was asking about on 1-18 about this 5 percent of smokers may be misclassified as nonsmokers.

PANEL MEMBER GLANTZ: Um-hmm.

PANEL MEMBER BLANC: Melanie, in terms of the 5 percent of smokers maybe misclassified as nonsmokers, I mean, I think that all you need to do is then have a sentence there saying this actually would be a form of non-random misclassification -- what's the term you used?

PANEL MEMBER FRIEDMAN: Differential.

PANEL MEMBER BLANC: -- differential that could act towards bias and towards the positive association. I mean, you say it, but you don't use the term non-differential.

And then you could have a sentence saying that other than this affect which we -- which, you know, available data indicated would be infrequent or small, we're not aware of other -- we have not postulated other substantive non-differential misclassification that would lead towards a false positive or whatever you want.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Inflated

risk.

CHAIRPERSON FROINES: But I still would take out this little thing in parentheses on 1-17. I don't think you really need it.

PANEL MEMBER HAMMOND: The less than 5 percent?

CHAIRPERSON FROINES: No, the misclassification as non-differential. I just don't think it's necessary.

PANEL MEMBER HAMMOND: But back to the area where Stan and Paul were discussing. I found myself confused, since we're into this non-differential. Shortly after where you say less than 5 percent on page 1-18, sorry. Shortly after the statement is made at least for IARC studies, "They found that 1.7 percent of the subjects who had never smoked regularly were actually former regular smokers. The misclassification was non-differential..." Is that correct?

OEHHA SUPERVISING TOXICOLOGIST MARTY: I think it was non-differential with respect to disease status.

PANEL MEMBER HAMMOND: But was that actually true? So that would be different from what I said just a few minutes ago, about what was seen.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Right.

PANEL MEMBER HAMMOND: I do think if that's true -- I was wondering if that's what you meant. I think you should explicitly say that. It was non-differential

with regard to disease status, if that was in fact true, which is I guess -- and then I was saying, and therefore would you know --

OEHHA SUPERVISING TOXICOLOGIST MARTY: It therefore would tend to bias --

PANEL MEMBER HAMMOND: Because then that follows the argument you've already been taking. This just reemphasizes that.

PANEL MEMBER BLANC: Wait a minute. Correct me if I'm wrong, but the reason why it goes in that analysis as bias towards the null is because they weren't looking at ETS exposures, they were looking at smoking as a risk factor for certain diseases, comparing active smokers to non-smokers. In that case, if you classify --

PANEL MEMBER HAMMOND: Is that what this was?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes.

PANEL MEMBER HAMMOND: Oh, well I misunderstood. I'm sorry.

PANEL MEMBER BLANC: So if bias is towards the null and you're looking at smoking and disease. But if you were looking at ETS and disease, it would bias in the other direction.

OEHHA SUPERVISING TOXICOLOGIST MARTY: It was actually ETS in lung cancer. These are Nyberg studies.

PANEL MEMBER HAMMOND: So it was ETS and not

smoking.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes, right.

PANEL MEMBER BLANC: But why would that bias towards the null?

PANEL MEMBER HAMMOND: Because you're saying 1 percent of the -- among the people with disease, 1.7 percent of the people who were classified as nonsmokers actually had been former smokers. And of those that did not have disease, 1.7 percent also claimed to be nonsmokers, but in fact had been smokers. Is that what that study had said?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Right. So that --

PANEL MEMBER HAMMOND: So that would bias towards the null.

PANEL MEMBER BLANC: So it's surprising. So what you're trying to say there is what they found -- and let's see if I really understand it. They're trying to say that if you compare ETS exposed and ETS nonexposed in both groups there's the same the likelihood that somebody was a former smoker?

OEHHA SUPERVISING TOXICOLOGIST MARTY: That's what they're --

PANEL MEMBER BLANC: They claimed to be never

smokers?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Right. That's what their study indicated.

PANEL MEMBER HAMMOND: Right. That would bias towards the null.

PANEL MEMBER BLANC: That would bias towards the null. That's very interesting. That surprises me. But so it may, in fact, not be -- although you would presume it to be, a non-differential bias, it may, in fact, not be.

PANEL MEMBER HAMMOND: You know, given this discussion, I think -- let me back up. First of all, I think you did a great job trying the tease out these 2 kinds of misclassifications, the exposure misclassification and the smoker non-smoker misclassification.

But right here I think this paragraph starts out as being ETS exposure, and suddenly you're introducing in that paragraph a smoker misclassification. So I think I would actually suggest you have a separate heading for exposure misclassification and smoker misclassification, and that you really keep those separate, because that's where we start getting confused.

OEHHA SUPERVISING TOXICOLOGIST MARTY: We tried that, and it kept intertwining.

PANEL MEMBER HAMMOND: Too hard. But I think that --

OEHHA SUPERVISING TOXICOLOGIST MARTY: Because there's both problems.

PANEL MEMBER HAMMOND: I understand they're both problems, but I think that it's extremely important to address them. So, for instance, in this case, I totally missed this. I couldn't believe it was saying what it apparently does say.

So I think it's very important in talking about the smoker -- the misclassification of smokers as nonsmokers has been one of the major criticisms of a lot of the ETS studies. And I think that it's very important to talk about how extensive that is very clearly. And this is an example of differential misclassification, which would bias away from the null and may falsely leave an impression.

However, in fact this study that you're referring to here makes it very clear that as a result of those studies, that that type of misclassification did not exist at all. And that's very important. I mean, it was not differential that didn't exist at all. It existed, but it was not differential, which is very important.

And so rather than being differential and therefore biasing away from the null, it's

non-differential and biases towards the null. Now, all of that's confusing because, in general, smoker misclassification is going to be seen as differential. So when you put that into the paragraph when you're talking about exposure misclassification which is generally non-differential, it's made even more confusing.

So I know it's hard, but I really would urge you to try to keep at least each paragraph clean as to whether it's ETS exposure misclassification or smoker misclassification. But I think you've done a wonderful job. I really do.

CHAIRPERSON FROINES: Do we want to recommend that any discussion about tobacco smoke misclassification be in the body of the text where it's dealing with the specific studies, whereas this first chapter is meant to be more general?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Right. And we got the opposite recommendation at the last meeting.

PANEL MEMBER HAMMOND: No. No. I think what you've done is very important. And I like it the way it is. I really think -- I mean, except for what I'm saying. But these are tiny little details. But I think it's very important to have the general discussion.

CHAIRPERSON FROINES: The answer to the question

is no. Okay, let's move on.

PANEL MEMBER HAMMOND: And this is a small thing, but it actually changes the meaning. On that same page at the end of the first line, just move the word "only" to "only at baseline".

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yeah.

PANEL MEMBER HAMMOND: Just not only evaluate it, but evaluate it at baseline.

CHAIRPERSON FROINES: Stan.

PANEL MEMBER GLANTZ: I just wanted to agree with that. I think treating them as separate paragraphs, I mean, that is -- the fact that they were mixed together is what got me confused.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay.

PANEL MEMBER GLANTZ: And then I just have one other thing in the table on page 24, which appears multiple times at the very last line in the last column

CHAIRPERSON FROINES: What page?

PANEL MEMBER GLANTZ: This is page 1-24. Where you say approximately 68 to 220 percent, don't you mean 120 percent?

DR. MILLER: Yes.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes.

PANEL MEMBER GLANTZ: And then the other thing -- this table is repeated multiple times, so make sure you

find it everywhere.

OEHHA SUPERVISING TOXICOLOGIST MARTY: It's in the Exec Summary also.

PANEL MEMBER GLANTZ: Yeah. And then why -- the columns above that for Asthma, new cases, exacerbation are left blank and the lower respiratory illness says NA. Why didn't you just use the whole numbers, if nothing's changed? Because I think --

OEHHA SUPERVISING TOXICOLOGIST MARTY: The lower respiratory illness we're talking about.

PANEL MEMBER GLANTZ: I'm talking about those 2 things. Every other row has numbers and then one of them is blank and one says NA on it. I mean, can't you just say use the old numbers and just say no additional information since then or something, because I thinking having those empty is going to confuse people. Or is there a reason not to do that?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Well, for the lower respiratory illness, I don't think there's a reason to not do that.

For the asthma, the episodes is what we actually calculated in this --

PANEL MEMBER GLANTZ: Oh, I see.

OEHHA SUPERVISING TOXICOLOGIST MARTY: -- in this update.

DR. MILLER: That was based on the available data, we couldn't replicate.

PANEL MEMBER BLANC: Then just put not available.

PANEL MEMBER GLANTZ: Well, then what I think -- I just think what you should do for clarity is maybe just put a footnote under asthma and just say that, "Because of changes in data, the availability we're computing episodes, whereas in the earlier one we did it differently", you know. Just so that it's clear why you've got those empty cells. That's all. I think just a little bit of explanation of why you did what you did.

CHAIRPERSON FROINES: I don't think you should have empty cells with no footnote.

PANEL MEMBER GLANTZ: Yeah. That's everything I had.

CHAIRPERSON FROINES: Okay. We've been through Paul, Stan and to some extent Kathy. Kathy, do you have further comments?

PANEL MEMBER HAMMOND: No.

OEHHA SUPERVISING TOXICOLOGIST MARTY: But what Stan --

PANEL MEMBER HAMMOND: Well, let me just say -- I do want to say once again, I think you did a nice job on doing this. I think it's very important and that it will be useful.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Thank you.

And Stan what you were just asking for is actually in the text, but what we can do is do a better job of the footnotes.

PANEL MEMBER GLANTZ: Well, I think it's okay to have it in the text too. But I mean a lot of people, as you know, the only thing they're going to look at in the report is this table. And so you want it to be self contained.

CHAIRPERSON FROINES: Yeah. This is going to come up later in another issue, but people look at tables. I don't read -- I have papers that I don't read, I just look at the tables and figures, and a little bit of the discussion.

(Laughter.)

PANEL MEMBER GLANTZ: Kathy Hammond only thinks you should publish tables and leave the text out entirely.

That was a joke.

(Laughter.)

PANEL MEMBER HAMMOND: Kathy Hammond objects to this characterization.

(Laughter.)

CHAIRPERSON FROINES: The last 2 comments were jokes for the record.

(Laughter.)

CHAIRPERSON FROINES: Moving on.

Charlie.

PANEL MEMBER PLOPPER: I have only one comment on this. And that I came into this document with a bias that OEHHA always does a very thorough job of looking at all the literature and doesn't treat all studies equally, because they're not equal. And my only concern is that there's some judgmental comments made in here. These are all peer-reviewed studies. So to say the word "well done" or "well documented" or "well conducted" sort of leads the reader away from the issue that they're not really rigorous enough.

So I read that through the parts I've looked through. And it just bothers me that -- why don't you just say they're rigorous or they're not rigorous or rigorous or less rigorous, which is what you do, right? And you laid out a nice set of criteria used for rigor and I happen to agree with it. And I think you should say that instead of saying they're well conducted or not, because it's just going to irritate people. When the fact of the matter is that they're just not rigorous enough.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay. We'll use rigorous and less rigorous.

PANEL MEMBER PLOPPER: You defined that all the way throughout. I'm sorry, I've been away so long. That

was my bias coming back to reread parts of this. It's just going to irritate a lot of people, and it's not really what you do. You're put rigor and that's what I was concerned about.

CHAIRPERSON FROINES: Good point.

Gary.

PANEL MEMBER FRIEDMAN: I have nothing to add.

CHAIRPERSON FROINES: Craig.

PANEL MEMBER BYUS: I think this chapter is much much better. And I thought I understood all the ETS misclassifications after reading it. Now, I'm not so sure I do.

(Laughter.)

PANEL MEMBER BYUS: And if you ask me to explain just what you all just said, I think I would have a difficult time.

But I think it is much better and very clear. And if you put this in there, it will be very, very clear.

CHAIRPERSON FROINES: You know, if you go look around the country at schools of public health and other institutions, this issue is not very adequately dealt with in most places. It's over-simplified. And it's really an important topic.

PANEL MEMBER BYUS: Well, it's very clear that it is an extremely important topic in this document, if not

central to it, in my estimation. So any clarification you all can bring to this issue and to write it down clearly, I think, will be very beneficial to the document.

I couldn't agree with that more.

CHAIRPERSON FROINES: Joe.

PANEL MEMBER LANDOLPH: It's good enough. I think it's been substantially improved. Lots effort into it and I don't have anything to add.

CHAIRPERSON FROINES: Roger.

PANEL MEMBER ATKINSON: I don't have any additions.

CHAIRPERSON FROINES: Melanie, I just had 2 sort of generic comments. I would like -- this now becomes, in essence, almost a methodology for future substances, as well. In other words, what you've done is not necessarily limited it, even though there's overlap. And it would be useful to take Chapter 1 try and clean it, so it has generic applicability and include it for other chemicals, because industry and environmental groups and the public won't necessarily have read this document. And to have something that shows how you make decisions as a generic approach, I think, would be particularly useful.

So you may think about its applicability in other documents, because a lot of work has gone into it, and we might as well take advantage of it.

The second thing I would say is that you should -- we talked about publication. I would think about taking this document and saying in some journal maybe Regulatory Toxicology or I don't know Risk Analysis or some journal and say here is how California is approaching its decision making on toxic substances, and it would be very useful if it were published, because you would get a lot of feedback. And it would create a debate that would be, I think, useful and interesting.

And so you may -- those are sort of generic remarks, but I think it's worth saying that California has gone to another level of trying to define causality and how we make decisions. And that's useful to the broad community. It certainly would be useful to other State governments. And hopefully even EPA would read it and benefit from it. I won't say it anything further on that.

PANEL MEMBER BLANC: Can I ask a question about the attributable risk section. I just have a brief question.

I know you say -- it's very useful that you put the simple formula that you used. I assume that there were some studies for which you only had the odds ratios and not the relative risk though. Let's see attributable fraction -- where do you put the formula -- oh yeah --

OEHHA SUPERVISING TOXICOLOGIST MARTY: Page 1-15.

PANEL MEMBER BLANC: 1-15. This document is generally calculated by the formula, blah, blah, blah, blah.

OEHHA SUPERVISING TOXICOLOGIST MARTY: You can use an odds ratio rather than relative risk. It really already --

PANEL MEMBER BLANC: But it's a slightly different formula when you use the odds ratio, right? It's not that -- Stan, do you remember?

PANEL MEMBER GLANTZ: I thought that if the odds ratio is near 1, it's a good approximation to the relative risk. And so you could use the same formula.

PANEL MEMBER BLANC: No. In the odds ratio you can use the exposure prevalence in the diseased. And in this one, you can use the exposure prevalence in the entire population. I just don't want you to get yourselves into trouble.

If you look at the American Thoracic Society's statement on the Burden of Occupational Exposures to Airways Disease, there's really an exhaustive and boring discussion of these formulae. The other thing is that -- and this may not be necessary for this document but were you to do the things that John is suggesting it might be -- there are even more rigorous ways of calculating the attributable risk that also give you a 95 percent

confidence interval that adjusts for the covariants that are looked -- that were looked at in the logistic regressions if it was an odds ratio, and take that into account, especially in the estimation of the confidence interval.

Clearly, you wouldn't do that because you didn't have the raw data for these studies. And so it would be unlikely that there would be a situation where, you know, you could do that. But it's if -- and I don't think it's necessary for this document. But it's something if you were going to really be more explicit, you'd need to say that.

But I do think the other thing that's probably likely is that they will be some and you only have many that you had the odds ratios you use the other formula, that had this based on the prevalence in the diseased.

DR. MILLER: You're talking about P here in the formula. The Ps that were used are population based exposure data prevalence. So when possible I think we used California data, and sometimes it's national.

CHAIRPERSON FROINES: I have a question.

PANEL MEMBER HAMMOND: I'm sorry.

DR. MILLER: Well, the formula on page 15. I think we're talking about P, which is the exposure prevalence. And what we determined was prevalence of

exposure being population, either in California or national statistics depending on what was available.

PANEL MEMBER HAMMOND: And --

DR. MILLER: Not in the disease, that's population exposure prevalence.

PANEL MEMBER BLANC: All right, just double check it because it depends on what --

PANEL MEMBER HAMMOND: Yeah, I thought that was --

PANEL MEMBER BLANC: And that is true if you have the relative risk. But if you don't have the relative risk, just stick in an odds ratio --

DR. MILLER: Well, there they're talking about relative risk comes from -- you know, is extrapolated.

PANEL MEMBER BLANC: From the studies.

DR. MILLER: From the studies and you have meta-analyses.

PANEL MEMBER BLANC: Suppose you don't have the relative risk, and you only have the odds ratio.

PANEL MEMBER HAMMOND: But I think if you have an odds ration, and the odds ratio is close to 1, then that it very close to the relative risk, and therefore you can use it for the relative risk. That was the point. In which case then you can also use the prevalence in the population as opposed to prevalence in the disease.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Right.

PANEL MEMBER HAMMOND: And that was my understanding of what you were saying.

DR. MILLER: That's right.

PANEL MEMBER HAMMOND: And perhaps -- to follow, you know, Paul's point, maybe it's worthwhile to say -- I mean, because what you say, you say explicitly R is an estimate of the relative risk. And, you know, maybe you could add that in studies that have a relative risk you use the relative risk. And in studies that you have the odds ratio, if the odds ratio is under X value 1.X, you will use the odds ratio as of the thing the relative risk refer to a document that says you can do that.

How about that.

PANEL MEMBER BLANC: Yeah, that's fine.

DR. MILLER: That would be more clear.

CHAIRPERSON FROINES: Melanie, how long do you think it's going to take for you to go through the revisions on Chapter 7?

OEHHA SUPERVISING TOXICOLOGIST MARTY: It shouldn't take that long. It's the discussion. My slides will be fast.

(Laughter.)

OEHHA SUPERVISING TOXICOLOGIST MARTY: That's up to you guys.

CHAIRPERSON FROINES: I ask my wife questions and she always answers whatever she feels like. She never tells me the answer to my question, so this is a reflection of the same thing. We've been together too long, I'm afraid.

(Laughter.)

CHAIRPERSON FROINES: The question is how long do you think it will take? I mean, 20 minutes because I want to take a break, if we're going to take a fairly lengthy time.

OEHHA SUPERVISING TOXICOLOGIST MARTY: You probably should take a break.

CHAIRPERSON FROINES: Let's take a break for 10 minutes.

(Thereupon a recess was taken.)

CHAIRPERSON FROINES: For the record, Peter has just handed out the draft Findings, so everybody has them for the discussion later. And Jim has also handed out the document from Dr. Enstrom that we discussed earlier.

PANEL MEMBER FRIEDMAN: The draft Findings is that the same ones we got by Email?

CHAIRPERSON FROINES: Yes. We just wanted to make sure you had them in front of you.

Melanie.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay.

Again, we made a number of revisions to Chapter 7 in response to panel comments. We added -- all of these revisions that I'm going to discuss are in the breast cancer section. We added discussion or the conclusions of the Surgeon General and the IARC reports, both that came out in 2004, on active and passive smoking and breast cancer. And we acknowledged that there are differing opinions out there.

We edited the summary of active smoking and breast cancer, condensed it a little.

And we clarified the origin of risk estimates used in our meta-analysis. And for those that we derived using data in the papers, we clarified how those were derived.

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OEHHA SUPERVISING TOXICOLOGIST MARTY:

CHAIRPERSON FROINES: Just for the record, everybody on the Panel has received a copy of the changes, so the Panel has actually seen the changed document.

OEHHA SUPERVISING TOXICOLOGIST MARTY: In the OEHHA summary of risk estimates section, we edited --

PANEL MEMBER FRIEDMAN: Could I go back. The one that we got, are you talking about what you've done to the one we've got or what you got done since we sent you comments about that one we got.

(Laughter.)

OEHHA SUPERVISING TOXICOLOGIST MARTY: Right now, I'm talking about the one that you got. And in a few minutes, I'll talk about additional stuff we're going to do in response to particularly your comments and other people.

So we edited this section for clarity and condensed the text. And we finalized the pooled risk estimates. There were some minor changes primarily from -- we look at how we derived one of those estimates on I mentioned earlier.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: In the section on discussion of ETS and breast cancer, we changed our terminology of the studies that we thought were "most informative" to "most informative" from "most influential", which seemed to annoy virtually everyone.

(Laughter.)

OEHHA SUPERVISING TOXICOLOGIST MARTY: We edited the discussion of importance of exposure misclassification. We clarified and condensed sections on strength of the association, consistency and we added to the discussion regarding confounding by uncontrolled factors.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: In the conclusions section for breast cancer, we separated the section on younger, primarily premenopausal from older/postmenopausal. We condensed the writing in that section in eliminating excess verbiage.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: And the conclusions are on this slide. And this is the wording that's currently in the document. For the younger primarily premenopausal women we have a statement that, "Overall, the weight of evidence (including toxicology of tobacco smoke constituents, epidemiological studies, and breast biology) is consistent with a causal association between ETS exposure and breast cancer in younger, primarily premenopausal women." And we have a discussion of why we chose those terms in there.

And further more, for postmenopausal women, "...we conclude that further research is necessary to characterize ETS associated breast cancer risk in postmenopausal women, and the evidence to date is considered inconclusive".

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OEHHA SUPERVISING TOXICOLOGIST MARTY: That's it for the overview slides. I can go to the -- there's a couple of slides I have for a comment that Dr. Friedman

made, plus I have more that I was going to say in response to his comments. I don't know if you want to jump to that or go around the room.

PANEL MEMBER BLANC: Go jump to that.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay, let's jump to that.

I did have some slides, I don't know if you folks want to see these. These are just essentially why we came to our conclusions. It's what you've heard before.

But for ETS and breast cancer association in younger premenopausal women, there were 14 studies that evaluated breast cancer risk in this strata; 13 of those 14 found elevated risks estimates; and 7 of those were statistically significant.

The pooled risk estimate from our meta-analysis of those 14 studies is 1.68 with a confidence interval that excludes 1. And the pooled risk estimate for the studies in the meta-analysis with lifetime exposure information from all sources was higher. It was 2.2, again with a confidence interval that excludes 1. And there were some studies that provided evidence of dose response.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: And this is the figure out of the document that shows those studies

plotted along with the summary risk estimates on the right.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: These are the 6 studies that OEHHA considered most informative and the results of the analysis from these studies for younger premenopausal women, the relative risks and then the 95 percent confidence intervals. And they ranged from 1.59 to 3.6. And all the lower confidence limits excluded 1.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: There was evidence from 9 studies on risk to postmenopausal women. And the evidence appeared inconsistent and generally null. Although, there were a few studies that showed elevated risk estimates. And as I noted earlier, we think further research is necessary to characterize the association between ETS exposure and breast cancer in postmenopausal women.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: This slide just shows the premenopausal studies and postmenopausal studies, sort of a birds-eye view.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: We did get comments from a couple of the Panel members. Dr. Friedman

sent some comments noting that we say that we didn't think SES and alcohol were strongly related to either breast cancer or ETS, emphasis on the strongly. And he asked us to give evidence of that. So we actually planned to put in a couple of paragraphs describing that.

In a nutshell, alcohol association is actually relatively weak for breast cancer, which is not to say it's not there. It's there.

In the collaborative study, the relative risk estimate -- and this is an analysis, I think, of 53 individual studies. For those women consuming 15 to 24 grams per day, the relative risk estimate is around 1.2. Johnson --

PANEL MEMBER GLANTZ: How much alcohol is that, for those of us, 15 to 24?

DR. MILLER: What they say in that paper is that it depends on the country, but it ranges somewhere in the 10 to -- I think 8 to 12 grams per drink. The United States is actually more. I think there was 12 and some - written was 10, or something like that. Approximately 10 grams of alcohol per drink.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Johnson's paper in 2000, he did look at alcohol effects and had relative risks stratified by the amount of alcohol drinks per week of less than a half, from a half to less than 3.5

and greater than 3.5. And he got a similar risk estimate of 1.2 for greater than 3.5 drinks per week.

And then Reynolds et al., looked their teachers' cohort. And from their data, their survey data, about 8 percent of teachers consumed more than 20 grams per day. So the upshot is that confounding either uncontrolled or residual for an infrequent behavior with a small magnitude associated risk couldn't substantially alter or explain the association noted between ETS and breast cancer in the studies that we looked at.

And I should note that most of those studies at least did some sort of confounding control for alcohol consumption.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: And also some studies did some sort of control measurement for SES. In this slide there is a greater --

PANEL MEMBER FRIEDMAN: Can I go back to alcohol for a second. Do you mind if I interrupt?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Sure, no.

PANEL MEMBER FRIEDMAN: Do you have any data on the association of alcohol with Environmental Tobacco Smoke, because you presented one side of the issue, which is pretty persuasive, but it wouldn't explain it. But I think it would be also important to show whether there's

an association with Environmental Tobacco Smoke.

OEHHA SUPERVISING TOXICOLOGIST MARTY: I think we do. In fact, it might even be discussed somewhere in this. Yeah, we can pull that up. There is actually -- I do. I know there are data that we can pull together for that.

PANEL MEMBER FRIEDMAN: I think it would be good to have that in there too.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yeah. I mean, I think that you can -- if you think about it, smoking is higher -- there are higher rates smoking in lower SES, and naturally you would expect higher rates of ETS exposure in lower SES strata. And that's my remembrance of the information that I know we have somewhere.

PANEL MEMBER FRIEDMAN: I'm talking about alcohol and ETS.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Sorry. Okay, alcohol and ETS, yes.

PANEL MEMBER FRIEDMAN: The question of confounding, you presented one part of the issue in terms of alcohol and breast cancer. But I think it would be also important if there are data to present the alcohol association, if there is any with ETS.

PANEL MEMBER BLANC: Well, okay, but I would

presume that there's an association. For some reason there isn't an association between alcohol and active smoking, there just has to be an association between alcohol and ETS.

PANEL MEMBER FRIEDMAN: Well if there are data on that, I think it would be nice.

PANEL MEMBER BLANC: That means that the data if -- and that would be where I would go. But if you don't have the data, I would simply make a statement that say even presuming some association, for example people who go to bars outside of California are going to have more ETS and people going to bars are more likely to drink alcohol.

(Laughter.)

CHAIRPERSON FROINES: I have a procedural question. If you want to add a study or studies to address Gary's question, I assume that we can proceed with the completion of the document and a decision on the assumption that you'll add those. And Gary can look at them even -- in other words, I'd just as soon not want to have another meeting on this topic.

PANEL MEMBER FRIEDMAN: Oh, that's fine.

OEHHA SUPERVISING TOXICOLOGIST MARTY: And we've done that in the past, where we've responded to a comment at the last meeting, sent the response to the Panel

person, and gotten agreement that way.

CHAIRPERSON FROINES: Good.

DR. MILLER: There's a paper by Reynolds that looks at correlations with ETS. And I just don't remember clearly off the top of my head that exact paper, but we'll find that.

PANEL MEMBER FRIEDMAN: We even have a paper, but I don't remember whether we looked at alcohol or not. That was many years ago. Well, I'm sorry to interrupt, but I just -- while we are on alcohol, I just wanted to clarify.

CHAIRPERSON FROINES: No, I think that's important.

OEHHA SUPERVISING TOXICOLOGIST MARTY: George is pointing out to me that we also have stated that in studies that controlled for alcohol and SES, there was little impact on the risk estimate.

PANEL MEMBER FRIEDMAN: Right.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: In terms of SES, there are greater rates of breast cancer in higher SES women, but it's thought to be due to reproductive risk factors, namely parity, age at first birth is probably a big one, because you put off having children to get educated. These, along with surrogates of SES, are

routinely included in multivariate analyses.

And as George just pointed out to me, the reported adjusted results rarely differ substantially from unadjusted results. And that statement is true for both SES and alcohol control.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: Dr. Friedman also had another point, which I had a slide, and it's not there. So I must have inadvertently deleted it. But on page 1-18 and 1-19, he notes that we spend a lot of time talking about anti-estrogenic effects of active smoking, but we don't talk about are there data on anti-estrogenic effects on passive smoking. And we should put that in there, if there are.

So I think what we note is that in the literature when people were looking at active smoking and anti-estrogenic effects of active smokers, they were comparing them simply to nonsmokers, which are going to include passive smokers. There aren't a lot of studies that we found that looked at specifically anti-estrogenic effects of passive smokers.

There is one that's in our Chapter 5 that looked at age at menopause in passive smokers, and it was not different than nonsmokers. But the active smokers had -- they came to menopause sooner than both the passive

smokers and the nonsmokers. So this is not to say that there isn't any anti-estrogenic effect. It's just that, if there is, it hasn't been measured, and it's less than smokers.

PANEL MEMBER FRIEDMAN: I think it would be important to put that in this section too, repeat that information.

PANEL MEMBER BLANC: Just for our edification, is the anti-estrogenic effect of smoking monotonic in terms of its dose response?

OEHHA SUPERVISING TOXICOLOGIST MARTY: I don't know. I can't answer that.

PANEL MEMBER BLANC: Stan, do you know?

PANEL MEMBER GLANTZ: The things I know are that smokers have earlier menopause. There are other things that are related to it. I don't know that anybody's -- I've never seen anything that showed the very heavy -- the effects reverse among very heavy smokers. But this isn't my area of expertise, but I've certainly never heard that.

DR. MILLER: The only things I can remember reported are smokers versus nonsmokers.

PANEL MEMBER BLANC: Because if there was a study which showed that if you smoke half a pack or less a day, it doesn't appear to have substantive anti-estrogenic effects than by extrapolation you could say it's unlikely

that passive smoking as active.

Whereas, you know, if it's a sort of straight linear line, rather than having an upswing when you start to get to 1 pack and 2 packs a day or something. It's been looked at in terms of intensity -- smoking intensity.

OEHHA SUPERVISING TOXICOLOGIST MARTY: We can look at that, and see if we can find anything, and then add that into the discussion.

PANEL MEMBER FRIEDMAN: I think you argument that a comparison group of smokers contains some passive smokers is fairly weak, because certainly a smoking group has a lot of passive smoking going on. So I'm not -- I don't think that's a very strong argument suggesting that passive smoking is not -- does not affect estrogen.

OEHHA SUPERVISING TOXICOLOGIST MARTY: That's true.

CHAIRPERSON FROINES: This is an aside. Have there been any studies that you're aware of where people have looked at endocrine disruptors and passive smoking?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Not that I'm aware of.

CHAIRPERSON FROINES: That's an interesting issue isn't it, when you think about estrogen.

PANEL MEMBER BYUS: And as I said at the last meeting, I'm still -- I think this discussion of the

anti-estrogenic effects is all well and good, and it's all nice, but it's not clear the role of estrogen in really breast cancer. And it's very complex, both added estrogen and the dose response issue is extremely complicated. And you're going to get into all kinds of issues with it. I mean, it's a nice thing to do. It makes -- you know, it's kind of intellectually satisfying. But I think the more you discuss this, the more you could potentially go down the wrong path.

CHAIRPERSON FROINES: Well, I think that's why some of the --

PANEL MEMBER BYUS: That's all. You know, it's a nice thing to say, but not to get too carried away with.

PANEL MEMBER FRIEDMAN: Well, it's so key, because the first thing people react to when they see the passive smoking association with breast cancer, they say well what about active smoking, why isn't that? So, yes, there is a small association, but it's no greater. And that's the rational for why the active smoking is not greater than the passive is because active smoking suppresses estrogen.

So that is such a key point in this whole discussion that even though it's -- Craig, I take your -- I understand what you're saying, and, you know, I agree with it, but that's so much of the basis of their

conclusion.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Well, let me say something --

PANEL MEMBER BYUS: The epidemiology data is solid based on the classification of who smokes and doesn't, and whether you're exposed to passive smoke truly or not. I mean, the data that is epidemiological that persuades me is very clearly laid out.

OEHHA SUPERVISING TOXICOLOGIST MARTY: I think we've only said that the antiestrogenicity is one argument that's out there.

PANEL MEMBER BYUS: That's all. It's not --

OEHHA SUPERVISING TOXICOLOGIST MARTY: And it doesn't -- you know, we're not hanging our hat on that.

PANEL MEMBER BYUS: No, don't hang your hat.

OEHHA SUPERVISING TOXICOLOGIST MARTY: We just are saying that the dose response is nonmonotonic because for sure of this effect, but it certainly can be argued that it may play a role.

PANEL MEMBER FRIEDMAN: Well, if it wasn't estrogen, what other reason would you have for active smoking, which includes a lot of passive smoking, not having a stronger association with breast cancer than pure passive smoking?

OEHHA SUPERVISING TOXICOLOGIST MARTY: You know,

the other -- well, you can probably argue the same reasons that, you know, cardiovascular coronary heart disease relative risks for passive smoking aren't really that much lower than for active smoking. So I think the question is you have a complex mixture, lots of different chemicals. The mixtures are a little bit different. The exposures are different, to any specific toxicological -- to any particular component that's toxic in both passive and active smoking. So it's a very complicated thing. There's lots of synergies, antagonisms, additive stuff going on. It's pretty hard to look at these things.

I think it's worth noting, too, that for -- well, actually I have a slide in their somewhere, but that for lung cancer from active smoking, you also see -- you see an increase by pack years until you get to a certain level, and then it flattens off and it even drops off a little bit. So that's probably reflective of you've already killed the sensitive people and there is old geezers out there who can smoke a pack a day and they're never going to die from --

CHAIRPERSON FROINES: Well, I think there's a healthy-worker-survivor effect that you're talking about. But I think there's also some biological processes. I mean, you get the high doses. I can give animals low, medium and high doses, and I can knockout any immunologic

responses at the high doses and get a U-shaped curve upside that U-shaped curve. So I think that our view -- I think our traditional view that our response goes up uniformly with dose is so over-simplified biologically that we should be thinking about it in much better terms at this point.

PANEL MEMBER BLANC: Well, the point that you make in Chapter 1 about biological plausibility is not -- biological plausibility doesn't mean that you have explained the biological mechanism. It means can you come up with some kind of plausible explanation, and that's all, you know, to meet that requirement. But, you know, you're on thinner ice if it's a relationship for which it's, you know, very difficult in the light of the biological knowledge to deposit any kind of explanation. So you've done your due diligence.

PANEL MEMBER BYUS: And the analogy to that as I was telling Katharine, is a electromagnetic field, which I'm fairly familiar. There you have low-dose epidemiology some evidence, but coming up with biological plausibility is the problem. How those fields interact with living organisms and tissues in a way that could cause increased health risks.

You can't actually postulate a plausible testable result. That doesn't mean it doesn't exist. It's just

that it means nobody's been able to figure out what it is yet. I mean in this case, there is plenty of plausibility. It's just that you don't know exactly what it is.

CHAIRPERSON FROINES: I think we should move on, because I think that the conclusion that estrogen plays a role is probably reasonable, but the conclusion that we know what the biochemical and biological mechanisms are is a whole different issue altogether. And so we should assume that we don't know, but that estrogen is one of the factors that is likely to have some role and let it go at that.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: We also got comments from Dr. Glantz on the chapter that you have and we will be making editorial changes per his suggestions.

CHAIRPERSON FROINES: On the chapter that what?

OEHHA SUPERVISING TOXICOLOGIST MARTY: The Chapter 7 the breast cancer section. So I don't know if Stan wants to go over any of those points here.

PANEL MEMBER GLANTZ: No, I don't think -- they were all editorial. There aren't any substantive -- was there anything substantive?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Is that a

trick question?

(Laughter.)

PANEL MEMBER GLANTZ: No.

CHAIRPERSON FROINES: Well, you realize that every time a question like that gets raised, those of us who have been on this panel for awhile remember that, and that took a whole day of detail.

PANEL MEMBER GLANTZ: Well, that was a different situation.

PANEL MEMBER BYUS: That was a special situation.

(Laughter.)

PANEL MEMBER GLANTZ: Yeah, that was a very special situation.

CHAIRPERSON FROINES: So I prefer to not do it as long as they're editorial. If there substantive questions --

PANEL MEMBER GLANTZ: No, I think it was all just small points of clarification, weren't they? I mean, I've got them here. I could look at them.

PANEL MEMBER BLANC: Can I ask a question that relates to --

PANEL MEMBER GLANTZ: I has sent them to John too.

PANEL MEMBER BLANC: -- that relates to Chapter 7 to the Executive Summary.

CHAIRPERSON FROINES: I didn't have problems with Stan's comments just for the record.

PANEL MEMBER BLANC: In the Executive Summary in the latter part of the Executive Summary you did a good job of reiterating the substance and the nuance of what you were trying to say in Chapter 7.

I thought that in the summary of the Executive Summary -- you know how the Executive Summary is structured with an introductory, you know, summary of the summary and then the summary. And I think that in the summary of the summary, which apropos of John's comments may be all that people will get to, I think there you weren't as successful just because of the wording on the breast cancer. And so I would -- I wanted --

PANEL MEMBER BYUS: Where is that?

OEHHA SUPERVISING TOXICOLOGIST MARTY: ES-4, I think.

PANEL MEMBER BLANC: Yes.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yeah, you're right. We were not -- we will clarify that per our new wording. That's the problem.

PANEL MEMBER BLANC: Can you go back and make that wording, because you did in the latter part of the Executive Summary.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes.

PANEL MEMBER GLANTZ: And actually, there's like multiple -- there's also an Executive Summary at the very beginning of the document, and then there's the Executive Summary at the beginning of Part B. And you need to just go make sure all of those are totally consistent with each other. And I realize they've been written at different times and rewritten.

And when I went through it -- I mean -- and I would, as Paul suggested, I would take like the clearest language you have in any of them and use it in all of them.

CHAIRPERSON FROINES: Gary had a comment.

PANEL MEMBER FRIEDMAN: One of the first slides you showed was the conclusions you drew about premenopausal and postmenopausal. You use the word "inconclusive" for the postmenopausal. I'm just wondering if you shouldn't say it's negative so far. The data you showed the points just clustered around relative risk of one. I think to say it's inconclusive, I'd say so far the evidence is negative for postmenopausal.

OEHHA SUPERVISING TOXICOLOGIST MARTY: We actually used inconclusive throughout the entire document rather than characterizing something as null or negative. So it --

PANEL MEMBER BLANC: I think inconclusive is the

terminology that is consistent with how they have handled all the other things. So I think that since inconclusive means, by their definition in Chapter 1, which means that yeah, maybe there are a couple of positive studies and technically speaking there are --

PANEL MEMBER FRIEDMAN: If you want to show that slide again, the ones that you have in black that you consider the better studies were actually below 1.0.

PANEL MEMBER BLANC: Yeah, but again, I think they should be consistent. So I'm very conservative in this regard. I think to use the term "inconclusive" is sufficiently negative for them to use that, since that's the words that they use.

Because technically speaking for them to say negative all of them would have to be below the line. Inconclusive is consistent with the terminology as they've set it out. I agree with you that this is negative, but the thrust of their use of the term inconclusive is that it's negative.

PANEL MEMBER FRIEDMAN: Well, I mean I read her -- it's definitely positive for postmeno -- premenopausal women. But postmenopausal is still inconclusive, more studies are needed. It sounds like -- and you just emphasized the positive. You say that there are some positive studies. You don't say there's negative

studies too. So, I mean, I just feel -- you shouldn't go out on a limb.

CHAIRPERSON FROINES: Would it be helpful if they added part of the sentence that said that there are some positive studies, but by and large most of the studies are negative?

PANEL MEMBER BLANC: Generally, null. Generally null is what it says.

PANEL MEMBER FRIEDMAN: Well, why do you point out that the few of the lower quality studies show elevated risk? Why not just say a few of the higher quality ones, you show the reduced risk.

OEHHA SUPERVISING TOXICOLOGIST MARTY: We could just leave it at generally null.

PANEL MEMBER BLANC: Period.

CHAIRPERSON FROINES: That would be okay.

PANEL MEMBER FRIEDMAN: Yeah, I would feel better about that.

CHAIRPERSON FROINES: Those are good comments.

Melanie, are you going to go on to Thun's comments?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes.

CHAIRPERSON FROINES: I just want to make one comment about Thun's comments, the document that I sent him, that he made these comments from was the document

that we used at the last meeting. He has not -- as far as I know, he has not seen -- well, I don't know whether he's seen it, but he hasn't commented on the most recent version. So these comments reflect what was at the March meeting.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Right. The Panel received the comments and our responses in their packets. So I'm assuming everybody --

PANEL MEMBER GLANTZ: I just have -- are those going to be added to the web site and to Part C in the front of the document?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes, they are an addendum to Part C, so they will be there.

We have more written down, clearly in our responses to comments than I'm going to cover. So I'm just kind of hitting the highlights.

Overall, Dr. Thun thinks the report describes the evidence concerning breast cancer in a manner that overstates the case. At this point, Dr. Thun still considers the evidence limited rather than conclusive according to IARC criteria, which he is careful to point out.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: And, again, he's commenting on the previous draft. And in this

draft we clarified the conclusion as causal for younger primarily premenopausal not postmenopausal women. We discussed a lot of the issues he's brought up more clearly in the latest draft, particularly the potential for explanation by uncontrolled or unknown confounding, which he has an issue with. And we believe the evidence is sufficient for younger, primarily premenopausal women.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: Dr. Thun notes that the available data leave much room for uncertainty. And he expressed concern about how uncertainty was addressed in the document.

And he also thinks that the report does not consider inconsistencies among the studies, and the possibility of unmeasured factors correlated with ETS influencing the results.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: And our response is that we routinely recognize and deal with uncertainty in any health effects assessments. In the case of ETS, we have real-world exposure data in humans, so there is no extrapolation uncertainty from high dose to low dose or from animal to human.

Throughout the document OEHHA focused on study quality and reasons for inconsistencies in results. And

exposure assessment pops up time and again as being -- presenting problems for ETS study.

We also considered for each study the reported effect estimate in the 95 percent confidence interval of those estimates for each study. We note that most studies controlled for major known risk factors, so that confounder control was considered in the studies and in our document.

And finally, we conducted meta-analyses for women overall, all ages, and premenopausal younger women both had pooled estimates above 1. And in both cases the 95 percent low confidence limit was greater than 1. So we think we actually did a pretty good job of considering uncertainty in the document.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: Dr. Thun and others, I might add, note that stating that recent studies have consistently found elevated risk to be misleading, since some recent studies fine no association.

And the Panel members brought this up the last time, the word "recent" we meant to being published after the '97 report caused a lot of confusion. So we just reworded that paragraph.

But we do note that within the younger premenopausal strata findings of elevated risk, cancer

risk, from recent and older studies are consistent.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: Dr. Thun comments that OEHHA attributes negative findings of studies to misclassification of ETS exposure and inclusion of ETS exposed in the referent population. However, he notes that in the Reynolds' study, only active smoking is associated with breast cancer risk. And this association is unaffected by inclusion or exclusion of women with household ETS exposure from the referent group.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: Reynolds herself notes in her cohort that from the early eighties onwards, the sources of ETS exposure come primarily from outside the home, which that group did not evaluate. Misclassification of those exposed to ETS at work or outside the home as unexposed, could actually result in failure to identify an association between ETS exposure and breast cancer.

And while it's true that for active smoking it didn't seem to make a difference what referent groups you used. In fact, her referent group even the one that was unexposed was actually exposed. And she, herself, notes this.

So we don't think that's a reason to refute or

nullify any of the other studies that found an association.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: And this gets to what we were discussing earlier, Dr. Thun notes the magnitude of the effect of passive smoking is said by us, I mean by us, to be similar to that of active smoking. While this hypothesis may be biologically possible, it is not typical for a dose response relationship.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: We note that it's more important to look at dose response evidence within passive smoking studies and within active smoking studies, rather than between them. ETS and mainstream smoke are not identical nor are the exposures of passive smokers and active smokers to specific toxicological substances.

And we also note that non-linear dose response relationships are not remarkable or unusual, lung cancer from active smoking we talked about, and the magnitude of coronary heart disease is similar comparing active and passive smoking, so there's 2 examples.

PANEL MEMBER BLANC: Yeah. It might be more conservative to simply say are not without precedent. I don't know. My, you know, definition of those other

things is of what's common and what's remarkable or what's --

OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay.

PANEL MEMBER BLANC: -- just diplomatic.

CHAIRPERSON FROINES: That's good.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay. Dr. Thun thinks that we didn't emphasize the cohort studies enough. So one of his comments was that Reynolds, Egan and Wartenberg cohort studies were dismissed as invalid because of poor exposure assessment.

And he also notes that if it's true that duration of exposure is important, which is seen in some studies, then these cohort studies that evaluated duration of exposure in a adulthood, which is Egan and Wartenberg, should have been able to detect an effect.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: Several studies, mostly case controlled, but some cohorts, found evidence of dose response with either duration or intensity or both. And that includes Hanaoaka, which is the recently reported Japanese cohort, and Jee, another cohort study.

And we responded, we did not at all dismiss the

cohort studies, but we did consider that most of them have incomplete exposure assessment, and that's a problem.

Seven cohort studies were included in the overall meta-analysis, and 4 in the younger, primarily premenopausal meta-analysis, and they were weighted heavily, generally because they had a large sample size. So we did not dismiss those cohorts, and we think we discussed them satisfactorily.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: And finally, he notes that it can be argued that the subgroup of studies on premenopausal breast cancer deserves to be singled out, since most of these find relative risk estimates above 1. However, the data on premenopausal breast cancer derived largely from case control studies, and this downplays the findings from cohort studies, so it's similar to the previous comment.

And he has concerns about potential for bias and confounding in case controlled studies relative to cohorts.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: So our response again is that the cohort studies were discussed and included in the meta-analyses, and not downplayed or dismissed.

And if observed effects were the result of recall bias or confounding, one would expect similar breast cancer risk estimates in the pre- and the postmenopausal strata. Six of the studies that show elevated risk estimates for younger premenopausal women report null findings within the same study for the older postmenopausal women.

So we think it's unlikely that bias and confounding, because of the case control design, would produce an association in the younger women, but not the older women within the same study.

--o0o--

OEHHA SUPERVISING TOXICOLOGIST MARTY: We also note the similarity of summary pooled risk estimates for cohort studies with incomplete exposure assessment, and for the subset of case control studies that had incomplete exposure assessment. And this argues against recall bias or confounding as the explanation for the elevated risks in the case control studies that had more complete exposures assessment.

And finally, some cohort studies did find elevated risks in younger premenopausal women, particularly Hanaoaka, which was statistically significant and relatively strong.

And that's all we have.

CHAIRPERSON FROINES: Any comments, questions?

PANEL MEMBER BYUS: I just think this is a tremendous discussion to read it here. The very, very critical thinking on both sides, for a very complex issue. And I think you did a great job answering all of the concerns. So I'm very pleased with it. It was great, John, that you got him to comment here. I think this really adds a level of critique to the document that is very valuable.

PANEL MEMBER FRIEDMAN: Can I just ask for a point of information. When you talk about the similarities between active and passive smoking with regard to risk of coronary disease, what is the risk for passive smoking that you're referring to? I thought there was a difference.

OEHHA SUPERVISING TOXICOLOGIST MARTY: You know, I meant to look that up.

PANEL MEMBER GLANTZ: Well, there is a difference, but it's just not huge. You know, the relative risks for passive smoking are about 1.3. And the relative risks for active smoking are 2 to 4. But the dose --

PANEL MEMBER FRIEDMAN: That's pretty different to me.

PANEL MEMBER GLANTZ: Right, but the point is the

dose that the passive smokers get is like 1 percent. So there's no proportionality. So they're not similar magnitude. I mean the risks are different, but they're not different in proportion to the dose, which is, I think, what they're trying to say.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Maybe I overstated that.

PANEL MEMBER HAMMOND: Stan, I have to disagree.

PANEL MEMBER GLANTZ: With what?

PANEL MEMBER HAMMOND: About the does difference between active and passive smoking. I'm saying this all the time, right, that it depends on which chemical you're looking at. For nicotine it's a 1 percent, for biphenyl it's 15 percent. However, I think more to the point is we're used to looking at the lung cancer relative risks, which are what relative risk at 10 to 20 for active smoking and 1.4 for passive smoking.

And so there's that sense that you expect to see this huge difference, but we turn around and we know that cardiovascular disease at that point 2.4 and 1.3 look very similar, compared to the lung cancer.

PANEL MEMBER FRIEDMAN: Sure.

CHAIRPERSON FROINES: Joe.

PANEL MEMBER LANDOLPH: I think you did a fantastic job, Melanie, and the staff scientists. I

looked at this chapter over many, many meetings. And you condensed it as I asked you to and others have, and even further still beyond that, and added all the comments. I'm not too worried. I was initially worried about the magnitude of the effects with the passive smoking and the active smoking, because like Thun, I thought one should be a small marker on the curve than the other. But that's not necessarily true. They may be very different animals.

I think you've addressed Thun's comments -- Dr. Thun's comments -- very well. You're not obligated to accept his point of view, but you did what you had to do, which is listen with an open mind to the comments and accept those what you thought was correct.

So I think this chapter is getting pretty complete. I think we're going to the point of diminishing returns if a lot more work is invested in this. I think it's pretty much close to being ready to go now, from my point of view.

And I particularly like Figure 7.4.4 in the Table 7.41G and the Dose Response Table 7.4.1H, which shows a dose response. I think that makes it crystal clear as to the difference between the active and the passive smoking. And passive smoking in premenopausal and postmenopausal women, I think, that makes that issue very clear for me.

CHAIRPERSON FROINES: Kathy.

PANEL MEMBER HAMMOND: Just I think you've done a great job. Thank you. I think this is major contribution to the literature.

PANEL MEMBER GLANTZ: I agree.

PANEL MEMBER PLOPPER: I agree. I think they did a great job.

PANEL MEMBER FRIEDMAN: I'm pleased. I'm just looking forward to that one additional thing, which we can take without having to hold up the vote.

CHAIRPERSON FROINES: Dr. Blanc.

PANEL MEMBER BLANC: Well, can I ask you to do one thing, if it's possible, on the lengthy Table 7.0B, which starts on page 7-3 and goes on to the next 5 pages.

PANEL MEMBER GLANTZ: You'd like it condensed to one page.

(Laughter.)

PANEL MEMBER BLANC: Yeah, put that in font 6.

The very last row, 10, Miscellaneous. That is very strangely placed. It is, after all, organic chemicals. So you've got all the organics. You've got all the metals, and then you've got this as if it was, you know, some noncarbon based non, you know, metal. Could you just put that somewhere else, please.

(Laughter.)

OEHHA SUPERVISING TOXICOLOGIST MARTY: Sure.

CHAIRPERSON FROINES: Which one are you talking about?

OEHHA SUPERVISING TOXICOLOGIST MARTY: The very last entry to table 7.0B is under miscellaneous and then we put methyl acrylate.

CHAIRPERSON FROINES: Why do you have it in miscellaneous?

OEHHA SUPERVISING TOXICOLOGIST MARTY: I can't answer that.

CHAIRPERSON FROINES: It's an organic.

PANEL MEMBER BLANC: If it doesn't fit in the organic chemicals, then you have classes, you should carefully just put other organics or something which just kind of identify it.

PANEL MEMBER BYUS: At least you put on there miscellaneous.

PANEL MEMBER GLANTZ: I just had -- did you have anything else, Paul?

PANEL MEMBER BLANC: That wasn't trivial enough.

(Laughter.)

PANEL MEMBER GLANTZ: I just have a couple of little points, beyond what I already sent them.

In Table 7, these are just points I was confused by. On table 7.0A on the very first page, if you look at the breast cancer with your additional studies thing, it

kind of looks like the 7 meta-analysis is only applying to younger premenopausal. And I don't think that's what you mean.

OEHHA SUPERVISING TOXICOLOGIST MARTY: No.

PANEL MEMBER GLANTZ: So what I would suggest you do here is put a blank line between the line that says breast and the line that says younger, so it's clear that you know that -- and then the one other thing was if you look on page -- oh, wait, I'm sorry. Let me see what this says on it.

And then if you go to page 141, and you look at the statement -- and this is sort of getting, I guess, at what Gary was talking about earlier. The very end you say, "In contrast to the findings in younger women in studies which reported statistics for women diagnosed with breast cancer after menopause. A null association...is apparent", which is what Gary was saying.

But then if you go to page 153, at the bottom that's where you have the, "We conclude further research is necessary, and the evidence to date is inconclusive."

So I think you need to just have those -- I think the earlier discussion that Gary led ended up with a reasonable consensus on how to deal with this. But these 2 statements should be made consistent with each other. Because in one place you're making a null statement, and

in the other place you're saying more research is needed.

PANEL MEMBER HAMMOND: You're saying the consistency statement should be consistent with the summary statement.

PANEL MEMBER GLANTZ: Yeah.

PANEL MEMBER FRIEDMAN: If I ever saw data that supported a null, a no association, that's what you showed up there, that doesn't look inconclusive to me. That looks null.

PANEL MEMBER GLANTZ: Well, I think that in terms -- the point Paul made about the language that's being used throughout the report, I think it's okay for the formal conclusion to be inconclusive, but I also think it's reasonable in the report to say what you said on page 141 about it being null.

PANEL MEMBER FRIEDMAN: What does -- I'm sorry to drag this on, but what -- you know, aren't the data about premenopausal inconclusive too because they bounce around a little bit? I mean, I don't understand what inconclusive means.

PANEL MEMBER GLANTZ: Well --

PANEL MEMBER FRIEDMAN: You know, it sort of sounds like, well, I think there's something there, but you know, we can't say anything yet. But I still am suspicious. I mean I just don't get it.

PANEL MEMBER BLANC: Well, that would be their category, which is suggestive. They have the 3 tiers.

PANEL MEMBER FRIEDMAN: Have they defined inconclusive very clearly?

PANEL MEMBER BLANC: Yeah, at the beginning.

PANEL MEMBER GLANTZ: In Chapter 1. I just think you need to make those consistent with each other and consistent with the discussion that we had earlier with Gary.

CHAIRPERSON FROINES: So I think it's --

PANEL MEMBER GLANTZ: I mean I think -- just to be picky, I think to draw a null conclusion -- to draw a negative conclusion, you need to do a power calculation, you know, and all kinds of other stuff that we don't want to bother with.

CHAIRPERSON FROINES: But I think --

PANEL MEMBER GLANTZ: So I think what -- if you take what you wrote on page 141 and combine it with the results that came out of the earlier discussion and make sure that page 153 is consistent with that, everybody will be happy.

CHAIRPERSON FROINES: And state that what that will mean.

PANEL MEMBER GLANTZ: I think that it will -- I mean, if you go back to the changes people agreed to

during the discussion Gary led, I think that you can make page 141 and 153 match with the consensus that came out of Gary's discussion.

CHAIRPERSON FROINES: Which will mean that there will be some emphasis on null.

PANEL MEMBER GLANTZ: Well, I think that in the table the formal conclusion using the categories of Chapter 1 will be inconclusive. But in the text, I think this statement here that looks -- says it looks like it's null is an appropriate thing to include, which is a further kind of explanation what it means in this case.

CHAIRPERSON FROINES: Gary, is that --

PANEL MEMBER FRIEDMAN: (Nods head.)

PANEL MEMBER BLANC: Let me give you an example of what wording in that last sentence on 153, Melanie, would be consistent with a null statement. Here's where I think people are getting thrown off. Instead of the current wording, which is, "Nonetheless, we conclude that further research is necessary to characterize ETS associated breast cancer risks in postmenopausal women and the evidence to date is considered inconclusive."

If the beginning of the sentence said something like, "Therefore we conclude that further research indicating a positive association would be necessary in order to move beyond an inconclusive finding" or something

like that. Because, you know, basically it's the flip side of what you're saying.

This sentence suggests that there's more there than there is there. So what you're really saying is not we're -- this is more of a statement than one would expect after a suggestive association. I think that's what's throwing people off.

When you said it's inconclusive, basically you're saying less -- further research starts going in the other direction. It would be difficult to move beyond this being null, inconclusive. Just a few words to change it. Do you see why people are null? Do you see why people are getting a little confused by the tone of that sentence?

OEHHA SUPERVISING TOXICOLOGIST MARTY: I think so.

PANEL MEMBER BLANC: So I think you could tweak it with just a few words.

CHAIRPERSON FROINES: But let's work out the -- words right now, because I don't want -- this is a fundamental issue and that we should not have this -- after we voted, we shouldn't have this come back to us. Because if somebody doesn't like it, it then says we do need another meeting to resolve the issue. So I think we should come up with the language right now, so that we're all happy with how it's phrased.

PANEL MEMBER HAMMOND: May I take 3 steps backwards in that case since we're going to do this.

I think that I'm just going to naive question. And that would be given your review of the literature, do you believe we have a good understanding of the relationship between ETS and postmenopausal breast cancer?

OEHHA SUPERVISING TOXICOLOGIST MARTY: I would say no.

PANEL MEMBER HAMMOND: So if that's true, then I'm just taking this global view, then that says to me more research is needed. Is that a. --

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes. I don't know if you want an explanation or why I'm saying no.

PANEL MEMBER HAMMOND: What?

OEHHA SUPERVISING TOXICOLOGIST MARTY: I don't know if you want an explanation on what I said.

PANEL MEMBER HAMMOND: So then I just want to do it in steps. So my thought would be that -- I think this is in the nature of what we did last meeting, when we started moving and separating them, and then look at how strong this evidence was.

What we perhaps haven't done as carefully is looked at the limitations of the evidence in the post and articulate them. I think you have done it in your head

and you understand it. But maybe it needs to be articulated. And I don't want to draw this out, but I'm just thinking that if --

CHAIRPERSON FROINES: Be careful because you're heading in that direction. You're heading --

PANEL MEMBER HAMMOND: I just realized that.

CHAIRPERSON FROINES: You're heading in a direction that's going to require another meeting.

PANEL MEMBER HAMMOND: Let me just ask if the limitations that you see in the postmenopausal breast cancer are such that you could actually kind of list them quickly or is that something that would take some going over the literature to do?

OEHHA SUPERVISING TOXICOLOGIST MARTY: I think it would take a little more than me to try to do it off the top of my head or off the cuff.

PANEL MEMBER HAMMOND: All right. It has struck me that the weight of the whole approach has been to look at the sound science is and not to articulate that. But I actually feel -- to me it's important just to have that sense of the -- because I know you know this literature inside out and your paper is so much better -- that the -- if the feeling is the inconclusive results are due, not to the fact that they're truly null and includes those that are null, but rather the limitations of the studies. I

think we could just say that. The studies have limitations, many of which are reflected in the general limitations we talked about previously, and the epidemiology, such as exposure misclassification and things like that.

If we were to put that in. -- because what I would like to see coming out of this in terms of public health is if the distinction made right now between we have a lot of -- and that study is done and an analysis of that tells us there's nothing more to look at postmenopausal or the research world has to continue to look at that. I think that's what needs to be done.

PANEL MEMBER GLANTZ: I have some suggested words. Okay, what I would do on page 141 --

CHAIRPERSON FROINES: I just want to say one thing about what Kathy said and then you can go ahead.

I think that the evidence that we have before us on the postmenopausal women, recognizing the difficulties within the studies, are null. And so that if we are going to start doing an internal evaluation of the complexities of the study, that opens Pandora's Box.

PANEL MEMBER GLANTZ: I don't think we have to do that.

CHAIRPERSON FROINES: And I think that we don't want to do that frankly, but I think we want to respect

the fact that based on the evidence before us, the studies do appear to be null.

PANEL MEMBER GLANTZ: Well, let me make the following suggestion. And, in fact, they do what you just said if you read the whole paragraph on page 153, but what I would suggest is on page 141, to change the thing at the end to say, "In contrast to the findings in younger women, in studies which reported statistics for women diagnosed with breast cancer after menopause, cluster around a null association."

So the better -- you know, you could word it more artfully. But to simply say, there where you're describing the Epi studies just to say they cluster around null.

And then on page 153, you have to -- I mean, the paragraph we're talking about says sort of what you're saying, John. It says, "The evidence of an association between ETS exposure and elevated breast cancer is more persuasive for those diagnosed" -- in fact, I would take the word "more" out. I would say "...are persuasive for those diagnosed at younger ages..." "There were 9 studies from which we could extract breast cancer risks for postmenopausal women. Except for 2 statistically significant elevated risk estimates, these studies showed either slightly elevated, but non-significant or null

results for overall postmenopausal strata. There are, however, elevated risks estimates in some studies for postmenopausal women either overall or in specific strata. In addition, it should be noted that there are many studies that show statistically significant elevated risks for breast cancer in postmenopausal active smokers."

So that's paragraph. Then I would change the last sentence to read something like, "Because the results cluster around the null, however, at this time, we conclude that the evidence associating ETS with breast cancer in postmenopausal women is inconclusive."

CHAIRPERSON FROINES: I would argue, Stan, I think that there's simple way to do this. And I think that the sentence that's underlined on page 153 is fine. I would simply move the last sentence on 141 to be the last sentence on 153, and I think that deals with the whole issue.

PANEL MEMBER GLANTZ: Well, you could do that too.

PANEL MEMBER BYUS: I agree.

PANEL MEMBER GLANTZ: That's a good way to do it. It just repeats --

CHAIRPERSON FROINES: So it's said twice, that's fine.

PANEL MEMBER GLANTZ: Yeah, that's fine. I'm

happy with that too.

PANEL MEMBER HAMMOND: So you'd have both sentences, John?

CHAIRPERSON FROINES: Yeah. One says inconclusive, which means Paul's question about Chapter 1. And the second draws the somewhat harder conclusion that the studies are null. So it's the whole -- we are internally consistent with that.

And I think that makes it very simple, because it's just moving literally 1 sentence from one --

PANEL MEMBER BLANC: Or repeating it.

CHAIRPERSON FROINES: Repeating it.

PANEL MEMBER GLANTZ: I would repeat it. I wouldn't move it.

PANEL MEMBER FRIEDMAN: Is that consistent in the Executive Summary too?

CHAIRPERSON FROINES: Well, they'll have to make sure that that is consistent.

PANEL MEMBER BLANC: That's a simple solution.

PANEL MEMBER HAMMOND: In the end, will there be 2 Executive Summaries as there are now or just one? I mean, since Part A actually becomes Chapter 2 in this document, is there just one Executive Summary then for the entire document? Because I was unclear which Executive Summary we're supposed to have.

OEHHA SUPERVISING TOXICOLOGIST MARTY: We have an Executive Summary for Part B, and then there's an overall Executive Summary for A and B.

PANEL MEMBER HAMMOND: But what will the final document have? They won't be those 2 Executive Summaries I hope?

OEHHA SUPERVISING TOXICOLOGIST MARTY: There will be and they are -- there's an ARB --

PANEL MEMBER GLANTZ: That's always the way it's been. There's an Executive Summary for Part A. There's an Execute Summary for Part B. And there's an overall Executive Summary.

PANEL MEMBER HAMMOND: Forgive me.

CHAIRPERSON FROINES: Joe.

PANEL MEMBER LANDOLPH: Melanie, underneath that postmenopausal issue, are you guys worried about the fact that there might be lurking a small fact that just it's too difficult to measure with precision?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes. And the reason we're worried about that, a couple of the studies showed they didn't separate out by menopausal strata. They showed that women exposed to ETS from spousal smoking greater than 27 years, greater than 30 years, a couple of different studies, had elevated risk estimates. Unless those women got married when they were

10, they're very likely postmenopausal.

PANEL MEMBER LANDOLPH: And the word "inconclusive" in there leaves it open and you can go ahead.

CHAIRPERSON FROINES: And a couple positive studies does not make a positive finding.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Exactly.

PANEL MEMBER FRIEDMAN: Because you don't mention there's a couple negative studies too.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Right.

CHAIRPERSON FROINES: So I think that, unless I'm mistaken, my copying that sentence and putting it there will resolve the issue. And unless there's some opposition, I think we should move ahead.

PANEL MEMBER FRIEDMAN: Okay.

CHAIRPERSON FROINES: So where are we at in terms of the rest of the document?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay, there's --

CHAIRPERSON FROINES: It's 12:16 --

OEHHA SUPERVISING TOXICOLOGIST MARTY: -- Chapter 4 and Chapter 5 we have not presented the overview to the Panel. I note we haven't got -- we have gotten no public comment on Chapter 5 and we have gotten no comments from the Panel on chapter 5. And we got a public commenter on

Chapter 4, mostly related to the issue of whether or not ETS is associated with SIDS.

Chapter 4 was perinatal manifestations. It focused primarily on SIDS. We have a conclusive finding in the '97 report on SIDS. We have a conclusive strengthened finding in this report on SIDS. And we have a suggestive finding of possible cognitive and neurobehavioral effects in this document, based on 2 studies.

CHAIRPERSON FROINES: And do you want to present slides to that effect or do you --

OEHHA SUPERVISING TOXICOLOGIST MARTY: I could do that very quickly.

CHAIRPERSON FROINES: What's the choice of the Panel? I mean we can except it without the presentation or we can have a presentation.

I think for completeness sake, I think it would be -- and the record, I think it would useful to have a presentation. Is that all right with everybody?

PANEL MEMBER BLANC: And then after we conclude a discussion for this, what is the overall schedule?

CHAIRPERSON FROINES: My sense is after we have this discussion, we'll break and eat, then we'll make any final conclusions or discussion we want to have. And if we then vote on this document with the changes that we'll

hear in the future, we'll then spend some time talking about the Findings.

Are you comfortable with that?

PANEL MEMBER BLANC: (Nods head.)

CHAIRPERSON FROINES: Melanie, you're on.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: Chapter 4 dealt with Developmental Toxicity to be a particular postnatal manifestations.

This summary table indicates that there are conclusive Findings for SIDS -- an association between ETS and SIDS was strengthened with the update. There are still suggestive findings of cognition and behavior. And everything else was either inconclusive or some indication of potential CNS changes based on the animal model that was not human data.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: There are a number of studies that looked at SIDS. This slide just shows some evidence of dose response by cigarettes per day, smoked by the mother or by the father or by others in a number of studies. And indicates that smoking plus bed sharing results in a very large risk, at least in Carpenter 2004.

So the upshot is there is evidence of dose

response, and that is postnatal ETS exposure on top of the prenatal ETS exposure, so there's a distinct effect.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: Anderson and Cook conducted a meta-analysis, and they, in 1997, published this and find an OR for SIDS of 1.94, noting that after controlling for prenatal smoke exposure you still have elevated SIDS risk and you also have elevated SIDS risks when only the father smoked, which indicates an effect of postnatal ETS.

It also can be noted that nicotine or cotinine was elevated in the pericardial fluid of SIDS victims relative to babies dying of other causes. That was noted in 3 studies.

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OEHHA SUPERVISING TOXICOLOGIST MARTY: And there were 3 studies that looked -- new studies that looked at affects on cognition of behavior. One looked at significant -- found significant inverse correlation between scores on reading, math, and block design and serum cotinine levels. That was published this year.

Another found an elevated odds ratio for conduct problems in children of smoking mothers. And that the risk went up a little bit with persistent maternal smoking. In other words, they looked at 5 years olds and

10 years olds, and when the mother quit smoking, the risk seemed to be less than when she continued to smoke throughout the childhood.

And it should be noted that the relative risk for externalizing behaviors, which is about 1.87, in Williams et al., was noted for children with no prenatal maternal smoking, but high postnatal maternal cigarettes per day. So it indicates there's a postnatal effect, not just a prenatal effect.

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PANEL MEMBER BLANC: Well, what do you mean not just prenatal. It doesn't actually look at prenatal effect.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Well, in Williams et al., they actually had stratified their analyses. And when they looked -- when they looked at women who had not smoked while they were pregnant, but started back up after they gave birth, they saw a high relative risk or relatively high relative risk.

PANEL MEMBER BLANC: Well, I'm going to sound like Gary now, but did they look at mothers who only smoked during pregnancy and then quit after birth?

OEHHA SUPERVISING TOXICOLOGIST MARTY: There was actually one study that looked at that and they found --

PANEL MEMBER BLANC: Not this study then?

OEHHA SUPERVISING TOXICOLOGIST MARTY: No, not this study. I have more complex slides if you want to get into that.

PANEL MEMBER BLANC: No, but it is a problem as opposed to -- well, actually it is an issue, when -- you're calling this a developmental toxicity health effect.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Right.

PANEL MEMBER BLANC: So you're including perinatal development?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yeah, right. We would not just -- development toxicity could happen in at adolescence. It just means that during any stage of development you could see a toxic effect.

PANEL MEMBER BLANC: So why isn't your whole childhood asthma thing a developmental toxicity?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Well, you could consider that development toxicity.

PANEL MEMBER BLANC: Is this a standard definition of developmental toxicology?

OEHHA SUPERVISING TOXICOLOGIST MARTY: There are -- yes, it actually --

PANEL MEMBER BLANC: I know we have it, but refresh my memory.

PANEL MEMBER BYUS: I had this exact

discussion --

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes, it actually is. And Dr. Plopper could probably chime in her, but you can look at -- you look at prenatal development and you look at the postnatal development separately, and lots of people do. But it's really a continuum all the way until maturity.

PANEL MEMBER BYUS: If not at the way through geriatrics, if you care to continue that way, which I think we should be focusing on considerably.

(Laughter.)

OEHHA SUPERVISING TOXICOLOGIST MARTY: Considering how old we're getting.

PANEL MEMBER BYUS: Yes.

(Laughter.)

PANEL MEMBER BLANC: And because this -- I mean this is harder to track because it doesn't have -- because we didn't discuss it last time, so there aren't underlying things that are revisions from the previous versions, this is essentially the version that we received did not discuss directly in the last meeting, which is probably I'm going back to what we've already discussed.

But would it help to either have one sentence that said, "We continue to use the same definition of developmental that we used in the '97 document for

consistency, to wit, this subsumes both prenatal development and perinatal development and childhood development."

OEHHA SUPERVISING TOXICOLOGIST MARTY: We actually have the first page of Chapter 4 discusses essentially that.

OEHHA DEPUTY DIRECTOR ALEXEEFF: I have a comment. George Alexeeff.

Paul, we generally divide developmental toxicity in kind of 2 components, since we have different programs, but there is -- which is why we had these chapters written the way they were. There's one on prenatal exposure and then any effects that occur from that prenatal exposure whenever they're expressed are considered developmental toxicity, because it's thought that the insult occurred, you know, to the fetus.

Then the U.S. EPA has a definition that basically covers the second part, which is that developmental toxicity is any toxicity that occurs up through adolescence, and that's what this is actually covering here, up through adolescence.

PANEL MEMBER BLANC: Well, where is the previous chapter?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Chapter 3 covered birth weight, low birth weight pre-term delivery,

inter-uterine growth, retardation.

PANEL MEMBER BLANC: So it's actually postnatal exposures not manifestations.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes.

OEHHA DEPUTY DIRECTOR ALEXEEFF: Chapter 3 is prenatal exposure.

PANEL MEMBER BLANC: Right, but Chapter 4 which has got the subheading 2 postnatal manifestations. These are postnatal exposures not manifestations.

OEHHA DEPUTY DIRECTOR ALEXEEFF: Yes.

PANEL MEMBER BLANC: Yes.

OEHHA SUPERVISING TOXICOLOGIST MARTY: I think part of the issue was that for SIDS, there is definitely an effect of prenatal exposure and there's a separate effect of postnatal exposure. People have been separating it out.

PANEL MEMBER HAMMOND: So does Chapter 4 actually include both prenatal exposure with postnatal manifestations and postnatal exposure and postnatal manifestations?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes, it does. That's what I was getting at. Because, you know, when a mother is smoking during pregnancy and then she continues to smoke afterwards, it gets difficult to separate that out, unless you have specific cases where it

was --

PANEL MEMBER HAMMOND: The epidemiology is the way most things work. It's much more common to have people -- women quit smoking during pregnancy and then resume smoking afterwards, than to smoke through pregnancy and quit after the birth. That's a rare event. Rare enough that it's hard to believe you could do an epidemiology study on.

OEHHA DEPUTY DIRECTOR ALEXEEFF: George Alexeeff again. Because of our other programs, particularly referring to Proposition 65 programs, which particularly we've defined or counsel's defined it as exposures prior to birth. Okay, so we had to separate those out in this document.

So in those cases where the exposure covers both areas, both prenatal and postnatal, we've pretty much put those in the postnatal chapter, because you can't separate them, and it's not clear, although the exposure occurred -- well, the exposure occurred prenatally to the exposure and postnatally, we're not sure if the effect is due to either one or the other or both.

PANEL MEMBER HAMMOND: Of course. So maybe what we need to do is for clarification is call this Roman Numeral II, would be postnatal manifestation and prenatal and postnatal exposures; is that correct?

PANEL MEMBER BLANC: Yes, that sounds like what they're doing.

OEHHA DEPUTY DIRECTOR ALEXEEFF: Right. We've teased it out when -- the authors have teased it out, but we've been teasing it out.

PANEL MEMBER HAMMOND: Right. The chapter can tease it. But as a heading we can say it's a prenatal and postnatal exposures. So in the chapter you tease it out, you could, right. But the title is not clear, is postnatal manifestations, but it's not --

OEHHA SUPERVISING TOXICOLOGIST MARTY: The postnatal manifestations of ETS exposure, which could be pre or post. So we could just put postnatal manifestations of ETS exposure. And then it's discussed within all of the studies for that section.

PANEL MEMBER BLANC: I actually prefer Kathy's suggestive wording, which is postnatal exposures of pre or postnatal -- postnatal manifestations of pre or postnatal exposures. Because I think you're assuming too much of the casual reader in terms of the nuance of the regulatory and other nuances of what developmental is in the top heading. This really makes it clear that you're -- that the exposure need not include prenatal for you to think that it's a developmental issue.

OEHHA DEPUTY DIRECTOR ALEXEEFF: Just another

point as for clarification, because there was a comment made with regard to the mother stopping smoking during pregnancy. Active smoking is not considered in the prenatal exposure. It's all -- we're all talking ETS exposure, not active smoking.

CHAIRPERSON FROINES: I think, George, that your counsel is wrong, and you should take a case and pursue it. If you could sue, maybe you can get a decision, but you're letting lawyers define science. And that science that they're defining isn't correct.

OEHHA DEPUTY DIRECTOR ALEXEEFF: No comment.

CHAIRPERSON FROINES: I think it's a serious issue, because the issue of pre and postnatal exposures is a major area for research, as far as I'm concerned. And to the degree that we start to simplify the science for what is obviously a legal decision is really unfortunate.

OEHHA DEPUTY DIRECTOR ALEXEEFF: Well, it's not -- yeah, what I stated is basically the interpretation of the statute that was a proposition that was adopted by the citizens.

CHAIRPERSON FROINES: You shouldn't comment. You should stay with your no comment. Let me comment, because I can say it, and you don't have to get yourself in trouble.

Go ahead, Melanie.

--o0o--

OEHHA SUPERVISING TOXICOLOGIST MARTY: We did get a few public comments on this chapter primarily on SIDS. One is that prenatal maternal smoking is a major confounder.

And our responses include that the effects are seen after confounder control. The effects are seen with paternal or other only smoking in the household. And also after controlling for maternal smoking. That pericardial nicotine and cotinine is associated significantly with SIDS' death. That there is dose dependent increases in SIDS risk with increased ETS exposure in a number of studies. And that higher risks were noted in at least 2 studies when the baby is in the same room as the smoker.

CHAIRPERSON FROINES: Melanie, I have just one question and it reflects the fact that I haven't read carefully what's in the Executive Summary. I think this new SIDS evidence, especially that associated with dose response, is an important new finding. And hopefully, you've got that in the Executive Summary emphasizing it, to some degree, as well as having it in the main document.

This is an nice table or figure, and I think it deserves some -- to make sure -- this will come up when he get to our Findings, which I think are deficient. There is new evidence that we need to make sure that where it's

particularly relevant it needs to have some emphasis in the Executive Summary, as well as the full document, so it doesn't get lost.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay.

PANEL MEMBER HAMMOND: Can this figure be put in the chapter.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes, isn't that in the chapter?

PANEL MEMBER HAMMOND: I was trying to find it and I didn't see it.

PANEL MEMBER BLANC: Can I bring up a point that jumps off from John's comment. And it has to do with the methodology that you used and the methodology that you used in 1997. The observation that none of the findings that you found to be conclusive in the 1997 report have needed to be downgraded to suggestive on the accumulation of another decade of data. And that, in fact, in many cases the further evidence for those things which were already conclusive are even more convincing, if anything.

That observation I think tends to strengthen the entire process and document, and therefore, is relevant. There is really no place to say it except in the Executive Summary. And it's certainly relevant to the SIDS' story. And I would say another example would be childhood onset of otitis media and asthma where before there were 30

studies and now there are 60 or whatever it is.

So that might be worth saying succinctly in the Executive Summary. It's inherent, but it's kind of -- unless you look at it that way, it's not.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay. We can look at it.

PANEL MEMBER BLANC: Because if you'd been doing something wrong methodologically the last time around, this time it would have shown up, right, if you were too cavalier, and you'd have to reverse yourself on something.

CHAIRPERSON FROINES: That's very important, I think, to have as a major conclusory restatement in the Executive Summary.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay.

CHAIRPERSON FROINES: To have given examples in the Executive Summary that illustrate it.

PANEL MEMBER GLANTZ: Yeah, we should probably include in the Findings too.

CHAIRPERSON FROINES: Yeah.

PANEL MEMBER BLANC: Yeah. Good point.

CHAIRPERSON FROINES: Yeah. Let's not get to the Findings.

--o0o--

OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay. Another comment came in that Anderson and Cook the

meta-analysis which found a significant effect can't control for confounding, and that there's a high correlation of maternal pre and postnatal smoking. And Anderson and Cook actually did take a subset analysis of studies where prenatal smoking was absent or at least controlled for. And they still get elevated risk estimates of this. Just another example.

--o0o--

OEHHA SUPERVISING TOXICOLOGIST MARTY: And, again, another comment that other confounding factors may actually account for SIDS risks in ETS exposed babies. But we know that the consistency of the association across several different studies after adjustment for multiple confounders reduces greatly the plausibility that the SIDS ETS association is wholly explainable by confounding.

--o0o--

OEHHA SUPERVISING TOXICOLOGIST MARTY: And that's it.

PANEL MEMBER BYUS: I have one quick question.

CHAIRPERSON FROINES: Craig.

PANEL MEMBER BYUS: I'm sure they did, but did they control for whether the baby was laid on its back or face down, because this is the big thing now. When I raised my children you were thought to be ignorant if you placed you baby face down. And now they're telling

recently -- not so recently, but, in fact, that is exactly the opposite thing to do. You're supposed to place your baby on the back.

OEHHA SUPERVISING TOXICOLOGIST MARTY: The newer studies did control for that. The older studies of course didn't, because they didn't realize that was an effect.

PANEL MEMBER BLANC: In terms of this chapter and the one that precedes it, there's a statement in the Executive Summary related to the requirements for childhood -- children being a sensitive subpopulation, where you say, you know, we -- I forget where it's at in the executive summary.

Now, I understand why having been so close to this that it's sort of like a no-brainer for you. But, in fact, you don't say why that's the case.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Well, you have some --

PANEL MEMBER BLANC: In the Executive Summary.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Oh, in the Executive Summary we don't say that. We could add that.

PANEL MEMBER BLANC: So clearly since adults don't get SIDS, and SIDS is only a phenomenon found in young children, if you had no other health outcome but that, that would meet the criteria for -- the legislative criterion for children being named a sensitive

subpopulation. Is that a reasonable statement?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yeah, that's right.

PANEL MEMBER BLANC: You can't do it very easily on the basis of cancer risk, because you don't really have, you know, conclusive data for that. The asthma, I supposed you could make the argument, because the relative risks for asthma with ETS are generally higher in children than the estimated relative risks in adults, but you haven't made that argument explicitly in the text either.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Well, we did have some statements regarding that children are the targets for developmental toxicity, not adults. So that's kind of --

PANEL MEMBER BLANC: But all of your developmental things except SIDS are suggestive not conclusive, right?

OEHHA SUPERVISING TOXICOLOGIST MARTY: I think it's --

PANEL MEMBER BLANC: Except SIDS?

DR. MILLER: There's a number of the prenatal ones are also --

PANEL MEMBER BLANC: You should use a couple of examples of that. I mean, this is sort of closing the loop, I think.

CHAIRPERSON FROINES: Melanie, does this mean that when you finish this document that you will then move ahead and move this on to be one of the substances under SB 25?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes.

CHAIRPERSON FROINES: Because you can make -- you'll develop a document for that, and that will be a good place for a very focused discussion of some of these issues.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Well, actually we make that statement in this document. So this is the document that will serve that purpose.

CHAIRPERSON FROINES: Okay. And Paul's point --

PANEL MEMBER GLANTZ: In fact, if you think back into the very distant past, it was the fact that we couldn't include ETS on the SB 25 list that I think Gary pointed out at the meeting, that we needed to reopen. Remember that?

PANEL MEMBER FRIEDMAN: I asked about it, because I didn't understand why we -- why it wasn't considered a toxic air contaminant before.

PANEL MEMBER GLANTZ: Back in the dark ages.

CHAIRPERSON FROINES: This point is that that makes Paul's point more important, in essence.

PANEL MEMBER GLANTZ: Yeah.

--o0o--

OEHHA SUPERVISING TOXICOLOGIST MARTY: We have a couple slides on Chapter 5. I know that there were no comments from the public or the Panel on Chapter 5.

Chapter 5 deals with reproductive effects of ETS exposure. And we find some suggestive evidence of effects on fertility or fecundability and menstrual cycle disorders. Those two ends points were above inconclusive in the '97 document. And I might note that we don't find an effect of either lower age at menopause or male reproductive dysfunction.

--o0o--

OEHHA SUPERVISING TOXICOLOGIST MARTY: There's suggestive evidence on fertility fecundability based on significantly increased risk of delayed conception of greater than 6 months and greater than 12 months in a study by Hull in 2000. And this is ETS exposure either at home or work or both.

There is a suggestive dysmenorrhea based on increase risk at high ETS exposures. That was the highest exposure measured in Chen et al., 2000 and increased duration of dysmenorrhea: Passive smokers 2.6 days; nonsmokers 2 days; and it was statistically significant.

In the same study, they found that passive smoking was associated with shorter duration of bleeding

that was statistically significant relative to nonsmokers or non-ETS exposed.

And then there was not significant change in age at menopause in Cooper et al., but that same investigator found elevated FSH levels in passive smokers. And FSH levels go up shortly before menopause and are involved in driving towards menopause.

--o0o--

OEHHA SUPERVISING TOXICOLOGIST MARTY: In terms of male reproductive effect, there weren't any studies that were new.

PANEL MEMBER BLANC: There weren't any studies that what?

OEHHA SUPERVISING TOXICOLOGIST MARTY: That were new.

PANEL MEMBER BLANC: You have one new additional study listed in your table. Can you go back to the table?

PANEL MEMBER BLANC: You had no studies.

OEHHA SUPERVISING TOXICOLOGIST MARTY: It should not be no new data.

PANEL MEMBER BLANC: So should the one that -- should the one -- the zero be reversed on that table on page 5-1?

ARB ASSOCIATE TOXICOLOGIST WINDER: The one study that's mentioned there in the table refers to a study that

was actually done, with respect to reproductive effects. This is reporting that in males who's mothers were exposed during pregnancy, subsequently developed male reproductive effects. But this was not a study of male infants exposed directly to ETS. So there's the reason for 1 is that there's an apparent effect on male reproduction, but not during child exposure.

PANEL MEMBER BLANC: So there is a new study. So that's correct. And then --

OEHHA SUPERVISING TOXICOLOGIST MARTY: It's maternal smoking, an effect of maternal smoking.

PANEL MEMBER BLANC: But it's still an effect of male reproductive dysfunction is what you're talking about?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes, but we're stuck in this thing --

PANEL MEMBER BLANC: Do you want to put an asterisk and put something below the table and tell us what is you're talking about?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yeah, we can do that.

PANEL MEMBER BLANC: You have here that there were 3 studies on menstrual cycle disorders. You summarized 2 of them here that were positive. Your finding was that it was suggestive. That to me would

indicate that the third study wasn't negative, because that would, consistent with your guidelines, put something as more inconclusive if you only have 3 studies and 2 are negative and one positive. I don't think that that would work by your standards. So what was that third study. I think, a lot hangs on that.

OEHHA SUPERVISING TOXICOLOGIST MARTY: I'm looking.

PANEL MEMBER BLANC: Is it the Chen study from 2000?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Chen is dysmenorrhea.

PANEL MEMBER BLANC: Is that one of the ones that you went back --

OEHHA SUPERVISING TOXICOLOGIST MARTY: That's one that we already had.

PANEL MEMBER BLANC: I know it's not -- you have Hornsby --

OEHHA SUPERVISING TOXICOLOGIST MARTY: And Chen and Hull. Hull is fertility.

PANEL MEMBER BLANC: I'm looking at the -- so if dysmenorrhea and duration of bleeding are both the same study, and then you have Chen, so that's Chen and Hornsby. So then we need one more, right?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Looks to

me like the table is wrong. That should be 2 and not 3, because we only have 2 described.

PANEL MEMBER BLANC: You're not thinking that -- or are you talking about the follicle stimulating hormone study? I wouldn't call that dysmenorrhea, although that could lead to dysmenorrhea.

OEHHA SUPERVISING TOXICOLOGIST MARTY: No. No. I just think the table is wrong.

CHAIRPERSON FROINES: I think unless there's -- this is going to lead into something substantive --

PANEL MEMBER BLANC: Well, it does have to do with suggestive that's why I'm harping on it a little bit.

CHAIRPERSON FROINES: I understand that.

OEHHA SUPERVISING TOXICOLOGIST MARTY: It should say 2 not 3. That's the whole problem. This is wrong There's only 2 described in the text, Hornsby et al., 1998, and Chen et al., 2000.

PANEL MEMBER BLANC: I would respectfully suggest then that it might be more conservative to call that inconclusive, if you've got 2 studies and that's all there is in the literature.

CHAIRPERSON FROINES: Well, how are you treating the Cooper study? Is that the one that made up 3?

PANEL MEMBER BLANC: She says no.

OEHHA SUPERVISING TOXICOLOGIST MARTY: That's a

separate category.

PANEL MEMBER HAMMOND: That's a separate category.

CHAIRPERSON FROINES: No, I understand it's a separate category, but it seems like --

PANEL MEMBER BLANC: It maybe one of the fertility related studies.

CHAIRPERSON FROINES: Yeah.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Cooper looked at age at menopause.

PANEL MEMBER BLANC: I think though that was the --

CHAIRPERSON FROINES: I mean is the --

OEHHA SUPERVISING TOXICOLOGIST MARTY: Cooper et al., '95 which looked --

CHAIRPERSON FROINES: Is the duration of bleeding a menstrual cycle disorder?

PANEL MEMBER BLANC: Yeah.

CHAIRPERSON FROINES: So that would be the third study?

PANEL MEMBER BLANC: No, no, no. That's already up there.

CHAIRPERSON FROINES: No, I don't think --

OEHHA SUPERVISING TOXICOLOGIST MARTY: That's Hornsby '98. That's Hornsby and Chen too.

CHAIRPERSON FROINES: Melanie, I think that if we could agree that if there are 2 studies it becomes inconclusive. If there are 3 studies, it can lead to suggestive, and we should not just -- because it's 12:50 at this point.

PANEL MEMBER HAMMOND: But doesn't it depend on how strong the studies are? If you have 2 --

PANEL MEMBER GLANTZ: Why don't we do this. What don't we do this. Why don't we break and get some lunch and then since -- you know, Melanie doesn't need lunch. She can figure this out while we're having our sandwich. Is that okay, Melanie?

(Laughter.)

OEHHA SUPERVISING TOXICOLOGIST MARTY: Oh, sure.

(Laughter.)

PANEL MEMBER GLANTZ: I'll bring you a sandwich.

CHAIRPERSON FROINES: I'm trying to speed it through, but I think Stan's suggestion is actually more substantive.

PANEL MEMBER BLANC: Food is always more substantive.

(Laughter.)

PANEL MEMBER BYUS: Quick lunch.

CHAIRPERSON FROINES: So how long do you want to take for lunch. Where is the lunch, Peter?

MR. MATHEWS: It's right in here.

PANEL MEMBER FRIEDMAN: Can we do it in a half hour?

CHAIRPERSON FROINES: Sure. Well, it's here. So is everybody okay with a half an hour?

PANEL MEMBER GLANTZ: So we'll reconvene at 20 after?

CHAIRPERSON FROINES: We're reconvene at 20 after.

PANEL MEMBER GLANTZ: Okay.

(Thereupon a lunch break was taken.)

AFTERNOON SESSION

OEHHA SUPERVISING TOXICOLOGIST MARTY: Maybe I should start by describing the 2 studies that suggested this effect? Would that be okay?

PANEL MEMBER BLANC: What's that?

OEHHA SUPERVISING TOXICOLOGIST MARTY: If I start by describing the 2 studies?

PANEL MEMBER BLANC: Yes. We've confirmed that it is just 2?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yeah. It's 2. One is Chen et al., 2000 was actually a pretty well conducted study for what they were looking for, which was dysmenorrhea. They had actually newlywed couples that were participating in this study. So all the women were nulliparous, which is important for studying dysmenorrhea.

And also it should be noted that in China the smoking prevalence with women is really low, so there's not an issue of having a lot of smokers in the study, representing they were nonsmokers. ETS exposure is high because a lot of the men smoke in China.

The women completed daily diaries on menstrual bleeding associated with symptoms, exposure to tobacco smoke, other occupational exposures, and were followed up for up to a year or until pregnancy.

For each menstrual cycle ETS exposure at home was

characterized by the average number of cigarettes smoked per day by regular household members while the subject was present. So they did a fairly reasonable job of trying to look at -- in more detail exposure than in a lot of studies.

Occupational exposure to ETS though was recorded as yes/no, so they did less of a thorough job on occupational exposure. They did find some evidence of dose response which is interesting. They had tertiles of ETS exposure, and they got increased dysmenorrhea going up by the tertiles.

And I guess it should be noted that the ORS for low, medium and high were 1.1, 2.5 and 3.1. And the high tertile was the only one that was statistically significant. So that was Chen et al., and was the primary reason for saying hey, there's a suggestion of an effect here.

There's another study, Hornsby --

PANEL MEMBER HAMMOND: Melanie, the one thing is that their definition of high is pretty low. I mean, the middle range capped at 2.5 cigarettes a day.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Right.

PANEL MEMBER HAMMOND: So that, I think, has less -- seems less significant than there were negative findings in the low and medium, because medium is what we

would normally consider low.

OEHHA SUPERVISING TOXICOLOGIST MARTY: We do note that actually, that their range of exposure is relatively low.

In the Hornsby study there was a larger sample size, but it was older women. So there were -- there might be some issues there in terms of confounders. And a less homogenous group to study in terms of reproductive factors. They did have a larger sample size and they did capture smoking information, and they categorized it as Non, passive, and that's just living or sharing a workplace with a smoker. So they didn't look at intensity or duration actually. And then they had light smokers and moderate to heavy smokers.

So the wringer in this study that bothers me is that these women were part of a study of women whose mothers had taken DES during the pregnancy. So how that influences reproduction is an open question. Nonetheless, they did find an effect of ETS exposure, in terms of duration of dysmenorrhea and amount of daily bleeding, both of which were statistically significant.

PANEL MEMBER HAMMOND: Is this a study of -- did the study of DES daughters include daughters of mothers who did not take DES, because they would have been, in effect, DES.

OEHHA SUPERVISING TOXICOLOGIST MARTY: You know, I don't have the paper here. They do say that DES exposure was equally distributed in their smokers and their nonsmokers within the study.

PANEL MEMBER BLANC: Okay. So I have a suggestion perhaps for a way to address the issue that there were just 2 studies here, that there's some issues -- potential issues of interpretation with one of those 2 studies.

I would suggest that if you look at table 5.0 on page 5-1, you already put in one footnote to that table, which was explaining what the male reproductive study was with about, right?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Right.

PANEL MEMBER BLANC: I'd suggest that at the top row where it says fertility or fecundability, and you have 5 new studies, you cross out 5 and you make that 7. You put a footnote and you say this does include 2 studies which focused on dysmenorrhea, which certainly could be a marker of, you know, risk for and abnormal fertility and fecundability, and you delete the row altogether that has menstrual cycle disorders.

It doesn't change your conclusion. The top one is still suggestive. It just doesn't attempt to deal with menstrual cycle disorders as an entirely separate outcome,

and it acknowledges that, you know, you maybe having a fairly broad definition, but since for -- you know, for these purposes you really look at something which was a suggestive area. Clearly you need more studies, which will then allow you to tease these things out.

PANEL MEMBER BYUS: I don't think dysmenorrhea -- correct me if I'm wrong, but I don't think dysmenorrhea has any effect on fertility or fecundability or whatever the other one --

PANEL MEMBER BLANC: Sure it does. It's a marker of people with dysmenorrhea can be more at risk of --

PANEL MEMBER BYUS: Less.

PANEL MEMBER BLANC: More at risk for reproductive outcomes. I mean, you're throwing a broad net. But for the purposes of this kind of screening, I mean, this is just showing where there's something going on. We don't know what it is. There's a suggestive relationship, because your only other choice, I think, given what you're saying is to keep the 2 things there and downgrade that. I couldn't live with either solution. I don't think that either approach is a terribly substantive change to the document.

CHAIRPERSON FROINES: Do you think, Paul, my guess is that that would require some changes within the chapter because this only reflects the summary, but

there's probably some formatting to these changes, so you'd have to put it in a new category. So it's --

PANEL MEMBER BLANC: You just have to eliminate a category and put it within the other one. I actually don't feel strongly either way, but I'm just giving you my alternative. What I don't think is an alternative is leaving it the way it is.

CHAIRPERSON FROINES: I think suggestive is not --

OEHHA SUPERVISING TOXICOLOGIST MARTY: We could combine them. We would definitely want to a footnote, because fertility and fecundability studies are definitely distinct from a study of dysmenorrhea and that endpoint measure is pretty --

PANEL MEMBER BLANC: And say you have some limitation but say, you know, this early stage of data, it was, you know, made more sensitive to put it there and consider it as a completely separate category.

CHAIRPERSON FROINES: The worst thing that could happen is somebody will be reading it, if anybody reads the whole document, and will say, "Gee, I would have put this into a separate category." And then they'll go on with the rest of their lives.

OEHHA SUPERVISING TOXICOLOGIST MARTY: That's true. Okay, that's fine with us.

CHAIRPERSON FROINES: I don't think it's going to have any real consequence.

PANEL MEMBER HAMMOND: You know, this is an aside on this. But there will probably be a lot more information on this in the next few years as some of these women with health issues studies come out. And so I think that this -- we should just see -- you might even sort of put it in that frame -- relatively little research has been done in this area. It's just really in the beginning stages, and so inconclusive reflects the lack of study. But stay tuned.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yeah, stay tuned.

CHAIRPERSON FROINES: It's raises an interesting question -- Kathy is raising an interesting question. For example, we have never given, and it's been 7 years since we were in this room with diesel, and we've never had a meeting in which we asked OEHHA to update us on any TAC. And that might be fun, as long as it wasn't the reason for a meeting. But if it was part of a meeting, that if you had some striking results that you thought the Panel should be aware of, it's worth it and not out of the question to do that.

PANEL MEMBER BLANC: Just another very small point, which may be generalized to certain other things.

I haven't looked systematically and looked where you have the male reproductive dysfunction, which now is going to have the footnote You had 0 studies last time and now have a single study in this category.

Did you -- you actually didn't have findings in the 1997, which you categorized in any way, either conclusive or anything else. So wouldn't it be not applicable?

OEHHA SUPERVISING TOXICOLOGIST MARTY: It should have been not assessed, which is what we did in other chapters, was not assessed.

PANEL MEMBER BLANC: Okay. That would have been true for menstrual cycle disorders if you kept it in here. But if you do the other thing, it's a moot point.

CHAIRPERSON FROINES: Does that raise a question about whether -- is this study sufficiently interesting that you want to include it? Do you want to have that category?

OEHHA SUPERVISING TOXICOLOGIST MARTY: You mean in terms of organization of the chapter?

PANEL MEMBER BLANC: A single male one, are you talking about?

CHAIRPERSON FROINES: Yes.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Oh, the single male one.

PANEL MEMBER GLANTZ: I think yeah, sure, for completeness.

PANEL MEMBER HAMMOND: It says that you looked at the literature for that. I think that's very important. Even if you can't find anything, it's important.

CHAIRPERSON FROINES: Well, it depends a little bit on the quality of the study.

PANEL MEMBER HAMMOND: No, no. I'm just thinking that this -- it highlights what is -- or is out there.

CHAIRPERSON FROINES: That's fine.

PANEL MEMBER GLANTZ: So are we done now?

CHAIRPERSON FROINES: I'm waiting to hear from Melanie.

OEHHA SUPERVISING TOXICOLOGIST MARTY: We're done now. At least, I'm done now.

(Laughter.)

CHAIRPERSON FROINES: So at this --

PANEL MEMBER BYUS: You think you're done. Well, maybe we can fix that.

(Laughter.)

CHAIRPERSON FROINES: If you think you're done now --

(Laughter.)

OEHHA SUPERVISING TOXICOLOGIST MARTY: Young lady, if you think you're done now, you better rethink

that.

(Laughter.)

CHAIRPERSON FROINES: Okay. So let's go around the room and see if there are questions and comments. We're still dealing with the overall document, its adequacy and how we want to proceed.

So I'll start with Stan who was one of the leads on the document and then we'll go to Roger, who was also a lead, and then go to the rest of the Panel.

So Stan.

PANEL MEMBER GLANTZ: I think I'm happy. I don't have anything else to say. I think it's a really nicely done document. I mean, as I said, I have a few grammatical little things, but I'll just give it to them.

CHAIRPERSON FROINES: Roger.

PANEL MEMBER ATKINSON: No comments, no questions. Fine by me.

CHAIRPERSON FROINES: Joe.

PANEL MEMBER LANDOLPH: I think you put a tremendous amount of effort in and addressed the many comments and criticisms. The document reads well. I'm satisfied.

CHAIRPERSON FROINES: Well, remember, everybody, this -- pardon me for stopping you, but all 3 comments kind of spoke to Melanie and the staff. This discussion

is between ourselves about our views of the document and our decisions of -- in other words, you should say you think the document is adequate and --

PANEL MEMBER GLANTZ: Oh, okay. Well, I misunderstood.

CHAIRPERSON FROINES: This is not to Melanie. This is our discussion.

PANEL MEMBER GLANTZ: I'll make a motion. And I move that the Panel accept the document, subject -- well, wait. We can always discuss the motion. I'd like to move that the Panel accept the document, subject to the changes that have been discussed at this meeting with us delegating to the Chair the authority to do one final review after OEHHA and ARB have agreed to the corrections.

CHAIRPERSON FROINES: Well, I had hoped to sort of go around the room before we go to that.

PANEL MEMBER GLANTZ: Oh, okay. Well, then I won't make it. I don't have anything more to say.

PANEL MEMBER BLANC: Well, Melanie had alluded to, before she went to the developmental things of respiratory chapter, which we did not discuss at the last meeting, but we did discuss at the meeting before that. And there were a number of substantive changes that were requested.

Now, we've never reviewed systematically the

changes that were made. I have no idea whether you have summary slides that do that or you want to walk through it, but I do think that the record should reflect some follow-up discussion on the respiratory, because it's a rather big section. And it did have substantive step up in strength of association for the adult respiratory findings.

I think the pediatric respiratory finding conclusions were unchanged. They were only strengthened; is that correct?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes. The biggest jump was for asthma, exacerbation and induction in adults, which actually included adolescents. The structure of the chapter changed. We took all of the information on kids and put it first, and then separated out the information on adolescents and adults. So that was one which resulted in a lot of cutting and pasting, but that was one change that was made.

Some other -- a few other studies popped up that we put those in. There were no changes made in any of the findings for this update.

I think Paul had brought up the issue that we were inconsistent in talking about adolescents. In one place they were kids in another place there were adults, and part of that was the way the studies were done. Some

of them looked at kids and adolescents and some of them looked at adolescents and adults. So we tried to be careful about how we talked about that. And the section on asthma in adults is now asthma in adolescents and adults.

Mark is reminding me there is one study that we meant to add, and I thought was in here, and is not. So that's another study by Lam on adult respiratory symptoms and in police officers in Hong Kong. So that's something that we still have to do.

PANEL MEMBER BLANC: That means that's not on the table on page 6-1?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yeah, we're going to add a study.

PANEL MEMBER BLANC: So the column of additional studies for the next to last row respiratory symptoms and other effects will go from 5 to 6?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes.

PANEL MEMBER BLANC: And then because the terminology in the tables of -- correct me if I'm wrong, but the terminology suggestive parentheses strengthened, is not consistently used in the document or is it described as an option in Chapter 1.

What I would suggest is doing that by footnote, where you footnote those 2 and say, "Although these remain

suggestive, they are strengthened."

PANEL MEMBER GLANTZ: I like having it in the table. I mean, I think you're being overly legalistic. And to me -- I mean, I find these first tables very helpful in looking at the document. And I think the fact that you're still saying it's suggestive, but the evidence is stronger is a nice thing to have in the table.

PANEL MEMBER BLANC: But the implication is everywhere else in the document where it says suggestive and doesn't say strengthened means that it's not.

PANEL MEMBER GLANTZ: Then that means that they're saying it's still suggestive.

PANEL MEMBER BLANC: And has gotten no more stronger than the last time.

PANEL MEMBER GLANTZ: Well, that's how I read it.

PANEL MEMBER BLANC: Well, is that your implication everywhere else in the document? That's really my point. So it is somewhat legalistic but the implication when I see this, if they want to use that terminology, is that where they don't use that terminology the implication is that the suggestive associations are no stronger no than they were before.

PANEL MEMBER GLANTZ: Melanie, is that --

OEHHA SUPERVISING TOXICOLOGIST MARTY: In most places we did do suggestive strengthened. And on that it

should have been there also for the Cognition and Behavioral Chapter 4, because we had 3 more studies that provided additional suggestive --

PANEL MEMBER BLANC: Just be consistent.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yeah.

CHAIRPERSON FROINES: Well, it seems to me --

OEHHA SUPERVISING TOXICOLOGIST MARTY: We could do it either way, I don't care.

PANEL MEMBER GLANTZ: Well, I like it. I mean, I thought the strength in places that you had, because I noticed it throughout the report. I thought that was useful information.

CHAIRPERSON FROINES: Well, it seems to me that have 2 choices. One is to put a footnote if you like it, and everybody agrees -- and they may or may not -- then there needs to be a footnote that explains strengthened or you need to add the term to Chapter 1 and explain it, but it can't go by -- it cannot stay the way it is.

PANEL MEMBER BLANC: Well, just one sentence in that first little bullet in Chapter 1, where you say what suggestive is. You could say "A suggestive association could be further strengthened if additional studies have emerged, yet not sufficient enough in quality or findings to move something to..." you know?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay.

That's easy.

PANEL MEMBER GLANTZ: I think that's fine with me.

CHAIRPERSON FROINES: I think unfortunately again given that we are going into the trial on Tuesday, we have to be somewhat legalistic in our approach.

PANEL MEMBER GLANTZ: Okay.

CHAIRPERSON FROINES: Melanie.

OEHHA SUPERVISING TOXICOLOGIST MARTY: That was really the gist of what happened in Chapter 6.

PANEL MEMBER BLANC: And the questions that -- I think there were 1 or 2 places where I had a question about studying where it was cited. I think the Eisner study, which you use as a support for asthma, bartenders, that got moved appropriately?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yes. And your study also got moved to other.

PANEL MEMBER BLANC: Good. Okay.

OEHHA SUPERVISING TOXICOLOGIST MARTY: As I recall, we did virtually everything that you had suggested.

PANEL MEMBER BLANC: Great.

CHAIRPERSON FROINES: Melanie, I thought you said that there's someplace where you have adult and adolescence, but I'm looking at table 6.00 and I don't see

that.

PANEL MEMBER BLANC: Well, her point was, I think if I understood it, is that in the adolescence, which had sometimes been included in with adults and sometimes included with children are now included with adults. So they're subsumed in the adult section. Is that correct?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Yeah. Exactly. I put little footnote in the table, Footnote C, it says "Some studies include adolescents as adults," where I put asthma, because we want it -- it was hard putting adults and adolescents. It made the table look funny, so we just footnoted it.

CHAIRPERSON FROINES: Well, don't you have to add a clause that says that that occurred, but we recognize that adolescents' lung function is still undergoing growing. I adolescents are different than adults.

OEHHA SUPERVISING TOXICOLOGIST MARTY: We could add that clause in the section description.

CHAIRPERSON FROINES: I mean, the question is does -- are the studies impacted by the fact that these are adolescents?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Well, it's hard to know, because, you know, not every study did exactly the same thing and then didn't use the same age participants.

PANEL MEMBER BLANC: And they were responsive to the critique from --

CHAIRPERSON FROINES: No, I understand. I understand that it's not trivial. I don't want to nitpick, but depending upon the study if you are looking at adolescents, it does have implications. So my point is just simply recognize -- put a clause in there that recognizes that adults and adolescents are different.

PANEL MEMBER BLANC: Could be.

CHAIRPERSON FROINES: Could be different.

I think we're waiting on you.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Okay. I will put the clause in that adolescents are still developing lung function.

CHAIRPERSON FROINES: So we're still on Chapter 6.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Right.

CHAIRPERSON FROINES: We're still, I guess, with Paul.

PANEL MEMBER BLANC: I think that's sufficient discussion. I just wanted the record to reflect that even though we hadn't discussed it last time, that changes from the previous discussion were addressed and clarified. And I think you've put on the record that there was one other study added to the other health effects, and that there

was for -- I think the other thing that you did was to go back and make sure that you weren't missing studies that occurred in the interval.

OEHHA SUPERVISING TOXICOLOGIST MARTY: Exactly.

PANEL MEMBER BLANC: So aside from the study that you mentioned that's not yet in the table, does that table include some studies that weren't in previous versions? I mean, have some already gotten in there or is this exactly the same number of studies, albeit a couple of them were moved around or were there already --

OEHHA SUPERVISING TOXICOLOGIST MARTY: There actually are a couple more studies in there.

PANEL MEMBER BLANC: I thought there were, so you just want to make that clear too, okay.

I'm done.

CHAIRPERSON FROINES: I think we have gone through the first 3, and we were at Kathy.

PANEL MEMBER HAMMOND: Is it too late to ask a question?

CHAIRPERSON FROINES: No.

PANEL MEMBER HAMMOND: This is about Part A. And it just says -- I was going through things and I missed something and I have a question about the exposure assessment. I'm so sorry.

This is going through the finding, and I'm trying

to put it together. And I apologize for not catching this sooner. And the question has to do with the in-transit vehicle exposures. In the children's scenario you make a use a higher concentration than you do in the business traveler. And basically what you did is in the children's scenario, you start with the value of 693 grams per cubic meter or particles. And then you proportion that to nicotine.

In the business traveler you take the average of that 693 and the -- another number to come with 392 and then you take that. Was there a reason you took the average? I missed this when I read it. I was looking to see it. And it was only when I went back and looked at did I realize that there were 2 different in-transit numbers used.

One combines windows up and windows closed and there other just has windows always closed. So this is the scenario C4 versus T2. So on pages V49 and V54 and the explanations for each of those are in preceding pages.

ARB SUBSTANCE EVALUATION MANAGER AGUILA: Dr. Hammond, we have Peggy Jenkins who could probably shed a lot more light. But my understanding is that C4 scenario was intended to represent a maximum case. So we took the upper range of the in-vehicle study for that number.

PANEL MEMBER HAMMOND: Right. But I think the --

this is something that I thought was also a high exposure area.

ARB SUBSTANCE EVALUATION MANAGER AGUILA: Well, it's not really a maximum based, it's more of a high-end, more of a realistic scenario, if you will.

ARB INDOOR EXPOSURE ASSESSMENT SECTION MANAGER JENKINS: Peggy Jenkins. The business high traveler matches the children's high traveler or high exposure, so we kept that, but we went -- we used the highest number for the maximal.

PANEL MEMBER HAMMOND: I got it.

CHAIRPERSON FROINES: What page are you on?

PANEL MEMBER HAMMOND: I was on V49 versus V54. What Peggy is pointing out -- or Dr. Jenkins is pointing out is that V47 matches the V54 the in-transit estimate.

Thank you. It was something I was looking at and -- okay, right. I think I did catch that. I was reading through it and I forgot it.

ARB INDOOR EXPOSURE ASSESSMENT SECTION MANAGER JENKINS: Yes.

PANEL MEMBER HAMMOND: Going back to the finding and putting it together. Okay, thank you. I apologize for it.

So now back to the Committee about the report. I think we have been provided a really excellent report and

summary. And I'm very pleased that we have a scientific basis in which to make some findings. That's basically what you want.

CHAIRPERSON FROINES: It's up to you.

PANEL MEMBER HAMMOND: Then that's the kind of information you want from us, right?

CHAIRPERSON FROINES: (Nods head.)

PANEL MEMBER HAMMOND: I don't have reservations at this point. I think we are now provided with the necessary information to go forward.

CHAIRPERSON FROINES: Charles.

PANEL MEMBER PLOPPER: I think the report IS complete and insightful. I think it's going to be useful. I support IT.

CHAIRPERSON FROINES: Gary.

PANEL MEMBER FRIEDMAN: Are we talking about our findings yet or just about the report?

CHAIRPERSON FROINES: The report.

PANEL MEMBER FRIEDMAN: I think it's a fine report, a very good piece of work.

CHAIRPERSON FROINES: Basically, what we're doing here, I think, is, in a sense, we are individually stating conclusions that will fulfill our obligation under the law that says we need to determine whether the report is scientifically valid. I don't know the exact language

anymore, but you know what I'm saying.

It's the 24th.

PANEL MEMBER BLANC: My question is to Stan, which is to in parallel to the brief follow up on the respiratory chapter, the cardiovascular health effects chapter has only really one substantive change, which is a brief added section on oxidative stress. And I think that reflects the discussion. I don't remember whether that reflects the discussion last time or the time before. There were some substantive discussions about redividing things. I think those have occurred. Has everything else --

PANEL MEMBER GLANTZ: Yes.

PANEL MEMBER BLANC: -- occurred with the cardiovascular chapter and your review of that meta-analysis?

PANEL MEMBER GLANTZ: Yeah. The one suggestion -- this was in the list of things that I was going to just give them, but I think that we just published a big paper, which I had given Melanie the manuscript for, Joaquin Barnoya and I, in circulation on mechanisms, which I think ought to be worked in somewhere into Chapter 8 just so that it gets in the reference list.

But the material that we published is all pretty much covered in the chapter. So I read through Chapter 8

quite carefully and I'm happy with it. Other than adding that one reference just for completeness.

CHAIRPERSON FROINES: Where is the section oxidative stress.

PANEL MEMBER GLANTZ: It's near the end, as I recall.

PANEL MEMBER BLANC: Yes. It's on 8-42 and 8-43, oxidative effects.

PANEL MEMBER GLANTZ: I thought the chapter -- I thought they integrated everything we've suggested.

PANEL MEMBER BLANC: That being said, I think that the -- and presuming that the specific changes that have been discussed here today, none of which, in my opinion, rise to the level of a major or crucially substantive change, I think that I'm very satisfied with the document. I think it's been quite responsive to the feedback, that you've been given.

CHAIRPERSON FROINES: Craig.

PANEL MEMBER BYUS: I concur. I really think this document was very well put together. I'm actually struck by what a health hazard environmental tobacco smoke is. After reading this -- I mean, I read the last document in considerable detail. And now after reading this one, the case against environmental tobacco smoke is even stronger and more pervasive in terms of organs and

diseases that are correlated with it in terms of causality.

And the quality with which the document presents all the data, which is -- and it is very complex, very difficult. It is quite good.

So I'm very pleased with it. I'm pleased with the way it was done. I'm pleased with the results. I'm pleased with the way it was written, the quality.

CHAIRPERSON FROINES: Melanie, I'm going to say one thing and then move ahead. I think that the section on oxidative stress could have been much more fully developed. I think it's not really as fully developed as it should be. The word inflammation is not used once in that section. The word glutathione is not mentioned once in that section.

It really looks like what was put together to meet a request, but it isn't as fully developed as I would prefer. But I think it basically -- you know, I mean -- I think it's like a primer on the topic. And so for purposes of this document, I think it's sufficient. I personally don't think it's complete, but I don't want to raise hackles.

So as far as I'm concerned, we can move ahead. I do think this could have been better developed to be perfectly honest. But I don't want to open Pandora's Box

either, because it's not relating to the specific studies. It's really relating to the topic in general, so it doesn't -- I don't think it impacts the overall view that everybody has for the report.

But if you want to make any changes in this appendix, then I certainly would be open to it.

PANEL MEMBER GLANTZ: Well, you know, the paper I mentioned that Joaquin and I did they reviewed has a lot of discussion -- there's a lot of new research. The reason I didn't push this is the point you made, this isn't going to change the substance of the report.

But when you're finalizing it, if you'd look at that paper, I think you could flesh this out some with the references that are in there.

CHAIRPERSON FROINES: You know, the problem is that when -- since I work on oxidative stress all the time, you become acutely aware of all that's missing. So that you hold it to a higher standard. But I think it doesn't impact what this report is attempting to achieve. And so it's -- the report is never intended to be an encyclopedia. It's intended to deal with ETS, and I think we should let it go at that.

So I agree with Stan. So at this point, Stan, I think that we can have a motion.

PANEL MEMBER GLANTZ: Okay. Well, I'd like to

move that we accept the report subject to the revisions that have been discussed at this meeting and that the Panel delegate the authority to the Chair to review the final edited version and accept it on behalf of the Panel.

PANEL MEMBER LANDOLPH: Second.

CHAIRPERSON FROINES: Discussion.

PANEL MEMBER FRIEDMAN: I think it's -- I would really like to take a look at what you add about the association of alcohol and ETS, if you don't mind that little addition.

CHAIRPERSON FROINES: No. He just said that it's up to the Chair to read the changes, which doesn't mean the Chair isn't going to circulate the changes, so other people can read them, because --

PANEL MEMBER GLANTZ: The Chair, I think, would do that.

CHAIRPERSON FROINES: I operate strategically.

PANEL MEMBER BLANC: I would just like to offer a friendly amendment, which is before the word "edits" in that motion that the word "minor" be inserted, because I do believe there are minor edits.

PANEL MEMBER GLANTZ: I accept your friendly amendment.

CHAIRPERSON FROINES: Okay. Any further discussion?

This is a landmark vote, because we've been battling ETS since when, Stan?

PANEL MEMBER GLANTZ: Since the first -- when did the first report start moving, 1993?

OEHHA SUPERVISING TOXICOLOGIST MARTY: Three or four.

CHAIRPERSON FROINES: It's another. It's been more than a decade.

PANEL MEMBER BLANC: I'll call for the question.

CHAIRPERSON FROINES: Sorry.

All those in favor raise your hands?

(Hands raised.)

CHAIRPERSON FROINES: It's a unanimous vote.

Okay.

PANEL MEMBER GLANTZ: Melanie, is probably very disappointed that she'll get to move on to something else.

(Laughter.)

CHAIRPERSON FROINES: Well, we want to have a workshop, at some point soon, to talk about what compounds should be coming forward. And I think Janette will see that as a help to her efforts rather than an hindrance.

I'm very anxious to talk about what TACs should this committee be taking up, at some point, because it's been 5 years -- well, 7 years, and we don't want to wait 7 years again, I think.

PANEL MEMBER GLANTZ: We should do the Findings.

CHAIRPERSON FROINES: We're going to do the Findings right now.

Okay. Everybody has a copy of the Findings. And I should jut say for the record that the Panel has just voted that the report is based on sound scientific knowledge, methods and practices and represents a complete and balanced assessment of our current scientific understanding. The panel was unanimous in meeting that legislative language.

So we are now at the issue of the Findings which people have read. And I guess the floor is open for comment.

Gary.

PANEL MEMBER HAMMOND: Are you going to go one by one on the Findings?

CHAIRPERSON FROINES: Whatever, however.

PANEL MEMBER BLANC: Well, actually --

PANEL MEMBER FRIEDMAN: I have one on number 5 and 6.

PANEL MEMBER BLANC: Actually I have a process question. Is it your goal at this sitting now through our comments to edit the existing text such that you have a final text right now at this meeting. Is that what your purpose of this discussion is?

CHAIRPERSON FROINES: No, my intent at this meeting is to have comments from the Panel about how these -- well, if everybody agrees that these Findings are fine, we can take a vote, and we'll be done. I don't think that's going to happen. And therefore, I think what we're doing is we are in the process of discussing the Findings as they exist and making recommendations for subsequent changes.

PANEL MEMBER BLANC: And then come back to us or --

CHAIRPERSON FROINES: Which will come back -- which we will then take -- we'll take the transcript on the comments and then we'll develop a new set of Findings and we'll circulate that, and then we will -- how do we deal with a vote on that, Jim, if we're not going to have a meeting?

PANEL MEMBER GLANTZ: Well, I'd like to -- I mean, I'd like to see -- I had actually thought we would finalize the vote on them today and be done, because I think that they're fairly straightforward. So I think that ought to be the goal. But if we don't -- if that doesn't work out, we have another meeting scheduled on July 8th, and we can take the final vote at that meeting.

But I personally thought we would get, since I don't think there's anything controversial here, I mean

there's a few things that, based on this discussion would be reworded. But I would hope that we could actually finish today. I think that should be the goal, not that we will accomplish it or not.

CHAIRPERSON FROINES: Well, Stan, I think speaking from my point of view, I think that in some respects there's a lot of good material in these Findings. I think the problem is what's missing from the Findings, in part.

PANEL MEMBER GLANTZ: Well, why don't we just go through this and see how far we get.

PANEL MEMBER BLANC: I'm sorry. I didn't want to derail it, I was just hoping to get a sense of what the parameters were. And I understand the parameters. Let's start having the discussion, but we're not hooked into a discussion which has to be at the level of completing the document, if it's not going in that direction.

CHAIRPERSON FROINES: We have the option of completing the document, but we have the other option of voting on July 8th for the final document.

Gary had comments.

PANEL MEMBER FRIEDMAN: I have things on 5 and 6, but if you wanted to go through it one by one, I could wait. How do you want to do this, do you want to just...

CHAIRPERSON FROINES: I think that -- However.

It's up to you.

PANEL MEMBER FRIEDMAN: I'll just go ahead.

Following Stan's comment that we should be critical and not rubber stamp, and Craig's concern that, you know, the relationship between estrogen and breast cancer is really not that well understood, I still feel that the similarity between active and passive smoking in terms of risk of breast cancer is sort of the elephant in the room, that we have to comment -- at least comment on. And I have a suggested sentence to go at the end of number 5.

I would say, "Given that active smoking also involves passive smoking, the reasons for the similarity of active and passive smoking risks elevation for breast cancer are not well understood." I just would like to add that, so that we're not saying everything is beautiful. And so I just would like to say that we have some concerns that we don't really understand that.

CHAIRPERSON FROINES: Anybody have a problem with that?

Paul.

PANEL MEMBER BLANC: I actually don't have a problem with that sentence. I would be willing -- it depends -- I would prefer to have a bit more global comment that we should add is directly related.

Katharine, I hope it's okay if I say it, because I know your next in line.

I think that the fundamental problem with the Findings as they're written is that there's a very drastic imbalance with very long commentary on breast cancer, for example, and very short summary statements on other Findings. And I find that that implies something which may not be intended.

I think the breast cancer section should be cut considerably or you're going to be forced to have that length of discussion with every item. Our Findings, after all -- I like the tone of Gary's statement. In fact, I could live with that, you know, 2 sentences plus that, but not half a page on that.

PANEL MEMBER GLANTZ: Yeah, I agree with that. And what I was going to suggest is that in terms of number 5 that we keep the first couple sentences. But then where it says, "More than a dozen studies,..." I would delete everything down to where it says, "...stratified by age or menopausal status.", which would make -- because I had exactly the same reaction you did, Paul.

So number 5 would then read, "There has been substantial new research published on ETS breast cancer since the 1997 report. Epidemiological studies, supported by toxicology of tobacco smoke constituents, provide

evidence consistent with a causal association between ETS and breast cancer in younger primarily premenopausal women."

Actually, you could even delete the last, and that would be what I would say. And then I think Gary's sentence I would actually put it maybe as a separate statement.

CHAIRPERSON FROINES: Kathy.

PANEL MEMBER HAMMOND: I had a similar reaction to number 5. I felt one got lost in the details, so I agreed with Stan's suggestion.

What I had been planning to suggest is people reading this would get lost. It's an important message. It's an important message and important finding is along the lines of -- and I was going to put it the end, but delete a lot of this. We don't need to do it, but I'll put this on the record.

The last sentence should be something that is clear. Like, "Thus, there is now conclusive evidence that ETS is causally associated with breast cancer in younger primarily premenopausal women. That statement has to be a clear statement.

PANEL MEMBER GLANTZ: But if you delete --

PANEL MEMBER HAMMOND: No, no. I'm saying --

PANEL MEMBER GLANTZ: But it would do exactly

what you're saying.

PANEL MEMBER HAMMOND: I understand that. That's what I said, Stan. I just want to put that on the record that it's important -- it's supporting what you're saying -- it's important that we be very clear what the Finding is. And that is the Finding. And I don't think all the -- I think it's better to delete all the extra words, all the caveats, all the other things. If we are going to have them, it may be has to be in a different kind of context, and maybe there's another number that's defined, you know, maybe number 5. If you want to have all that detail -- you may want to have all the detail, but then there's a simple statement, like the statement in number 6, a simple statement, that says that there this is causal evidence. But it needs to be clear and right now it's not.

PANEL MEMBER GLANTZ: Well, is there anybody against deleting the material beginning with, "More than a dozen studies..." through the rest of there.

PANEL MEMBER FRIEDMAN: I thought you were leaving something in at the end.

PANEL MEMBER GLANTZ: No, I actually changed. We don't need it, because it's redundant.

So basically number 5 would be the first 2 sentences.

PANEL MEMBER HAMMOND: I think that's fine.

PANEL MEMBER BLANC: Plus what Gary added.

PANEL MEMBER FRIEDMAN: Well, if you're going to add my thing, I sort of would like to leave in the carcinogenicity -- the last sentence there, too, so to give it some -- you know, I would sort of like to leave that in.

PANEL MEMBER GLANTZ: Okay. Well, then fine. That was actually the one I was going to leave. So let's keep that.

CHAIRPERSON FROINES: So but you want the first 2 sentences, and the last sentence, plus Gary's.

PANEL MEMBER HAMMOND: Gary is on the --

PANEL MEMBER FRIEDMAN: No, no. I just was saying that there's still -- we don't understand why there's similar risks between active and passive.

PANEL MEMBER HAMMOND: I just lost it, right.

PANEL MEMBER FRIEDMAN: Because people are going to jump on that and we have to recognize that this is an issue.

PANEL MEMBER GLANTZ: I would suggest --

PANEL MEMBER HAMMOND: The only problem I have, as soon as we do that -- I mean, I think you're right. We should have that in there. But now we're going to have 4 sentences. We have 2 sentences here. We have the one at

the end and the sentence you're going down, which is a good one. We have 4 sentences. Again, I'm afraid the meaning -- the thrust of the finding will be lost.

So I guess I would suggest that the second sentence may become the last sentence, so at least it ends with a clear statement as to what the Findings -- what the Finding is that there's epidemiologic studies supported by toxicology.

CHAIRPERSON FROINES: Well, the sentence that stays in here, "The carcinogenicity data on tobacco smoke..." could be sentence number 2 at the top, which then is followed by epidemiologic studies and that gives you a. -- it actually flows.

PANEL MEMBER HAMMOND: But then -- I don't want the last sentence to be the one about what the apparent inconsistency of active smoking. That's an equivocal statement. I think the equivocal statement ought to be earlier up in the plan.

PANEL MEMBER BLANC: Kathy's point is well taken. And it will also make sense with Point number 6 that follows.

PANEL MEMBER FRIEDMAN: So, in other words, put this last sentence plus mine is the second and third and then finish with what's there as the second.

PANEL MEMBER HAMMOND: Yes.

PANEL MEMBER FRIEDMAN: That sounds good. You may, after you see it, you may wan to --

PANEL MEMBER HAMMOND: Yeah, he may want to word-smith it, but it should end with that strong statement.

CHAIRPERSON FROINES: Yeah, that would be fine.

So we're saying that the sentence that Gary adds becomes sentence number 2?

PANEL MEMBER FRIEDMAN: No. It's number 3, and the last sentence becomes number 2.

CHAIRPERSON FROINES: I got it.

PANEL MEMBER GLANTZ: But I would just -- just for completeness, I would also suggest slightly rewording what is the current last sentence to say something like, "The carcinogenicity data to tobacco smoke constituents continues to strongly support the conclusion that breast cancer is causally associated with ETS exposure." That would be --

PANEL MEMBER FRIEDMAN: I like the plausible statement.

PANEL MEMBER BYUS: I like it, too.

PANEL MEMBER GLANTZ: Okay, I rescind my suggestion.

PANEL MEMBER FRIEDMAN: I would even take out the word "strongly".

PANEL MEMBER BYUS: I would too. I would take the word out "strongly".

CHAIRPERSON FROINES: If you will allow the Chair to make one comment. What's happening is people are talking over each other. And Kathy is still trying to get through what her comments were to be. So if we can try and not jump in when people aren't finished.

PANEL MEMBER HAMMOND: Well, I think it's more important to finish Item 5 and have all our discussion on that before we go. But I do want to -- I have another comment on 6. But let's finish -- are we done with 5?

PANEL MEMBER FRIEDMAN: May we do 6 with that too, because I have one suggestion.

CHAIRPERSON FROINES: Sure go ahead.

PANEL MEMBER FRIEDMAN: Instead of saying -- I would just insert, "If any". "There is little, if any, evidence of an increase in breast cancer risk..."

CHAIRPERSON FROINES: I get a yes from Paul, yes from Roger, yes from Joe, yes from Craig, yes from Kathy, silence from Stan, yes from Charles.

PANEL MEMBER GLANTZ: The only reason I'm being silent is just I'm thinking back to what it says in the report, and it did say there might be some subgroups, but I'm not going to -- I think that's okay.

PANEL MEMBER FRIEDMAN: There might be some what?

PANEL MEMBER GLANTZ: Well, it said like there might be some sensitive subgroups.

PANEL MEMBER FRIEDMAN: Yeah, but that's so weak and the strongest studies --

PANEL MEMBER GLANTZ: No, I'm not arguing with you. I'm just -- that was what I was thinking, that's why I was quite, but I can accept that.

CHAIRPERSON FROINES: I think we also need to think about the impact of the report, in a sense. We're doing the science not the policy. But we want to make sure that the points are clearly enunciated that we want everybody to read, and the degree to which -- so I agree with you in that sense.

PANEL MEMBER GLANTZ: No, I can accept. No, no. I was just -- the reason I was quiet was I was just thinking about it. I can accept your suggestion without a problem. So we have unanimity.

CHAIRPERSON FROINES: I was going on everybody going like this and --

PANEL MEMBER GLANTZ: Well, I was thinking. I was quiet. I'm sorry. I won't do it again.

PANEL MEMBER FRIEDMAN: What I said was going to take away from your conclusion that it was a toxic air contaminant --

PANEL MEMBER GLANTZ: No, no. I agree. I agree.

I just was thinking. I'm sorry.

CHAIRPERSON FROINES: Are you done with 6?

PANEL MEMBER FRIEDMAN: Yes, I'm done.

CHAIRPERSON FROINES: We'll go back to -- I'm not sure you're totally done.

PANEL MEMBER HAMMOND: Okay. I'm now moving to exposure, moving back to the exposure. This is number 3.

If we're going to accept a scenario-based exposure approach, the Findings here are inconsistent with the report. So if you turn to B-55, this is the summary of the scenario-based approaches. And, in fact, the scenario-based approaches leads to much higher levels of 24-hour average exposures than are in our Findings.

So I actually have 2 points here. One is we have not mentioned here, although it's strongly in the report, that children are particularly vulnerable to these exposures. And I think given the concern about children, we probably should highlight that as one of our Findings about children, both that they are likely to have -- be among the more highly exposed people and that they don't have the ability to escape as easily as adults do or to remove themselves from ETS.

So that's one type of finding.

But the other is in terms of the levels. So in the Findings, it says that they can range up to 3

micrograms per cubic meter and yet in the table you say it goes up to 20 micrograms per cubic meter. That's quite a significant difference.

In fact, the children -- the high exposure is 7 and the maximally exposed was almost 20. And I do believe that 20 is an appropriate number if we're talking about the range. I'm not saying it's typical or average, but if we're talking about range, then we should be using the same numbers.

PANEL MEMBER BLANC: Is what happened -- what they mine is that the time weighted 24-hour exposure is a mean estimate. They don't really mean range in the mathematical sense. They mean that if you look at the range of means -- the 20 value was the mean value, right? The 20 was a range of a scenario that the mean value for that series of scenarios was 3 or something? Is that what where that difference comes from?

CHAIRPERSON FROINES: Jim, are we talking about a mean or a max?

ARB SUBSTANCE EVALUATION MANAGER AGUILA: The 19 is a max.

CHAIRPERSON FROINES: The what?

ARB SUBSTANCE EVALUATION MANAGER AGUILA: The 19.4 in the formula is a maximum.

CHAIRPERSON FROINES: So the point is -- their

time weighted 24-hour estimate can range up to, and so that's the mean value, as opposed to the maximum value.

PANEL MEMBER HAMMOND: But it's not. I mean, if you're basing this on the scenarios that are given, every scenario that has an in-vehicle exposure, you know, the low one is 7, right. So that's higher, since in-vehicle is listed.

Now, if you took in-vehicle out -- there are different ways to approach it to deal with this. But I think finding as it stands is incorrect or inconsistent with the report. So it could be for those living in homes with indoor smokers, their time weighted 24-hour average estimate can -- I would -- you know, can be -- I wouldn't say range up to. We actually do have measurements over 3, but let's just say can be about 3 micrograms per cubic meter, but the in-vehicle immediately raises it to something higher.

PANEL MEMBER BYUS: We should say what that number is?

PANEL MEMBER HAMMOND: Right. I think what I'm saying is either -- you know, then there might be a sentence of saying in-vehicle exposures can lead to much higher 24-hour average and reach levels of 10 to 20 or 5 to 20.

PANEL MEMBER GLANTZ: Can I ask the ARB people,

if -- I agree with Kathy that we should put that in there. Can you tell us how this should be edited to accomplish what Kathy is asking for?

CHAIRPERSON FROINES: Can I follow up on what Stan is saying, because I'm still operating on the assumption that there's a possibility we can finish and there's a possibility we can't. And if we can get specific language as we move along like we did with 5, then we'll be closer to the goal of finishing.

PANEL MEMBER HAMMOND: That's why I was proposing that.

CHAIRPERSON FROINES: So what's the number that we are --

PANEL MEMBER BLANC: Well, maybe what I'm going to say will solve that problem, which is unless there's a legal requirement I think this would get the point across it would be more readable without including all of the numbers and base it on language such as Kathy is suggesting using, you know, a much higher, order of magnitude higher without going through all the numbers, unless there's some legal requirement. Because once again having this level of detail, I can go to the Executive Summary if I want to see all the numbers.

PANEL MEMBER HAMMOND: I mean, the simplest answer I could see, to make the least number of changes,

is just to change the 3 micrograms to 20 micrograms per cubic meter.

PANEL MEMBER ATKINSON: I thought it was 19.

PANEL MEMBER HAMMOND: Yeah. Well, I'll just say 20, because I don't think -- that implies a certain amount of precision I don't believe exists. So one of the simplest suggestions with the minimum changes would be 20, but I would ask if you think that would be misleading?

CHAIRPERSON FROINES: But I want to go back to what Paul said, Kathy, and see -- because this is our Findings. This is not simply a recitation of what's in the rest of the document. So the degree to which we, in a sense, have Findings that look like the Executive Summary, that may be just fine. But I think we always have to answer the question what do we intend our Findings to convey?

And if it's a series of numbers, that's fine. But if there is a statement that draws a conclusion from us, then we should think about that. And so the question is what's our intent?

PANEL MEMBER HAMMOND: I mean, I could certainly reword this as I would say it myself, if that's what you'd like. I mean, I would -- you know, I would certainly feel comfortable saying that, "Those living in homes with smokers experiencing..." -- you know, I would say, "Those

living in homes with indoor smokers have much higher levels of exposures and those who experienced in-vehicle exposures, those levels can go even an order of magnitude higher than that." And I would then conclude with a sentence about, "Children are particularly vulnerable to these exposures and" --

PANEL MEMBER BLANC: No.

PANEL MEMBER HAMMOND: -- "are particularly likely to experience those higher exposures if their parents smoke."

PANEL MEMBER GLANTZ: Why don't you, while we continue the discussion, take your pencil out and write the specific language, and then we can talk about it afterwards.

CHAIRPERSON FROINES: She is going to write it.

PANEL MEMBER BLANC: Kathy, I also think that the sentence in our Findings about that a scenario-based exposure method uses the blah, blah, blah, blah, blah, blah, blah. I don't think that's necessary. It's enough to say they use a scenario-based approach. I think the rest of the paragraph can be deleted. We just say exposures range by more than an order of magnitude higher.

PANEL MEMBER HAMMOND: I'm happy with that too.

CHAIRPERSON FROINES: So again, I want to reemphasize that these Findings should say what we want

them to say and not just be recitations of facts.

PANEL MEMBER BYUS: That's what I was going to say. You think, Kathy, a scenario-based method is appropriate, that this was a good way of doing it accurately, reflecting the best methodology, or -- do you want to say something like that? I mean, you know, this field. And so I mean --

PANEL MEMBER HAMMOND: Well, I mean, I actually think the scenario-based approach is informative. I think that's the better way to look at it. As I think you can combine scenario-based information with measurement data with all of these things together we can come to these kind of findings. So maybe that's the way you want to look at. I think the scenario-based approach was very informative.

PANEL MEMBER BYUS: It was very informative, coupled with the actual measurement data.

PANEL MEMBER GLANTZ: The only change I would suggest, Kathy, that you had is I think the statement about kids' exposures, we should have that as a separate finding --

PANEL MEMBER HAMMOND: I was wondering about that too.

PANEL MEMBER GLANTZ: -- to fit in with the SB 25 stuff. So I was going -- so I would edit 3 and then

create a new finding to follow it dealing with kids.

ARB INDOOR EXPOSURE ASSESSMENT SECTION MANAGER JENKINS: Excuse me, could I offer one point of clarification. I'm not sure this comes through in the report, but for the scenario C-4, the children's maximally exposed scenario, we do, what we call, sort of a realistic maximally exposed. So this doesn't refer to the most exposed child. It would be a group of children and some of whom would have higher levels. So, in that sense, I think it's appropriate.

PANEL MEMBER HAMMOND: Well, I mean, you know, to be perfectly honest, just based on my own measurements, I'm pretty sure that there are infants out there that are exposed without even being in a car, in their homes to 20 micrograms per cubic meter.

ARB INDOOR EXPOSURE ASSESSMENT SECTION MANAGER JENKINS: Right.

CHAIRPERSON FROINES: I think that statement number 1 is exactly what we want to say. How do people feel about statement number 2?

PANEL MEMBER BLANC: I think on the same basis of statement number 2 was overly long. And I think the second sentence, which says, "The study gathered two 8-hour samples and six 1-hour samples per site tested.", should be deleted. I think it's not relevant to what we

have to say.

And I think that you can say, if you need to have numbers, I'd say the results showed a range of ambient nicotine concentrations from .013 to 4.6. And I don't think, for our purposes, we need to differentiate between them.

CHAIRPERSON FROINES: Did you say the ambient nicotine concentrations which showed a range, is that what you're saying?

PANEL MEMBER BLANC: "Results showed a range of ambient nicotine concentrations from .013 to the 4.6 micrograms period, you know, per meter. I don't think the stuff about the 8-hour and the 1-hour and the this and the that. For our purposes, it's not --

CHAIRPERSON FROINES: Well, it's actually -- you can't go .013 to 4.6, because you have different times.

PANEL MEMBER BLANC: Why?

CHAIRPERSON FROINES: Well one is 8 hours and one's 1-hour.

PANEL MEMBER ATKINSON: You can do 0.01 to 5 or to 4. It's all the same. 0.01 to 4 that essentially covers both.

CHAIRPERSON FROINES: To 5.

PANEL MEMBER ATKINSON: Or 5.

PANEL MEMBER BYUS: They're so similar.

CHAIRPERSON FROINES: That's fine. Kathy is going to give us number 3.

PANEL MEMBER BLANC: And a new number 4.

CHAIRPERSON FROINES: And a new number 4.

PANEL MEMBER HAMMOND: Say 3A and 3B for now.

CHAIRPERSON FROINES: And 1 is okay, but we're now over to 4.

PANEL MEMBER BLANC: I have substantive problems with number 4. I understand the goal of number 4. The goal of number 4 is to try to summarize everything that was said in the 1997 report as being causally related. But I don't find that helpful as a single bullet, partly for the reasons that have already been alluded to about the need for us to be careful about separating out the children versus the non-children's effects.

So I think if there was one bullet perhaps that said, you know, "The 1997 report had already established that ETS was causally related to the following health effects relevant to developmental toxicity or other effects in children.", you know, and then list those.

And then there should be a statement that says, "none of these..." -- "All of these continue to be inclusive in this document."

And then a separate bullet which says, "If you wish that the 1997 report found the following conclusive

associations among adults...", you know, colon blah, blah, blah. "And all of these continue to be conclusively associated within this document."

CHAIRPERSON FROINES: I want to add too -- I want to take what you said, and that's fine we can take the transcript and work with that. What I'd like to do, though, Paul, is to have a table that's attached to the Findings that, in a sense, summarizes what was 97 and what is the present, so any reader can actually look at the document and look at the table and basically it's right there in front of them.

But we should say it as you've just said it. But I think having a 1-page table that summarizes everything would be very useful. At least for me, looking at a table is always helpful. So unless somebody has a strong disagreement with it.

So the language --

PANEL MEMBER GLANTZ: I mean, basically -- I'm sorry.

CHAIRPERSON FROINES: All I was going to say is we can take the transcript -- Jim, when do we get the transcript?

MR. BEHRMANN: Two weeks.

CHAIRPERSON FROINES: We'll not make the July 11th meeting?

MR. BEHRMANN: July 8th, no.

CHAIRPERSON FROINES: Well, then can we vote on stuff on something that we're going to do?

PANEL MEMBER GLANTZ: Can I suggest the same thing I suggested. This is not a big deal. Why don't you just sort of write -- you know, everyone agrees with what you're suggesting. Just mark one of these up and then you can you read this exactly the wording you want. We don't need -- I mean, it's pretty simple.

PANEL MEMBER BLANC: All right. But I have to say that my impression of this discussion is that there's enough various changes -- as much as we would love to have something, I think there is going to have to be something that's circulated. I think it's stretching the feasibility, as much as one would want to.

I don't think that you need to have the transcript of this discussion in order to do these changes. I think if you're given good enough notes, you'll be able to circulate for everybody on the 8th the version that you need. I don't think you need to have the transcript to do that. But I don't think we're going to be able to do it.

PANEL MEMBER GLANTZ: Well, anyway. But why don't you just to -- basically, all you have to do is break the list into 2 pieces because it's the same wording

we have here. It's just 2 separate Findings.

CHAIRPERSON FROINES: Okay. Paul, to the degree that you aren't able to get that done today, you can just send it to us and we'll incorporate it. I agree, I don't know if we're going to be quite so efficient to get everything done.

Go ahead.

PANEL MEMBER HAMMOND: This is just an attempt at the 2 sections I was going to try to rewrite.

The first statement would be, "Exposure to ETS varies widely among individuals and depends on the individual circumstances. Thus, Californians who live in nonsmoking homes have only brief encounters with ETS are likely to be exposed to less than 0.1 micrograms per cubic meter 24-hour time weighted average nicotine air concentrations. While those who live with smokers are exposed only in their homes may be exposed to 10 to 100 times as much ETS. Exposure to ETS in vehicles may be much higher and lead to even higher 24-hour average exposures."

PANEL MEMBER FRIEDMAN: Good. No numbers. That's great.

PANEL MEMBER HAMMOND: Well, there's one number to get started, then everything builds from there.

And then the second statement about children.

"Children who live with smokers may be exposed to high levels of ETS in their homes and even higher levels in vehicles. Children have much less ability to avoid these ETS exposures than adults."

Is that what we're trying to say?

PANEL MEMBER FRIEDMAN: What's the reason for the last sentence?

PANEL MEMBER GLANTZ: Yeah, I think you should leave the last sentence out.

PANEL MEMBER HAMMOND: Just leave it out?

Okay, that's fine. I guess --

PANEL MEMBER GLANTZ: That's not supported by the document. It's true, but not supported by the document.

CHAIRPERSON FROINES: So Paul is working --

PANEL MEMBER BYUS: Just one question about your statement, which I think is very good. Do we want to say why we're measuring nicotine? We use the word -- we keep going back and forth between nicotine and ETS. I know nicotine is a semi-surrogate. It's a semi-surrogate. It' not a total surrogate, because nicotine actually itself might do something. But it's a surrogate for all the other bad things that are in there. I mean, do we want to make that statement or not?

PANEL MEMBER FRIEDMAN: There's an index.

PANEL MEMBER BYUS: There's an index. Do you

follow me? Do you want to make that statement or not?

PANEL MEMBER GLANTZ: I think that's a very good point. I think you should say nicotine as a surrogate for --

PANEL MEMBER BYUS: Exactly.

PANEL MEMBER HAMMOND: No, no. I'm thinking. I'm thinking of how to do it. I'm not opposing it. I'm trying to think how to fold it in without it -- in a flow. That's all. I'm not opposed to it. I'm trying to think of how to fit it in.

PANEL MEMBER GLANTZ: Well, it may be -- maybe you should leave out the one number that's there.

PANEL MEMBER HAMMOND: Well, the trouble is I think it's important. I think it's important to have a base, a place from which to discuss it.

Well, actually that's true. We could do that.

So then it would be, "Thus, Californians who live in nonsmoking homes have only brief encounters with ETS are likely to be exposed to extremely low levels of ETS. While those who live with smokers and are exposed only in their homes may be exposed to 10 to 100 times as much."

PANEL MEMBER BYUS: That's good.

PANEL MEMBER GLANTZ: I wouldn't just mention homes though, because people can be exposed in other places.

PANEL MEMBER HAMMOND: I'm focusing on where, again, I think what's been here. Actually, I'll tell you what the problem is, I just realized -- one problem with what I've written is -- is going back to the idea of what a toxic air contaminant is about. It's supposed to be focused on outdoor air. And I haven't, in this finding, said a thing about the outdoor air levels. I probably should say something.

PANEL MEMBER GLANTZ: That's in number 2.

PANEL MEMBER HAMMOND: Is it? Actually, that's where these -- these things were actually nicotine measurements, but they weren't called out as such. Oh, yes it says ambient nicotine, yeah, right.

Well, I mean given that we kept 2 in here, in thinking about it, is that because 2 has numbers putting the number in the homes of nonsmokers is a useful thing.

PANEL MEMBER ATKINSON: Yeah, just leave the number in.

PANEL MEMBER HAMMOND: The way I had it originally.

PANEL MEMBER ATKINSON: Yeah, the way you had it originally.

PANEL MEMBER HAMMOND: Because I think it flows from 2 very well.

PANEL MEMBER ATKINSON: Two covers nicotine.

PANEL MEMBER HAMMOND: Right.

PANEL MEMBER GLANTZ: But I think, at some point, in number 1 and number 2, you should just have a parenthetical statement saying one surrogate marker for ETS is nicotine.

PANEL MEMBER HAMMOND: I mean --

PANEL MEMBER GLANTZ: Just a parenthetical statement.

PANEL MEMBER HAMMOND: -- it wouldn't matter what marker you used, because the point is to have that they all had a ratio.

PANEL MEMBER GLANTZ: Right. But just to make the point that that is a surrogate marker.

PANEL MEMBER BYUS: A valid surrogate marker, accurate, representative.

PANEL MEMBER HAMMOND: Okay. I suggest that number 2 be modified as follows. And it now says, "Results showed a range of ambient nicotine", "(a commonly accepted surrogate for ETS." Concentrations from, and then we're set.

PANEL MEMBER BYUS: Good.

PANEL MEMBER FRIEDMAN: Could you use the word extremely low. Could I suggest very low. I mean, it just sounds so --

PANEL MEMBER HAMMOND: No. We're going to leave

the number in there. It's not going to be left -- because we've got numbers in 2. Now, I'm going to put the home numbers in there.

PANEL MEMBER GLANTZ: The other thing is I think that number 3 shouldn't just talk about home exposures. There are still some people who are exposed in workplaces, for example. Not very many. But you don't want to leave The impression that the home is the only place.

PANEL MEMBER HAMMOND: Okay. There's --

PANEL MEMBER GLANTZ: The report talks about that.

PANEL MEMBER HAMMOND: All right. So what we could say is --

PANEL MEMBER GLANTZ: Just say --

PANEL MEMBER HAMMOND: Give me a second here. I just talked about home and vehicles. And what if I say "...workplaces where smoking is still allowed can also lead to higher exposures."

PANEL MEMBER GLANTZ: Yes.

PANEL MEMBER HAMMOND: How is that?

PANEL MEMBER FRIEDMAN: Is it allowed or just go on.

PANEL MEMBER HAMMOND: Workplaces where smoking is allowed, and that can include bars.

CHAIRPERSON FROINES: While we're waiting for

Paul and Kathy to do their writing, can people look at points -- just to get started again -- 7, 8 and 9. Now, my assumption is that these points, in being written, were based on the goals that Gary enunciated some time ago to make our Findings as frugal and as efficient as possible.

So that, as you can see, what the -- really all the way down to 11 -- 7, 8 -- 7, 8, 9, 10, 11 are really very summary statements. And the question is, is everybody comfortable with the frugal nature of the statement? And there's nothing behind what I just said.

PANEL MEMBER BLANC: Say that again. Where are you I was working.

CHAIRPERSON FROINES: I'm just asking for people's comments on 7 through 11, since they are broad summary statements.

PANEL MEMBER BLANC: Well, I think that number 7 has to say explicitly, at the end of it, "...adding an additional conclusive adverse health effect among children."

And I think that point number 10 needs to similarly be broken out into childhood versus nonchildhood into 10A and 10B.

And I don't understand why 11 is where it is in the order of where it is. Oh, now, I do. Now I do. Never mind.

In number 10 -- okay, I see where -- so let's go to number 11.

Number 11 is new endpoints that didn't exist at all. It's trying to make -- first of all, "menstrual cycle disorders" will not drop out of that. But, in fact, there were data the last time around -- why does it say "causal association" actually?

PANEL MEMBER GLANTZ: "...suggestive evidence of a causal association..." That's the language that's used throughout.

PANEL MEMBER BLANC: Oh, I see, okay. So this is trying to differentiate between -- Okay, I got you.

PANEL MEMBER GLANTZ: I mean, I actually wrote the original draft. Well, I took -- what happened, the origin of these -- just so it's clear how they're organized this way. The original draft Findings that were drafted by the staff before the last meeting were very long. And cognizant of Gary's desire to have them succinct, I tried to compress them and divide them up between things that were causal before and stayed causal, things that were raised, and things that were -- and then suggestive that were unchanged, and then the ones that were raised to suggestive. So that was the logic, and then they got rewritten a few times after that, but that was the logical intent.

PANEL MEMBER BLANC: So I think that 10 and 11 should be reparsed out so that one of them is things that have -- are newly suggestive for children's effects, regardless of whether that category of effect was even considered in '97, but that's not so important to us.

So the fact that they didn't have -- that stroke was not a category in 1997, I don't need it to appear in a separate one. What makes more sense is to parse out the adult and the child and have one point about things which are -- have risen to be suggestive among children, and another group that have risen to be suggestive among adults.

PANEL MEMBER GLANTZ: I think that's sensible.

PANEL MEMBER BLANC: And the nasopharyngeal cancers that's opposed to sinus? Nasal sinus cancer? These were dealt with separately -- just to refresh my memory -- because in the previous point number -- the old point number 4, lung cancer and nasal sinus cancer are listed. So they were able to -- so they truly do mean separately, nasopharyngeal cancer and cancer of the nasal sinus are separate?

PANEL MEMBER LANDOLPH: (Nods head.)

PANEL MEMBER BLANC: You've read the cancer chapter?

PANEL MEMBER LANDOLPH: Yeah, because up in the

front in the summary, they list lung and nasal sinus cancers as ETS causal of them, and the nasopharyngeal was down, I think, it's suggestive.

PANEL MEMBER BLANC: Okay.

And as Kathy was suggesting, I think there needs to be a bullet written that is a separate bullet, which says altogether, because of the convincing evidence of childhood exposure to ETS, which, in fact, may be higher under certain scenarios, and because of the conclusive evidence of an association with illnesses, which are either exclusively an issue for children or are more common among children, either causally or suggestively, that this certainly is an air contaminant which meets a criteria, you know, achieves the criteria under the children's. I mean, we need to have that as a bullet. And I think that --

PANEL MEMBER GLANTZ: I thought that was there.

PANEL MEMBER BLANC: No. It's in the Executive Summary of the document, but we haven't explicitly said that separately, have we?

PANEL MEMBER GLANTZ: Yeah, it is. It's, "The Panel Recommends that the ARB as a toxic..." "The Panel further recommends..." "...once listed, be added to the list of toxic air contaminants that may disproportionately impact..." --

PANEL MEMBER BLANC: But it doesn't what our rationale is for that. I think that we have to -- I would prefer to see in addition to that a separate bullet which goes from A to B that then that should go from B to C, because I think it's an important regulatory requirement.

And then I think that the bullet we talked about in our earlier discussion that the fact that all of the conclusions that were -- all of the associations that were felt to be conclusive in the last document none of those have been reversed, that there have been many that were suggestive in the previous document that have risen to conclusive, and others where they've been strengthened. And none of the subjective ones have been substantively weakened. It supports the systematic methodology used or something to that effect. I don't know exactly how that should be worded.

How important is it to have point number 12? We've got a lot of detail, what is it trying to tell me? Is it choosing certain inconclusive associations for more attention than other inconsistent inconclusive associations?

PANEL MEMBER LANDOLPH: I think the topic is okay, but I think it needs to be truncated significantly.

CHAIRPERSON FROINES: But, for example, "However, the effect of smoking on the father's sperm cannot be

ruled out..." I don't know -- I don't think we had evidence on the father's sperm.

PANEL MEMBER GLANTZ: Yeah. I mean, again, when I tried to draft this up, I was taking this much longer thing a trying to kind of smush it. I mean, my preference would actually be to delete 12, because the rest of the -- because this is sort of a catch-all sort of interesting things that may be ought to be thought about some more.

PANEL MEMBER BLANC: Well, how about a statement that we recognize that there were many associations which were ultimately found to be inconclusive. It remains to be seen, you know, what further research will show. The mere fact that something was inconclusive, doesn't mean that it shouldn't be studied further.

So, you know, something like that.

PANEL MEMBER GLANTZ: That would be okay. I think that would be better than what's here.

PANEL MEMBER BLANC: Because if we choose one thing down, we have to go through every single thing in the document, or else we're trying to say something that some things are less inconclusive than others.

PANEL MEMBER BYUS: Why didn't we pick this --

PANEL MEMBER GLANTZ: I mean I actually -- I kind of think, though, that's obviously. I mean my preference would be to just delete number 12. You know, so then all

of the Findings are based on things where there's at least suggestive evidence. And then everything else that there isn't, then that's -- they can go read the report.

And then the other thing is if we include the table that John was talking about, with all of those things listed in the table.

John, is that okay with you?

CHAIRPERSON FROINES: What?

PANEL MEMBER BYUS: Nod your head, John.

(Laughter.)

PANEL MEMBER GLANTZ: Well, what I'm suggesting is that we just delete number 12.

CHAIRPERSON FROINES: But I think that sentence is okay to put in. I don't think that's a problem.

PANEL MEMBER GLANTZ: Well do you think it's really necessary, Paul?

PANEL MEMBER BLANC: I could live with it either way. I was actually trying to be responsive to Joe's comment that he thought it would be helpful to say something about it, but I'm not strongly wedded. I think that one approach could be for John to try to tinker with something, if he feels that he comes up with a line that makes sense and that he supports. I would sort of defer to his editorial judgment on that.

PANEL MEMBER LANDOLPH: Yeah. I would suggest --

I'd like to make a suggestion for truncation. I mean, you can cut this down dramatically, the size of 12.

PANEL MEMBER BLANC: The reason I even brought it up at all is because I got the sense at times when we were talking about things which were inconclusive was that, you know, one wouldn't want to overly interpret inconclusive as putting a kibosh on any possibility. I guess that's probably how this point -- where this point was coming from.

So without singling out examples, I think we could say that, even though for you and me it's kind of an obvious statement, just because the data are insufficient now or contradictory.

PANEL MEMBER GLANTZ: Well, how about the following, because we're going to add this table, you know, which John had talked about. Why don't we just change number 12 to refer to the table, and to say, "The attached table lists all the endpoints that were examined." And then say, "For those areas which are inconclusive that there may be a need for further research.", or something like that.

PANEL MEMBER FRIEDMAN: There's always a need for more epidemiology.

(Laughter.)

PANEL MEMBER GLANTZ: We could discuss that.

PANEL MEMBER BYUS: Always.

PANEL MEMBER GLANTZ: You know, maybe that would be a way to do it.

PANEL MEMBER BLANC: Were you going to put in inconclusive and conclusive? Was that going to be in your table or were you taking a step up?

PANEL MEMBER BYUS: The only thing that's conclusive --

CHAIRPERSON FROINES: My view of the table was, and I think I've seen one before, the endpoints --

PANEL MEMBER BLANC: All the endpoints. So even the inconclusive and the conclusive would be there?

CHAIRPERSON FROINES: Yes.

PANEL MEMBER GLANTZ: I think that's the way to pull all of this in is through the tables. So number 12 would refer to the table, and say, "Those areas which are inconclusive did not necessarily mean it's a negative conclusion, but rather that there may be a need for Gary to do further research with high levels of funding.", which was a joke.

(Laughter.)

PANEL MEMBER FRIEDMAN: How about just saying "Other areas of interest with inconclusive results are shown on Table 12."

PANEL MEMBER BYUS: Period.

PANEL MEMBER FRIEDMAN: I've got enough money right now.

(Laughter.)

PANEL MEMBER GLANTZ: So are we all --

PANEL MEMBER HAMMOND: Okay. Let me just try again on some lists. I changed my mind when I looked over number 2 where that little clause should be.

So number 2, if you go to the end of the first sentence, which concludes, "...,the ARB monitored nicotine concentrations at several outdoor smoking areas in California." ";Nicotine is a commonly used surrogate for ETS." That fits.

And then number 3A, and they all be numbered differently later, is slightly changed. "Exposure to ETS varies among individuals and depends on their individual circumstances. Thus, Californians who live in nonsmoking homes and have only brief encounters with ETS are likely to be exposed to less than 0.1 micrograms per cubic meter (24-hour time weighted average nicotine to air concentrations). While those who live with smokers and are exposed only in their homes may be exposed to 10 to 100 times as much ETS. Exposure to ETS in vehicles may be much higher and lead to even higher 24-hour average exposures. Workplaces and bars where smoking still occurs have high ETS concentrations."

And then the other item is -- it now reads, "Children who live with smokers may be exposed to high levels of ETS in their homes and even higher levels in vehicles. Although each ETS exposures in California adults have declined substantially in the past decade, the exposures of children who live with smokers have not been reduced nearly as much."

That last was new, but I just -- it was discussed substantially in the report. And I think that there's a lot of evidence that that's true.

PANEL MEMBER FRIEDMAN: Do we know that, you know, because people are concerned that they live with a smoker, and the smoker doesn't go outside to smoke or to purposely avoid exposing the kid.

PANEL MEMBER HAMMOND: Well, I happen to know that, from some of my research, however in the grand scheme of things, much data -- the data that are available in general tell us that adult exposures have declined much more substantially than children's exposures.

PANEL MEMBER FRIEDMAN: There are data that support that?

PANEL MEMBER HAMMOND: Yeah, and that's in the report.

PANEL MEMBER BLANC: But the point is in terms of if air exposure is non-indoor air exposure, would be that

the increment of non-indoor air exposure that a kid gets --

PANEL MEMBER HAMMOND: You mean outdoor air exposure?

PANEL MEMBER BLANC: -- the outdoor air exposure would be put on top of their higher baseline. I'm just trying to tie it in to what you said earlier about our, you know, focus in a sense.

PANEL MEMBER HAMMOND: By the way, where does in-vehicle count in that regard?

To answer your question, I really don't know how to put that.

PANEL MEMBER GLANTZ: I have 2 suggestions and slight -- I would add casinos to the list, but that's --

PANEL MEMBER HAMMOND: Oh. So we're going to say workplaces, casinos and bars.

PANEL MEMBER GLANTZ: Yeah. And then the other thing that I just in listening to was thinking, that I think would be worth adding to the Findings, would be those estimates of the total emissions in tons that are in part A, because people -- I found that people are quite amazed by those numbers. So I would like to suggest adding as a number, either between 1 and 2 or 2 and 3 just those numbers.

PANEL MEMBER HAMMOND: I'd just add it to the

tend of number 1.

CHAIRPERSON FROINES: Would you be responsible to do that.

PANEL MEMBER HAMMOND: Approximately X number of tons of ETS particles are emitted.

CHAIRPERSON FROINES: Katharine, would you be responsible for doing that.

We just talked about the legal requirements. And we can vote to approve the Findings with the anticipated changes and subject to further review by the Panelists, when they're completed. Do you understand what I'm saying?

PANEL MEMBER GLANTZ: Yeah. So if that's the case, would it be appropriate --

CHAIRPERSON FROINES: Kirk, is that a fair rendition of what you and I talked about?

ARB SENIOR STAFF COUNSEL OLIVER: Yeah, that's correct, Chairman Froines.

PANEL MEMBER GLANTZ: So would it be appropriate for there to be a motion?

CHAIRPERSON FROINES: Let me just make sure. We're saying that we can vote to approve the Findings recognizing that there are anticipated changes that will be incorporated and subject to review by the Panel 3 points.

PANEL MEMBER GLANTZ: Okay well, so when you say --

CHAIRPERSON FROINES: Let me just make sure that I'm on point.

ARB SENIOR STAFF COUNSEL OLIVER: Yeah. For the record, this is Kirk Oliver Senior Staff Counsel for the Air Resources Board.

Yes, you're correct, Chairman Froines, the process would be a motion would be made to adopt the Findings consistent with the agreed changes based on the agreements that you made in your discussion here. The Findings would be accordingly changed, and then individually sent to each member for their assent that the changes were accurate and that they reflected the agreements that were made today.

PANEL MEMBER FRIEDMAN: And if we see that there's some additional editing or minor changes that we think are necessary, then what happens?

ARB SENIOR STAFF COUNSEL OLIVER: If they're just minor editing changes, then they could -- you would relay those back to Chairman Froines and those could be made without the further assent of the other panel members.

However, if there were anything substantive, then they'd have to go back to the other panel members for their review.

PANEL MEMBER GLANTZ: So how about this for a process. We could have such a motion --

CHAIRPERSON FROINES: Before, is everybody comfortable with what I said and what Kirk said?

PANEL MEMBER BLANC: Yes, Chairman Froines.

PANEL MEMBER GLANTZ: Chairman Froines?

CHAIRPERSON FROINES: This opens up so many jokes.

(Laughter.)

PANEL MEMBER GLANTZ: There's a red book right next to it.

CHAIRPERSON FROINES: If you only knew what was in that.

(Laughter.)

PANEL MEMBER GLANTZ: Well, I think that's fine. And if there was a problem, we could presumably rediscuss this at the meeting on the 8th if there's a need for any substantive additional discussion, couldn't we?

ARB SENIOR STAFF COUNSEL OLIVER: Yes, Dr. Glantz. In fact, what I would recommend is that the notice for the meeting on the 8th have an agenda item that would allow that kind of discussion to take place if it were necessary.

CHAIRPERSON FROINES: Thanks, Kirk.

PANEL MEMBER BLANC: I'd like to make a motion.

PANEL MEMBER HAMMOND: I have the admission statement, if you'd like to hear it, just -- I think the more we get done this meeting, the less likely -- the end of number 1 add the following: "...for example, annual ETS emissions in California are estimated to include approximately 40 tons of nicotine 365 tons of suspended particles, and 1,900 tons of carbon monoxide.

PANEL MEMBER GLANTZ: I would also suggest since ever this report, the 1997 of this report became a major document that's been used all over the world. I think it would be worth including a parenthetical statement with the national numbers also, which are in the report.

CHAIRPERSON FROINES: I think that we could.

PANEL MEMBER HAMMOND: It's in the -- most people will read the report not our Findings.

PANEL MEMBER GLANTZ: That's true. Never mind. I rescind my suggestion.

CHAIRPERSON FROINES: The hyperbole is over the top, I thought.

PANEL MEMBER FRIEDMAN: Well, just a clarification. You won't see the minutes until after the July 8th meeting; is that right?

CHAIRPERSON FROINES: Yeah.

PANEL MEMBER FRIEDMAN: So you probably need a copy of the sentence that I said, because it's only in the

minutes.

CHAIRPERSON FROINES: I'm expecting to get that from you, to get from Paul what he's written, to get Kathy what she's written. I have notes. Jim has notes, and we think we can put this together.

PANEL MEMBER HAMMOND: We send this to you?

CHAIRPERSON FROINES: Yes.

PANEL MEMBER FRIEDMAN: Can we see, because I will be gone the week -- it ends on July 8 and will not be able to come to the meeting, would it possible to see the revised Findings before -- get them next week some time?

CHAIRPERSON FROINES: Well, I have to be in New York until Thursday, so it's going to be tight, but I'll try.

PANEL MEMBER FRIEDMAN: Other wise, I may not be able to respond.

CHAIRPERSON FROINES: Well, I think the answer is yes, but it could be a little tight. So I need a --

So I need a motion.

PANEL MEMBER BLANC: I'd like to make a motion that the Findings, as proposed, subject to editing consistent with the discussion we have just had, and subject to review and ascent of the Panel members be accepted.

PANEL MEMBER BYUS: I'll second the motion.

CHAIRPERSON FROINES: Is there further discussion?

All in favor?

(Hands raised.)

CHAIRPERSON FROINES: The vote is unanimous.

This is when Paul usually makes a motion to close, but we're not going to do that quite yet. The administrative -- consideration of administrative issues. I just wanted to raise a couple of questions, a couple of points.

First, as everybody here knows we're taking up sulfuryl fluoride as a pesticide at the July meeting. And Craig has been the lead and Roger has been the lead on the compound, and they have put in a lot of time and effort on it. And so the one thing I wanted to say about that is this is the first time we've taken up a TAC with the new director of DPR, Mary-Ann Warmerdam.

So please, everybody, I know it's only 2 weeks away and Paul's not going to be there. Gary is not going to be there. So the burden is going to fall on a smaller number of people. So please, please, please work at reviewing the document beforehand. Clearly, we want to establish a strong positive relationship with the new director to the degree that we're able to. And so that's one thing.

The second thing is I wanted to raise a question about what would the Panel want to do with respect to how soon before a meeting do you want to receive the document for review. For example, you had less than a month slightly less than a month for the sulfuryl fluoride document. And so Jim and spent a fair amount of time talking about the issue of how much advanced notice should the Panel have on various documents. It's your call.

PANEL MEMBER BLANC: I thought it was sufficient. I think that if you got it 2 months in advance, what would happen is people would wait till some time closer to the event. I don't want to say how close to the event.

PANEL MEMBER LANDOLPH: Or worse, they'd lose it in the piles of paper.

PANEL MEMBER BLANC: I thought, you know, what was done this time was appropriate.

CHAIRPERSON FROINES: So the policy for the Panel would be a 1-month lead time.

PANEL MEMBER BLANC: It would be preferable. It doesn't need to be longer. And there may be situations in which it's less, but I don't want it to be -- I think the Chair should use some discretion.

CHAIRPERSON FROINES: I think that what's happened is that DPR anticipates bringing a certain number of documents to us, so our workload is going to increase

presumably with a question mark.

PANEL MEMBER BLANC: Well, let's just see if that happens, and we can comment on it. That should be our only problem.

CHAIRPERSON FROINES: And the third item, an administrative item, is that we want -- we have been all sent a priority list of the 10 highest priority chemicals that DPR expects to take up. And so we're going to have -- at one meeting in the future, we're going to be discussing those priority chemicals. Now, I'm assuming that everybody has that list of 10 priorities, right?

PANEL MEMBER ATKINSON: I may have it, but I haven't noticed it.

PANEL MEMBER BLANC: I think that would have to be re-sent where we get -- you're not saying it's going to be discussed at the next meeting?

CHAIRPERSON FROINES: No. It's definitely not going to be discussed at the next meeting.

PANEL MEMBER BLANC: So I would say that one month prior to the meeting in which you think that's going to be discussed you should re-send it.

CHAIRPERSON FROINES: Okay. Jim, you got that?

MR. BEHRMANN: Yes.

CHAIRPERSON FROINES: We'll re-send it. And we'll also send, I think, the 1996 document on

prioritization for you to look at in comparison to what has been spent now, because what we've got now is dramatically different than what we've had in the past.

And the other thing that the Panel should know, in contrast to the relationship with OEHHA and ARB, the prioritization approach and the prioritization of chemicals are not being sent to us for us to review as a panel with a subsequent approval. They're basically sent to the Panel, and each panel member is theoretically to respond as an individual.

And as far as I'm concerned, that's completely at odds with our approach with ARB and with OEHHA in the past. And it's actually at odds with what's happened with DPR in the past, and that -- so that's an issue for discussion at some future meeting.

Stan.

PANEL MEMBER GLANTZ: Well, you know, that's very interesting to note, because when I got that letter, I couldn't quite figure out why it was being sent to me, since it wasn't an agenda item before the Panel. And I actually think that you should communicate to DPR that it's just not appropriate for them to be polling the Panel as individuals.

I mean, there's a lot that comes out of the discussions at the meetings. And I think if they would

like our input on prioritization, which I think they should want, that should be brought before the Panel as an agenda item, and the Panel should respond as the Panel not individual members respond.

CHAIRPERSON FROINES: Well, as you may remember, when Paul Helliker said "Hello" "Goodbye" to us some time ago, we sent a letter that actually stated that in that letter. And I asked Mary-Ann if she would review the letter to Helliker so she'd be aware of some of the issues. So actually she's on notice that that is an issue, and we can follow-up with another communication to say, the panel considers it inappropriate that we don't take it up as a. --

PANEL MEMBER BLANC: Well, can I ask legal counsel to comment on whether it's not only inappropriate but if it's legal?

CHAIRPERSON FROINES: The counsel is not here.

PANEL MEMBER BLANC: Yes, he is.

PANEL MEMBER BYUS: He just moved. He's hiding.

PANEL MEMBER BLANC: He's with ARB, so he can't -- so do we have counsel that's --

CHAIRPERSON FROINES: I can answer the question. There is no legal requirement that they do so.

PANEL MEMBER BLANC: No legal requirement that they consult with the Board as a whole, but is it illegal

for them to try to consult with us one on one?

PANEL MEMBER HAMMOND: Who are we one on one? Do we exist one on one? I mean, we exist as a panel.

PANEL MEMBER BLANC: But they're writing to us as members of the Panel ex officio to comment in our role as members of the Panel individually.

PANEL MEMBER GLANTZ: I don't think that's appropriate.

PANEL MEMBER HAMMOND: I don't think that the Panel is more than the sum of its parts.

PANEL MEMBER BLANC: I'm not disagreeing with any of that. I'm not disagreeing it's inappropriate. My question is not only is it inappropriate but in fact is it illegal?

PANEL MEMBER GLANTZ: I don't think it's illegal. I mean, they have a right to ask anybody they want.

CHAIRPERSON FROINES: Kirk, do you know the answer to that question?

ARB SENIOR STAFF COUNSEL OLIVER: I don't believe I'm familiar enough with the situation to be able to comment on that.

CHAIRPERSON FROINES: Well, I can tell you what I know, which is that OEHHA is required under the 2588 legislation to have us approve their documents as they develop them. DPR does not have that requirement, and so

therefore they're not required to bring the prioritization issues to us as a panel. Now, we can argue that the law says that they are to take a public health approach to developing documents, and that it would appear appropriate for them to do so, but there's no legal requirement that they have to.

PANEL MEMBER BLANC: I understand that part.

CHAIRPERSON FROINES: I understand.

PANEL MEMBER FRIEDMAN: Well, there are 2 points. First of all, when OEHHA presents their document they often consult with us individually if we have expertise in the area. And if that's all that DPR is doing, I don't see a problem with that, if they eventually want to then bring, after receiving some comments, bring it to the Panel.

On the other hand, I do feel whether it's legal or not that we should tell them that we really want to react to this officially as a panel that we don't want to do it as individuals.

CHAIRPERSON FROINES: Joe.

PANEL MEMBER LANDOLPH: Yeah, I agree with Gary completely. But I don't want to alienate them either. We want to encourage them to come to us, but tell them just that the members feel that we would prefer to be approached simultaneously as a panel.

CHAIRPERSON FROINES: Do you remember that what's happened is we were working with them on guidelines for Acetylcholinesterase Inhibitors. We are working with them on exposure assessment methodologies. Craig proposed some modeling approaches at one point for example. We are working with them on risk assessment methodologies, so we -- and we were working with them on prioritization.

And when Helliker pulled back, he pulled back on all 4 of those. All of those are at this moment dead. And so there has been a tremendous seat change, if you will, in terms of the number of items we are working with them collaboratively on in the current situation.

PANEL MEMBER BLANC: Can I ask a technical question. If the legal counsel for the ARB is not the counsel to whom one would go for advice on our legal relationship with the DPR who is the legal counsel to which we would go for opinion? Is there a higher counsel in CalEPA as a whole?

CHAIRPERSON FROINES: I assume that we could go to Alan Lloyd, the Secretary for CalEPA and his legal counsel would advise.

PANEL MEMBER BLANC: And has that legal counsel up to date advised us in terms of our global relations with DPR?

CHAIRPERSON FROINES: No.

PANEL MEMBER BLANC: Well, I would certainly like to offer you the option within your discretion as Chair, should you wish to do so, to seek that counsel without requiring you to do so.

CHAIRPERSON FROINES: Does everybody agree with that?

PANEL MEMBER FRIEDMAN: Well, I just -- whether it's legal, I still think that we could still request that -- I'm not really worried whether -- why is it so important whether it's legal or not, I mean?

PANEL MEMBER BLANC: Well, first of all, I don't want to break the law even if I -- you know, whatever my opinion might be about it being appropriate, not appropriate, good policy, not good policy. So that's one thing.

Secondly, if, in fact, the EPA counsel not only says yes, they can't come to you one by one and that my review of the statute is that they do have to come to you as a group, which is not your understanding currently, but not based on legal discussions currently with counsel for EPA, that would certainly change things. And I'm not -- I think I'm not overly concerned on how -- I'm not worried that doing that would somehow, you know, poison the well. I think that only by being rigorous and business like can we really move forward effectively in the current climate.

CHAIRPERSON FROINES: There's one piece of information that you don't know that is worth mentioning. And that is that I volunteered to meet with the DPR Director after she was appointed so we could talk about these issues. And then I talked to Alan Lloyd, the Secretary of CalEPA, and said what would be a good idea would be for you to join that discussion. So we agreed that Mary-Ann and I would have an hour discussion just the 2 of us on these issues, and then Alan would come in and we would have a subsequent discussion on where we were, so that he could ameliorate differences and be helpful and what have you.

So at this point, it's my expectation that some time in July, Alan and Mary-Ann and I are going to meet to talk specifically about these particular issues of collaboration, and the future of the process.

PANEL MEMBER BLANC: But they're not going to consult, which is all the more important, on that before that time you have a sense of what the legal is.

CHAIRPERSON FROINES: But we do anticipate -- in the letter from Tobi Jones she did say that we should anticipate 2 more pesticides this year, chloropicrin and I forget the other one.

MR. BEHRMANN: Methidathion.

CHAIRPERSON FROINES: Now, you know, she had to

go through Senate confirmation, and we'll see what happens once we're back to normal. But our anticipation is that we have 2 DPR pesticides coming down the road some time this year. And chloropicrin is going to be a big ticket item. I don't know the other ones.

So are we finished?

PANEL MEMBER HAMMOND: I'm move to adjourn.

CHAIRPERSON FROINES: Do we have a second?

PANEL MEMBER ATKINSON: Second.

CHAIRPERSON FROINES: We're gone.

That's adjourned for the transcript.

All in favor?

(Ayes.)

CHAIRPERSON FROINES: We are adjourned.

(Thereupon the California Air Resources Board, Scientific Review Panel meeting adjourned at 3:30 p.m.)

CERTIFICATE OF REPORTER

I, JAMES F. PETERS, a Certified Shorthand Reporter of the State of California, and Registered Professional Reporter, do hereby certify:

That I am a disinterested person herein; that the foregoing California Air Resources Board, Scientific Review Panel meeting was reported in shorthand by me, James F. Peters, a Certified Shorthand Reporter of the State of California, 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 in any way interested in the outcome of said meeting.

IN WITNESS WHEREOF, I have hereunto set my hand this 12th day of July, 2005.

JAMES F. PETERS, CSR, RPR
Certified Shorthand Reporter
License No. 10063