HEARING

BEFORE THE

CALIFORNIA ENERGY RESOURCES CONSERVATION

AND DEVELOPMENT COMMISSION

In the Matter of:	)	
	)	
Application for Certification	)	Docket No.
for the Metcalf Energy Center	)	99-AFC-3
(Calpine Corporation and	)	
Bechtel Enterprises, Inc.)	)	
_____	)	

COYOTE GRANGE HALL

412 MONTEREY ROAD

COYOTE, CALIFORNIA

THURSDAY, MARCH 1, 2001

2:05 p.m.

Reported by:
James Ramos
Contract No. 170-99-001

COMMITTEE MEMBERS PRESENT

Robert A. Laurie, Commissioner, Presiding Member

Gary Fay, Hearing Officer

STAFF PRESENT

Dick Ratliff

Kerry Willis

Paul C. Richins, Jr.

PUBLIC ADVISER

Roberta Mendonca

APPLICANT

Jeffery D. Harris, Attorney,
Ellison, Schneider and Harris
for Calpine Corporation/Bechtel Enterprises

Kenneth E. Abreu, Development Manager
Calpine Corporation
Metcalf Energy Center

John L. Carrier, Senior Project Manager
CH2MHILL

Steve DeYoung
Calpine Corporation/Bechtel Enterprises

Gary Rubenstein
Sierra Research, Calpine Corporation

INTERVENORS

Scott Scholz
South San Jose.com

William J. Garbett
T.H.E.P.U.B.L.I.C.

INTERVENORS

Issa Ajlouny

Jeffrey Wade

Michael Boyd

Robert Williams

Elizabeth Cord
Steven Nelson
Philip Mitchell
Suzanna Wong
Santa Teresa Citizens Action Group

Helene Leckman Leichter, City Attorney
Steve Tate, Council Member
City of Morgan Hill

Roger Beers, Attorney
Kelly R. Tilton, Attorney
Coyote Valley Research Park

ALSO PRESENT

Mollie Dent
City of San Jose

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P R O C E E D I N G S

2:05 p.m.

HEARING OFFICER FAY: Good afternoon. I'm Gary Fay, the Hearing Officer, or the stand-in Hearing Officer in the Metcalf Energy Center application for certification.

To my left is Commissioner Robert Laurie, the Presiding Member of the Committee that will be making a recommendation to the Commission on the case.

Today we are continuing with the evidentiary hearing on air quality and public health, which we began yesterday.

And I just have a few preliminary matters. First of all, I'd just like to put on the record that just before the hearing started Gary Rubenstein, who is a consultant to the applicant, took me in his car just to look at the site from the railroad tracks. And I just want to note that. We had no substantive conversation about the case, except for where the plant was proposed to be located and that sort of thing.

In addition, I would like to hear any comments that people have about the briefing schedule that we proposed yesterday so that we can

understand your concerns and comments.

And I can just --

MR. WILLIAMS: Mr. Fay, could you briefly repeat that schedule for those who weren't here yesterday?

HEARING OFFICER FAY: Okay. I believe what we suggested was that briefs, which are typically filed to sort of wrap up somebody's argument and tie references to the record into the points that they wish to emphasize, would be filed opening briefs on the topics contained in groups 1 and 2 would be filed on March 23rd.

And then reply briefs to those topics would be filed one week later on March 30th. And at the same time, opening briefs would be due on group 3 topics.

And then on April 6th reply briefs would be due on the group 3 topics.

MR. WILLIAMS: And could you indicate when the hearing on override is planned?

HEARING OFFICER FAY: That is going to be basically a policy hearing, not an evidentiary hearing. And what we discussed yesterday was that it's planned for March 16th. And there will still be a hearing for public comment on March 23rd.

Now, I understand from Paul Richins that the County is going to have an energy summit on March 16th, but that they plan to conclude about 5:00. And Commissioner Laurie last night discussed starting our hearing at approximately 7:00. So I don't think there'd be a conflict there.

Any other comments on the briefing schedule? Yes, Mr. Beers?

MR. BEERS: It did seem to me preferable to have briefs that would consider all of the issues together. But that's merely a preference, and I defer to what I understood Commissioner Laurie's point to be, that it would be more useful for the Commission to have them divided.

But the one thing that does seem to me to be troublesome about the schedule is the overlap between when the reply brief on group 1 and 2 is due, and the opening brief on group 3. And I think that imposes a fair burden on people to have to get two separate sets of briefs in.

If you were getting in a brief that covered both sets of issues that would make sense. But in this case you have to really file two separate briefs, because one of them is a reply

brief and the other one is an opening brief.

So that's the one comment I have.

HEARING OFFICER FAY: Yes, and that is a difficulty. Anybody have a suggestion how we can address that?

INTERVENOR: Excuse me?

HEARING OFFICER FAY: The briefing schedule, we're getting reaction to the briefing schedule.

Mr. Beers is concerned with the fact that what we proposed would have on March 30th parties filing a reply brief on all the topics in groups 1 and 2, and at the same time, on the same day, filing their opening briefs on all the topics in group 3.

So that's two jobs to do for filing on that one day.

PRESIDING MEMBER LAURIE: Go off the record.

(Brief recess.)

HEARING OFFICER FAY: While we were off the record we had a discussion about briefs. And I received from the various parties their opinions on how the briefing order should be crafted.

And I'd like to ask if there are any

other preliminary matters before we return to the cross-examination of the applicant's air quality witnesses.

Ms. Cord.

MS. CORD: I just had one question. I think you said yesterday before I came in something about a public comment date, March 22nd, is that right?

HEARING OFFICER FAY: 23rd.

MS. CORD: 23rd, that's a Friday?

HEARING OFFICER FAY: Yes.

MS. CORD: And the hours of that hearing?

HEARING OFFICER FAY: Do you have a recommendation? It hasn't been noticed yet.

MS. CORD: Absolutely. We're a working neighborhood. During the daytime is hard to impossible for most of our neighbors to attend.

HEARING OFFICER FAY: So, an evening hearing would be preferable?

MS. CORD: Absolutely, starting at 5:00 or 6:00 or something like that.

PRESIDING MEMBER LAURIE: That's my intent.

HEARING OFFICER FAY: Okay.

MS. CORD: I didn't hear you.

PRESIDING MEMBER LAURIE: That is my intention.

MS. CORD: Good, okay. I didn't know if that had been brought up. Thank you.

HEARING OFFICER FAY: Any other preliminary matters? Issa.

MR. AJLOUNY: How do I say this? Public comments, and if you notice these hearings that we've been having, we haven't asked, as a group, to have the neighborhood show up and have comments and basically prolong the hearings. We're trying to be respectful of the technical nature of this, get to the facts so the Commissioners can make their decision.

And we're hoping you recognize that we haven't done that. And we also are going as far as when public comments, we're really not going to ask for hundreds of people to show up.

We hope from the record, from the City Council meeting, I know the meetings at the gym, there's hundreds and hundreds of people concerned. And we really appreciate the comment you mentioned yesterday about it doesn't matter if there's ten on one side and 100 on the other side.

So, I want you to know, as a community we respect that. And you probably will not see a large turnout from our side of the house.

PRESIDING MEMBER LAURIE: Issa, and I respect that, as well. And I would not take the fact that there is not 1000 people in the auditorium to mean nobody cares.

The Committee has evidence. And one piece of evidence is that 7000 people have signed a petition in opposition. Another piece of evidence is that the City Council, your representatives, voted against the project. Whatever that evidence says, that is the evidence.

And so the Committee is not going to construe any lack of full attendance at this meeting to in any way indicate that the public is not concerned.

And I can't, and I won't, tell you not to tell your folks to show up and express their views. I do acknowledge, however, that you folks do represent groups. And that you all have done an extraordinary job of expressing the views of those groups.

As Mr. Fay indicated, our decision is not supposed to be based on the fact that 51

percent want it and 49 don't, or the other way around.

So the purpose of this meeting is simply to allow any member of the public who desires to say something, to give them the opportunity to say something.

HEARING OFFICER FAY: You mean on the 23rd?

PRESIDING MEMBER LAURIE: Yes.

MR. AJLOUNY: Yeah, and we respect that. And I guess we're trying to give you an indication there probably won't be a huge crowd. We can't stop people from coming. People are going to know about it. It's going to be in the paper. But it won't be us encouraging and saying you got to show up, like we've done before.

So, hopefully, in turn, maybe you might give us two or three extra minutes in questioning?

(Laughter.)

HEARING OFFICER FAY: And I won't forget that brownie that you brought me.

(Laughter.)

HEARING OFFICER FAY: All right. Any other preliminary comments? Then I'd like to take formal appearances at this time. Mr. Harris.

Introductions.

MR. HARRIS: Yes, to my right is Mr. Ken Abreu, who is the Project Manager for the Calpine/ Bechtel joint venture. I'm Jeff Harris. And to my left is Mr. Steve DeYoung, who is the Environmental Project Manager for the Calpine/ Bechtel joint venture. And to his left is Mr. John Carrier with CH2MHILL.

HEARING OFFICER FAY: Thank you. Staff.

MR. RATLIFF: I'm Dick Ratliff, counsel for the staff. On my left is Kerry Willis, also counsel for the staff. To my right is Mike Ringer, our public health expert; Magdy Badr, our air quality expert; Steve Hill from the Bay Area District. And on the bench is Paul Richins, Project Manager.

HEARING OFFICER FAY: Thank you. Is the City of San Jose represented? All right. City of Morgan Hill?

MS. LEICHTER: Yes, Helene Leichter, City Attorney, City of Morgan Hill. And sitting to my left is Council Member Steve Tate. Did you want formal appearances for our witnesses at this time? Or wait until we call them?

HEARING OFFICER FAY: Why don't you just

introduce them.

MS. LEICHTER: Yes, also appearing as direct witnesses for us will be Professors Chih-Pei Chang, Professor Qing Wang and Professor Robert Haney, all professors at the United States Naval Post Graduate School in Monterey, California.

HEARING OFFICER FAY: Thank you. CVRP?

MR. BEERS: Roger Beers representing CVRP. And with me is Kelly Tilton of Grueneich Resource Advocates, also representing CVRP. And also I'm accompanied by Steven Radis who will appear as a witness.

HEARING OFFICER FAY: Thank you. And the Racquet Club, are they present today? STCAG?

MS. CORD: Elizabeth Cord, Santa Teresa Citizen Action Group.

HEARING OFFICER FAY: Thank you. And Issa.

MR. AJLOUNY: You got anybody else with you?

MS. CORD: Oh, I do, thank you. Assisting us in preparing for today's testimony are Mr. Phil Mitchell, seated across from me. And Mr. Steven Nelson seated next to him. Thank you.

MR. AJLOUNY: Issa Ajlouny, local resident, intervenor.

HEARING OFFICER FAY: Thank you. CARE? Mr. Williams.

MR. WILLIAMS: Yes. Robert Williams, local resident, intervenor.

HEARING OFFICER FAY: Thank you. Mr. Garbett.

MR. GARBETT: Yes, William Garbett, representing the public.

HEARING OFFICER FAY: Mr. Wade.

MR. WADE: Jeff Wade, intervenor.

HEARING OFFICER FAY: Mr. Scholz.

MR. SCHOLZ: Scott Scholz, local resident, intervenor.

HEARING OFFICER FAY: All right. I believe that's all the parties that identified that they'd be participating. Is there more? Yes?

MS. CORD: I'm sorry, but I failed to introduce our witness today who is Dr. Suzanna Wong.

HEARING OFFICER FAY: Okay.

MS. CORD: Sitting to the back. Thank you.

HEARING OFFICER FAY: All right, thanks very much. I believe when we closed Mr. Wade and Mr. Scholz had completed their cross-examination. Mr. Garbett, are you prepared to cross-examine the applicant's witnesses on air quality and public health?

CROSS-EXAMINATION

BY MR. GARBETT:

Q The first question I have is that you have a power plant that you want to place in, and what happens -- is this, in your opinion, a clean power plant, relatively speaking?

MR. RUBENSTEIN: Yes, I've compared the emissions from this plant on a pound per megawatt hour basis with those of a number of other plants licensed or proposed to be licensed in California, and I believe it is one of the cleanest power plants proposed for the state.

MR. GARBETT: That is as opposed to what you might call the peaking plants, which operate for short periods of time, is that correct?

MR. RUBENSTEIN: Peaking plants can use a variety of different technologies --

MR. GARBETT: Yes, --

MR. RUBENSTEIN: -- and some of them can

have emissions that are close to this plant. Most of them are a lot dirtier.

MR. GARBETT: Okay. Being with the CEC hearings sort of in the beginning where the CEC put a plant down in the Hunters Point/Potrero area of San Francisco, a peaking plant, that would operate intermittently.

And it was quite dirty compared to the technology you have now. Would that be a fair statement of an older turbine powered plant?

MR. RUBENSTEIN: I'm not sure which plant you're talking about. One that's physically there right now, or one that was proposed for Hunters Point?

MR. GARBETT: One that was put there a decade or better ago, almost a decade.

MR. RUBENSTEIN: I'm going to have to assume you're talking about the peaking turbines that are at Hunters Point and --

MR. GARBETT: Yes.

MR. RUBENSTEIN: -- yes, those would be much dirtier on a pounds per megawatt hour basis. And on a pounds per hour basis, I suspect, than this plant.

MR. GARBETT: On an annual basis, since

these operate, shall we say, just as peakers, the total pollutants per year annually, would they be similar to the output of a clean plant such as Calpine Metcalf operating more or less all the time?

MR. RUBENSTEIN: That would depend completely on three factors. One is what type of technology was being used for the peaker. Whether it was a reciprocating engine, like a diesel engine or a gas turbine.

It would also depend on what fuel was used in the peaker; whether that was oil or gas. It would depend on what type of emission controls was being used on the peaker.

And it depends on how many hours per year you're assuming it would run as a peaker; 100 hours per year; 500 hours per year; 2000 hours per year.

And without knowing any of those, I really can't answer your question.

MR. GARBETT: Okay. But basically a peaking plant operating intermittently might put out the same amount of pollutants as a Calpine Metcalf plant operating year-long is --

MR. RUBENSTEIN: That could easily be

the case.

MR. GARBETT: -- assumption? Okay. On PM10 emissions that you have, you have them quantified rather carefully in your testimony. But the question I have is of those PM10 emissions you have quantified you might say soot and a number of other things, acrolein, that irritates the eyes as other emissions.

But with the PM10 emissions how much of that is attributable to the cooling towers percentagewise, or just as a rough guess? I'm not down for double-digit precision here.

MR. RUBENSTEIN: First let me clarify that I don't think we've ever referred to the PM10 from the plants as being soot. Also let me clarify that acrolein is not a particle, it's a gas.

MR. GARBETT: I understand that.

MR. RUBENSTEIN: Okay. Of the roughly 91 tons per year of PM10 emissions from this plant, about 8 tons per year or a little less than 10 percent come from the cooling tower.

MR. GARBETT: Okay. Of those emissions from the cooling tower, and I believe you're using recycling water in that cooling tower, is that

correct?

MR. RUBENSTEIN: That's right. Recycled water is used in the tower.

MR. GARBETT: Recycled water is basically tertiary treated sewer water. And what happens is it has various constituents, such as bacteria, viruses, preons, amoebas, various other types of what you might call organic or living organisms of some type that may or may not be killed, attenuated, gene-split ready for splicing, or other factors that where they may still be present.

Are these items also part of this PM10 emissions that are coming from the cooling tower?

MR. RUBENSTEIN: Actually you've just shifted from my area of expertise off to Mr. Lowe's, and I think he's searching for some notes and then he will answer your question.

MR. LOWE: There were quite a number of points that you raised in your statement there. Can you sum them up again, or pose the question to me again, please?

MR. GARBETT: Okay. Let me just sort of split my question into what I call the amount of PM10 which are what you might call pathogenic

material, as opposed to solid like alkaline or other solid material.

What is the quote percentage of your PM10 that would be attributed to any pathogen such as bacteria, viruses, preons, amoebas, attenuated and/or killed or living organisms?

MR. LOWE: I don't know what the percentage would be, but if there were any it would be very small. You need to be aware that the recycled water is going to be treated.

In fact, the Department of Health Services is proposing regulations to require that water from cooling towers be treated so that there's 99.999, or a several thousandfold reduction in any potential pathogen concentrations.

It's unlikely that there would be a pathogen risk associated with recycled water used in the cooling tower.

MR. GARBETT: Okay. Is it true that your risk analysis is done on one in a million, then, as to being significant, then? Which is a different standard than what you were just citing.

MR. LOWE: I'm looking at page 99 of the FSA, the public health section. And the

significance level cited there for individual lifetime cancer risk for chemical carcinogens is one in 100,000.

MR. GARBETT: Okay.

MR. LOWE: And as that's for chemicals, has nothing to do with pathogens.

MR. GARBETT: Okay. Is there other standards such as PM10 that the EPA uses, such as PM2.5?

MR. RUBENSTEIN: The federal EPA has adopted a PM2.5 air quality standard which is currently still suspended pending final resolution of litigation on that standard. But they have proposed and adopted a standard for those smaller particles, yes.

MR. GARBETT: The other day we had a supreme court decision regarding that economics does not figure into the particular plans or standards the EPA has produced. It is just the protection of public health is the main issue.

Would that be a fair statement to say that we have a decision?

MR. RUBENSTEIN: I haven't had a chance to read the decision, but that's my understanding of the substance of it, yes.

MR. GARBETT: In general. I have not had a chance to read it, myself, either.

Of the PM10 emissions that are being produced, are not most, if not all, of the PM10 emissions actually below 3 microns or in the category of the PM2.5 almost exclusively?

MR. RUBENSTEIN: In the case of the combustion turbines my judgment is that all of the combustion particulates are going to be below 2.5 microns in size.

In the case of the cooling towers, most but not all of the particulates are below 2.5 microns in size.

MR. GARBETT: Okay. In the Hunters Point area they had power plants working there for many decades. And basically there had not been a significant increase in cancer rates in the area that was statistically significant. Until a time in the '80s where a turbine peaker was put in that area by the CEC.

Most recently there has been in newspapers of general circulation articles about where the cancer rate has risen astronomically in the Hunters Point/Potrero area without any significant affect upon statistics. In plain

words, it is not a -- abnormality, but an actual increase in true cancers in the area.

Are you familiar with what has been in the local papers?

MR. RUBENSTEIN: No, I'm not. I'm also not aware of any gas turbines approved by the Energy Commission, peaker or otherwise, for the Hunters Point plant in the 1980s.

MR. RATLIFF: And I would like to state for the record that that's because there aren't any.

HEARING OFFICER FAY: Mr. Garbett, could you move on to a different question.

MR. GARBETT: One of the greatest hazards for instance of small particles, for instance with asbestos, is they are generally the particles in asbestos that are below 3 microns and PM2.5 category.

With these small particles there is an attendant risk factor where, for instance, smokers have hundredfolds or thousandfold times increase in the susceptibility of cancer when they have particles of this size. Is that a correct statement or an innuendo?

MR. LOWE: I'm sorry, could --

MR. GARBETT: Yes.

MR. LOWE: -- could you repeat that, please?

MR. GARBETT: Do smokers have a higher risk when confronted with what you might call particles below the 3 micron, or 2.5 level, PM2.5 level, such as asbestos?

MR. LOWE: I'm not sure what asbestos has to do with it, because there is no asbestos emitted from the project.

MR. GARBETT: Okay, but the asbestos does have particles that are in the small category that basically have an attendant higher risk with smoking, is that correct?

MR. HARRIS: I'm going to object on the --

MR. GARBETT: Okay.

MR. HARRIS: -- smoking --

HEARING OFFICER FAY: I'm going to sustain the objection as to asbestos, because --

MR. GARBETT: I'm trying to bring the relevance here.

HEARING OFFICER FAY: Well, okay, but there's no asbestos connected with the project, then it's not a relevant question.

MR. GARBETT: Well, I hate to say it, but the asbestos is naturally occurring. We do have serpentine soils in the area. So it is in the area. We have basically went on in --

HEARING OFFICER FAY: Okay, could you tie that into how the project will affect that?

MR. GARBETT: Basically on health hazards, the PM10 particles, are these the types that you will normally slough off in mucus or cough up, is that correct? The PM10 sized particles.

MR. LOWE: PM10 is the category that's known as inhalable. They're the type that can be inhaled into the lung.

MR. GARBETT: And they can also be coughed back out, is that also true?

MR. LOWE: Some of them can be, yes.

MR. GARBETT: With particles below PM2.5, are those the type that go into the lung that basically are not easily expelled?

MR. LOWE: That's correct.

MR. GARBETT: If you have these particles, the PM2.5, which is the majority of your emissions, that get in people's lungs, do you think that those people who are smokers who have

an increased risk of, for instance, cancer or other diseases as compared to those nonsmokers in the area, based upon, for instance, a similarity with asbestos particles?

MR. LOWE: I'm sorry, I'm not sure of the question you're trying to ask.

MR. GARBETT: Okay. Basically your plant will produce PM2.5 emissions, the majority of emissions. And they will be inhaled by local residents, for instance the same way as asbestos fibers are inhaled, the PM2.5 category.

Since asbestos has an increased hazard among smokers, will there be an increased hazard for smokers within the community based upon a --

MR. HARRIS: I'm going to object on the basis it's beyond the scope of his testimony, as it relates to smokers, I think, and asbestos.

HEARING OFFICER FAY: Let me cut through this. Forget about asbestos. I think you want to know if the emissions from the project will have an impact on smokers --

MR. GARBETT: Yes, greater than --

HEARING OFFICER FAY: Is that -- greater than nonsmokers?

MR. GARBETT: Yes.

HEARING OFFICER FAY: Okay, there's the question.

MR. LOWE: That's possible that particulate matter that smokers may be more sensitive to pulmonary effects, or effects to the lung from inhaling particulate matter. This factor is well recognized and it has been considered in developing air quality criteria for particulate matter.

MR. GARBETT: Okay. With the PM10 emissions, they will be thrust up in the air through your smoke stacks, is this correct?

MR. RUBENSTEIN: They will be emitted into the air, right.

MR. GARBETT: Okay, I'm going to use the magic I word, the inversion layers. With these inversion layers that we have, both what you might call the regular one that we have, and a secondary lower inversion area that may or may not, shall we say, be legally brought into this argument later on in testimony.

For instance, the stack velocity that the gases that have these PM10 particles, basically will have a factor on penetrating any inversion layer.

I realize that yesterday you didn't have any notes with you regarding as to what the thrust of your stacks are. Do you have those factors today?

MR. RUBENSTEIN: Actually I do. And I assume by thrust what you're really asking is how high does the plume go under --

MR. GARBETT: Yes.

MR. RUBENSTEIN: -- conditions? Under, the height of the plume will vary, the ultimate height of the plume will vary with wind speed and stability class. And there's a wide range. And I have just a couple of examples that I could present to you.

For A stability conditions, one meter per second, slow wind speeds. The final plume height would be approximately 3100 feet --

MR. GARBETT: Okay, thank you.

MR. RUBENSTEIN: -- above the stack base. Ranging at the low end to F stability, class 2.5 meters per second, wind speeds. And at that low end the final plume rise would be approximately 350, 360 feet.

MR. GARBETT: Okay, thank you.

MR. RUBENSTEIN: So that's the

approximate range.

MR. GARBETT: That's a wide range, and somewhere we'll probably find reality in plant operations.

MR. RUBENSTEIN: And there is a potential for yet lower plume rise levels of as low as 145, 150 feet --

MR. GARBETT: Top of the hill.

MR. RUBENSTEIN: -- about due to downwash conditions. And as I indicated yesterday, downwash conditions are the most severe condition affecting this plant.

MR. GARBETT: Okay. With the emissions from your stack what is going to be the ionic balance, in plain words are you going to have an excess of positive ions or negative ions?

MR. RUBENSTEIN: Could you be more specific? The ion balance where?

MR. GARBETT: Okay. As compared to neutral, for instance after a thunderstorm, for instance, you go and have an excess of ions that makes people feel good from the ozone that is generated sometimes by lightning strikes and other things.

MR. RUBENSTEIN: There is no ozone

emitted from the plant, and I'd have to go back to some college chemistry text books to make sure I understand exactly what you're asking, but I think the answer is that the stack is roughly neutral.

MR. GARBETT: Okay. With the air quality, because there might be problems with the ionic balance, is there any lightning protection engineering into the site?

MR. RUBENSTEIN: I think you've just wandered way past my field of expertise in terms of lightning protection for --

MR. GARBETT: Okay. Let me go and explain one of the alternative sites mentioned was the UTC site. UTC quite often fires rockets. But rather than firing them in the air, they do a static with the plume of the exhaust going up, and the rocket basically strapped to the ground.

As these firings are made where ionized gases go up, such as the burning of fossil fuels, like at Metcalf, they find out that they not only have what you might call primary strikes of lightning that is generated on clear days, but actually secondary strikes, for instance, at other sites that have explosive materials. And they've had to put in extensive protection network because

of that.

MR. RUBENSTEIN: Actually you've drifted now a little bit back to my area of expertise because I do have some understanding about pollution formation from rocket motor test stands.

The temperatures in those test stands are far higher than the temperatures you see in natural gas combustion. And to the extent that you have any ionization going on in the rocket motor exhaust, if you have it going on in a gas turbine combustors it lasts for literally milliseconds, and it's fully contained within the combustor.

So by the time you get to the atmosphere, as I said, there is no ionization of any kind. And there is no similarity whatsoever in terms of that effect between combustion of gas in a gas turbine and a rocket motor test stand.

MR. GARBETT: Okay. Have you, for instance, one of the things that you mentioned here yesterday was that you quite often see things on your backyard patio table, stuff that has settled out.

MR. RUBENSTEIN: Um-hum.

MR. GARBETT: Is that usually not just

merely gravity, but sometimes what you might call a static attraction by electricity or ionized particles where they may have an affinity for staying on your backyard patio table rather than just like rolling off to the ground with the first breeze?

MR. RUBENSTEIN: On a molecular level there is probably some affect like that. But largely it's gravity, particles falling down.

HEARING OFFICER FAY: Mr. Garbett, is this leading to something relevant?

MR. GARBETT: Yes.

HEARING OFFICER FAY: Because we're not here for a general science discussion.

MR. GARBETT: I know, I'm putting this together real fast.

(Laughter.)

MR. AJLOUNY: I'm learning a lot.

HEARING OFFICER FAY: Learning a whole lot.

MR. GARBETT: With the PM10 particles that you are emitting would any electrostatic precipitation help reduce the amount of PM10?

MR. RUBENSTEIN: No.

MR. GARBETT: Okay. With the emissions

from the stacks would a stack that, shall we say, is a flared stack, venturi shaped to increase the exit velocity help with for instance penetrating any inversion layers by higher exhaust velocity?

MR. RUBENSTEIN: It might. And actually when we were reviewing different architectural treatments for the plant in the fall of 1999 we did take a look at, not a venturi, but a narrowing of the stack, what we call a flare tip, in order to enhance the velocity.

And as I've said several times the worst case meteorological conditions for this plant are downwash conditions that cause the plume to impact on Tulare Hill.

We found that narrowing of the stack did not significantly reduce the peak concentrations. It did reduce them somewhat, but not enough to compensate for the adverse effects in terms of overall efficiency.

MR. GARBETT: What I'm talking about is not tucking in at the top of the stack, but actually flaring it outwards. For instance, like a rocket, an exhaust nozzle on a rocket motor, for instance, or the exhausts that are used, for instance, for cooling towers on nuclear power

plants, as a common display of these types of exit mechanisms.

MR. RUBENSTEIN: I think the designs you're talking about are for natural draft cooling towers. Forced draft cooling towers don't have that kind of design because the extra buoyant effect you get from that is literally trivial compared to the mechanical force that's used. And the same would certainly be true in the exhaust of the gas turbine.

So the only way that you're going to increase the velocity in the exhaust stack of a turbine is not going to be through some kind of a venturi mechanism, but it's going to be through some constriction.

MR. GARBETT: Yeah, the Burnelli principle there is very commonly known, but I think this is a plant efficiency that basically would be minor cost that might help out. And it may improve the air quality, particularly on penetrating any --

HEARING OFFICER FAY: Mr. Garbett, is there a question? It's not your time to testify.

MR. GARBETT: Okay, I know. With the PM10 emissions, because they have a tendency to

stick, we have what we call a maintenance -- sometimes. I notice the hall here has a new roof on it now, but also the ceiling is painted white.

With the operation of the Calpine Metcalf plant, the PM10 emissions that are emitted, what would be the reduction in time of the whiteness of the ceiling where it might have to be painted more often to maintain its appearance?

MR. RUBENSTEIN: I don't think there would be any, and the reason actually lies in some of the questions you asked earlier. When particles are as small as the combustion particulates are from the plant, under 2.5 microns in size, those particles literally behave like a gas. The deposition velocities are very very low and consequently, for the most part, they stay into the air. It's the larger particles that tend to settle out.

MR. GARBETT: Okay. Well, if they do stick to surfaces such as your patio table and other such things, and by that same token they might stick to walls.

MR. RUBENSTEIN: Actually I never said that emissions from the power plant would stick to

the patio table.

MR. GARBETT: Well, yeah, okay, you said you see emissions, period. Or you see debris on your table.

MR. RUBENSTEIN: Yes.

MR. GARBETT: Okay. The nexus was there whether you meant it to be or not.

MR. RUBENSTEIN: I certainly did not mean it.

MR. GARBETT: Okay. If, for instance, these particles did stick and dull the appearance or color of areas, have you computed any increase in VOCs for repainting by local residents of their homes?

MR. RUBENSTEIN: No.

MR. GARBETT: In the startup and the shutdown, using the Asarsi catalyst, is there a more significant amount of ammonia slip than in normal operation?

MR. RUBENSTEIN: There is that potential. I've never seen any data to indicate that one way or another.

However, there are, during startup emissions you have enough residence time and certainly enough NOx emissions that I would expect

ammonia slip to be very small because there's plenty of time for the reactions to occur on the catalyst bed.

MR. GARBETT: With any ammonia slip would it be such that probably the first thing someone would do is either smell it or, for instance, express burning of the eyes similar to your acrolein?

MR. RUBENSTEIN: I can't imagine any operating mode, including startups and shutdowns, where you would have any detectable concentrations of ammonia at any location.

HEARING OFFICER FAY: Mr. Garbett.

MR. GARBETT: Yes.

HEARING OFFICER FAY: You were not here when we got --

MR. GARBETT: Yes, and this basically concluded my last question.

HEARING OFFICER FAY: Oh, okay. Thank you. Then that obviates my comment.

Now, Mr. Williams, you were not here when we identified times last time. But you are on the attachment --

MR. WILLIAMS: Yes, sir, if I could delay my questions till after some of the other

intervenors, I may have one or two.

HEARING OFFICER FAY: You are the last one.

MR. WILLIAMS: In that case, let me ask just a couple --

HEARING OFFICER FAY: I'm sorry, I'm just going to ask -- Ms. Leichter --

MS. LEICHTER: I'm sorry, Mr. Fay, I had to leave yesterday for a Council meeting. I wonder if I could beg the Commission's indulgence to have just three cross-examination questions for Mr. Rubenstein?

HEARING OFFICER FAY: Sure, we had you down for cross-examination questions.

MS. LEICHTER: Thank you.

HEARING OFFICER FAY: Well, would you like to wait, Mr. Williams, and go last?

MR. WILLIAMS: Yes, thank you.

HEARING OFFICER FAY: All right, why don't you go ahead.

MS. LEICHTER: Okay, I'll be zippy. I'm not sure who this question is appropriately directed to, but I was wondering --

HEARING OFFICER FAY: Hold on.

MR. HARRIS: Isn't this her second bite

of the apple? Did you have cross before?

MS. LEICHTER: Mr. Harris is correct.

HEARING OFFICER FAY: Oh, well, then I'm sorry. I misspoke.

MS. LEICHTER: Well, actually I would like to cross-examine them on something that -- a piece of evidence that transpired yesterday.

HEARING OFFICER FAY: Well, we're just giving each party one opportunity for cross.

MS. LEICHTER: It pertains directly to my witnesses' testimony.

MR. HARRIS: She has --

MS. LEICHTER: And the testimony yesterday.

MR. HARRIS: She's free to introduce it at that time through her witnesses, if it's relevant --

MS. LEICHTER: No, because --

HEARING OFFICER FAY: Yes, --

MS. LEICHTER: -- I think the applicant has something to do with this piece of evidence. And I'd like to ask them about it.

MR. HARRIS: Well, now we're in unfair surprise, because I have no idea what the evidence is. And so I'd --

MS. LEICHTER: It's an opinion letter in The San Jose Mercury News from the Bay Area Air Quality Management District, which directly attacks my witnesses' testimony.

MR. HARRIS: And they're here as witnesses as well, today, again.

HEARING OFFICER FAY: Yes. Just out of fairness to all the other parties you'll just have to deal with it on direct. And I think you'll have more control over the situation any --

MS. LEICHTER: On direct of my witness?

HEARING OFFICER FAY: If you want to discuss the letter --

MS. LEICHTER: I don't want to ask the contents of the letter. I would like to ask how it got in The San Jose Mercury News.

HEARING OFFICER FAY: Okay, well, --

MS. LEICHTER: And to see if these applicants had any knowledge of that.

HEARING OFFICER FAY: -- I'm sorry, we're not going to give you another bite at the apple, or any of the parties, for that matter. So we'll have to move to Mr. Williams.

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CROSS-EXAMINATION

BY MR. WILLIAMS:

Q Yes, sir, my first question relates to secondary PM10. What is your present estimate of the amount of secondary PM10 that will be discharged by the -- or formed by the release of ammonia from the plant?

MR. RUBENSTEIN: My judgment is that there's not going to be any significant additional secondary PM10 formed in the atmosphere associated with the ammonia from this plant.

That comes from the fact that we are already accounting for the secondary formation of nitrates from the oxides of nitrogen coming from the plant and the most likely substance of that nitrogen would combine with the NOx is ammonia.

And so I'm not sure that there would be some additional secondary formation of nitrates. There will be some small amount of sulfate formation that will occur from the trace amounts of sulfur and the natural gas.

MR. WILLIAMS: Okay, I have another question. What is your understanding of the role of the Bay Area Air Quality Management District? Are they a regulatory oversight agency?

MR. RUBENSTEIN: No, they're an agency that has primary responsibility for issuing air quality permits for projects within their jurisdiction. In addition, they are one of the two agencies that are responsible for air quality planning within the Bay Area.

MR. WILLIAMS: With respect to the letter to The San Jose Mercury, did you have any role in stimulating Ellen Garby to send the letter to the newspaper? Have you had discussions --

PRESIDING MEMBER LAURIE: Why is that relevant to the Committee, Mr. Williams? I don't believe it is.

MR. WILLIAMS: Thank you. I think it is relevant to the hearing, to the Committee, but --

PRESIDING MEMBER LAURIE: Well, if you would like to argue that it's relevant, fine. But explain to me why it's relevant to our decision making.

MR. WILLIAMS: Well, it does influence the public acceptance of the witnesses who are testifying. And I think --

HEARING OFFICER FAY: But the witnesses are not testifying for the benefit of the public. They're testifying for the benefit of the

Committee. And what is relevant is the record that's being made to assist the Committee in this case.

PRESIDING MEMBER LAURIE: If you disagree with the tactics that anybody takes in regards to public opinion, then you're free to take that up with them outside the confines of the hearing.

MS. LEICHTER: Commissioner Laurie, may I be indulged to make an argument why that it relevant to the Commission's determination?

PRESIDING MEMBER LAURIE: Yes.

MS. LEICHTER: Oh, sorry. If you look at the applicant's testimony they have stated that the Bay Area Air Quality Management District did, in fact, approve the model and other issues very germane to the air quality in this hearing.

And they have put forth the Bay Area Air Quality Management District as a neutral oversight body which has approved that.

This letter directly shows the bias of that Air Quality Management District, depending on how it got in The San Jose Mercury News, of course.

MR. WILLIAMS: Commissioner Laurie,

Mr. Fay, --

HEARING OFFICER FAY: Just a moment.

The --

MS. LEICHTER: I think it could be solved with a simple question as to --

HEARING OFFICER FAY: The District will be up here, and if they know anything about it you're welcome to ask them when you have your opportunity for cross-examination.

MS. LEICHTER: Thank you.

HEARING OFFICER FAY: Okay. Mr. Williams, was that all your cross-examination?

MR. WILLIAMS: Yes, thank you very much.

HEARING OFFICER FAY: Okay. Thank you.

MR. HARRIS: One redirect question.

HEARING OFFICER FAY: Mr. Harris, you have a question?

MR. HARRIS: I have one question for redirect if it's appropriate at this time.

HEARING OFFICER FAY: Okay.

REDIRECT EXAMINATION

BY MR. HARRIS:

Q And actually that one question is for Mr. Rubenstein. Mr. Rubenstein, there was some discussion during your testimony about Dr. Freeman

of Air Toxics, Ltd., and there was an email that was discussed as an attachment to CVRP's testimony. And then there's our November 17th letter.

There was some question as to whether those things are consistent or not. So, could you basically answer the question do you see those to be consistent statements?

MR. RUBENSTEIN: Yes. Dr. Freeman very definitely has concerns about the use of canisters for measuring emissions of organic compounds from stack sources.

And that's why Mr. Freeman expressed the broad opinion that he did in that email that was discussed earlier.

Mr. Freeman's opinion also is that it is appropriate to use canisters when there are no other alternatives under very specific conditions. And we reviewed the exact circumstances of the source that we were proposing to measure the acrolein from, the compound that we were proposing to use.

Dr. Freeman was actually quite candid in indicating that he's not sure he would trust anyone else to do the method correctly. And I

received the same opinion from James Loop at the Air Resources Board.

But Dr. Freeman indicated that for the type of source, with the type of gas characteristics, and the type of pollutant we were trying to measure that the approach that we used was the best technique available.

MR. HARRIS: Thank you. I have nothing further for the witness.

HEARING OFFICER FAY: All right. Now I'm sure the parties are familiar, but recross is limited in scope to the scope of the redirect. So you've just heard the single question on redirect.

Is there any party that wishes to conduct recross on that narrow subject? Just let me find out -- anybody else besides Ms. Cord? All right, Ms. Cord.

MS. CORD: I just had one question about Dr. Freeman you were just talking about.

RECROSS-EXAMINATION

BY MS. CORD:

Q Do you have anything from Dr. Freeman other than your recollection of what he said to you at some prior point?

MR. RUBENSTEIN: There are

contemporaneous emails that are presented in the attachment to CVRP's testimony. And beyond that I have Dr. Freeman's laboratory reports that are included in each of the source test reports. And that's all that I have.

MS. CORD: Let me just make sure I have this clear. The email where he says he would recommend not using the canister method, is that the -- that's one of the series of emails that you're talking about?

MR. RUBENSTEIN: That is one of the series of emails in that attachment, that's right.

MS. CORD: Okay, thank you.

HEARING OFFICER FAY: All right. Thank you. Then that concludes --

MR. HARRIS: I just wanted to move my documents in, please.

HEARING OFFICER FAY: Okay, yes, please.

MR. HARRIS: Okay, if I could I'll move those documents in. I've given the list out and I'll just read the numbers. Those would be exhibit 4, exhibit 110, 111, -- do you want me to go slower? Sorry.

HEARING OFFICER FAY: Yes, please.

MR. HARRIS: 111, 112 -- and they jump

around so I'll go slower -- 57, 88, 113, 114 --

HEARING OFFICER FAY: I just want to be sure I get all these.

MR. HARRIS: Okay.

HEARING OFFICER FAY: All right.

MR. HARRIS: They go back into order at this point, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, and they skip around again at this point, 135, exhibit 67, exhibit 3, exhibit 5, exhibit 20; back towards the back, 136, exhibit 16A, 16B, exhibit 60, exhibit 137, exhibit 134, and exhibit 138.

And those are the air quality and the public health exhibits that I'd like to move at this time.

HEARING OFFICER FAY: Is there objection?

MR. BEERS: No, but I've got additional recross examination.

HEARING OFFICER FAY: Within the scope of the redirect?

MR. BEERS: Yes.

HEARING OFFICER FAY: Okay. We will receive all those exhibits at this point into the

record.

And, Mr. Beers.

RECROSS-EXAMINATION

BY MR. BEERS:

Q You indicated in your redirect, Mr. Rubenstein, that you were aware that Dr. Freeman had concerns about the use of canisters for stacks, but that he had indicated specific approval for your usage of them in the circumstances of the testing you did in this case? Did I understand you correctly?

MR. RUBENSTEIN: That's correct.

MR. BEERS: And was that a conversation that occurred between you and him?

MR. RUBENSTEIN: The initial conversation was between a member of my staff and him and is recorded in one of the emails that's included as an attachment to Mr. Radis' testimony.

I had a subsequent conversation with him after the first two sets of tests were done around the time of the exchange of those emails in October to confirm that his opinion remained the same. And during that conversation he confirmed that it did remain the same.

MR. BEERS: Can you identify for me the

first email that you referred to?

MR. RUBENSTEIN: Yes, it is in exhibit 7 of CVRP's direct testimony, which is the collection of emails. The pages are not numbered, but it would be the email that is shown beginning at the top of the third page of the collection. And it's the email that begins:

"Nancy Matthews of Sierra reviewed her notes from her conversation with Bob Freeman earlier this year on the subject. She confirmed that she was quite clear that she discussed testing acrolein from a gas turbine with Bob. He rejected wet methods because of the solubility problem. He further rejected a dry method because of the ability of DNPH to degrade the acrolein. Bob considered TO14 and TO15, thought about it for a few days, and told us to use TO14 with canisters."

That's the email that I was referring to.

MR. BEERS: And that's an email that's not from Nancy Matthews, but from whom to whom?

MR. RUBENSTEIN: That's an email that is from me to Stanley Thom at EPA.

MR. BEERS: Okay. And that occurred

October 24, is that right?

MR. RUBENSTEIN: That's correct.

MR. BEERS: And Dr. Freeman's email, which is on two pages earlier -- I'm sorry --

MR. RUBENSTEIN: Two pages later?

MR. BEERS: Two pages later.

MR. RUBENSTEIN: Um-hum.

MR. BEERS: It begins: Because my name is mentioned more than once with regards to acrolein in canisters, I feel compelled to respond for no other reason than to set the record straight.

Do you know what he's referring to with respect to his name being mentioned more than once with regards to acrolein and canisters?

MR. RUBENSTEIN: No.

MR. BEERS: Was there any discussion that you're aware of about the use of canisters for measuring acrolein other than the circumstances of your testing at the Pasadena facility on two occasions?

MR. RUBENSTEIN: I have no idea.

MR. BEERS: My question is really are you aware of any other discussion of that ongoing in the community that was unrelated to the testing

at the Pasadena facility?

MR. RUBENSTEIN: No, I am not aware of any other discussions.

MR. BEERS: Okay. And then you said you had a subsequent conversation with him, is that correct?

MR. RUBENSTEIN: That's correct.

MR. BEERS: And when was that?

MR. RUBENSTEIN: I don't recall; it was around the same time period, late October and November.

MR. BEERS: And is it your recollection that that conversation occurred after his email of to whom it may concern?

MR. RUBENSTEIN: I'm quite certain of that.

MR. BEERS: Okay, and what was it that he said in that conversation that -- strike that.

You indicated that he said in that conversation what about the use of canisters for measuring stacks?

MR. RUBENSTEIN: That he still believed for the exact circumstances we were discussing, which was measuring the acrolein from the gas turbines at the Pasadena power plant, that the use

of canisters, if done carefully, was appropriate.

MR. BEERS: Okay. And what do you find in his email to whom it may concern that indicates to you that his position in the email is consistent with his saying it was appropriate?

MR. RUBENSTEIN: Because he doesn't say it shouldn't be used. He says he would be reluctant to use it. He says that he has concerns about it.

MR. BEERS: Um-hum.

MR. RUBENSTEIN: And as I think I mentioned earlier, in response to the question from Mr. Harris, he quite candidly indicated to me that he would have great concerns about any other laboratory other than his own performing the analysis using canisters.

MR. BEERS: But he indicated to you that he had no concern when it was his own laboratory doing the work?

MR. RUBENSTEIN: That's right.

MR. BEERS: And you believe that that was consistent with his saying in the email, consequently we have no way to quantify the recovery of acrolein in a source matrix, do we have clients who have used canisters to collect

source samples, yes, we have. Are the numbers good, who knows?

MR. RUBENSTEIN: I --

MR. BEERS: Do you believe those are consistent?

MR. RUBENSTEIN: I have questions about that comment because he expressly recommended --

MR. BEERS: I'm really asking you whether or not you believe that the statement there, that I just quoted from the email, is consistent with what you just told me that he believed that it was okay so long as it was done in his lab.

MR. RUBENSTEIN: I don't know that there's any connection between the two, so I can't make a judgment --

MR. BEERS: Okay, all right, --

MR. RUBENSTEIN: -- about consistency.

MR. BEERS: I don't have any other questions.

HEARING OFFICER FAY: Okay, thank you. Any other recross?

All right. Thank you. That concludes the applicant's direct testimony on air quality and public health, as well as the cross-

examination of this panel.

Is staff prepared to go forward at this time?

MR. RATLIFF: We are.

HEARING OFFICER FAY: All right.

MR. RATLIFF: Staff has its own two witnesses plus three witnesses from the Bay Area District.

As I've told you, I propose to put them on as a panel to have brief examinations of each of them directly, and then to turn the whole panel over for cross-examination. I think that will be the most efficient way to get this done.

I anticipate that my direct of all five of the witnesses will take somewhat more than an hour, although I'm hopeful that I can keep it even shorter.

And at that point, we'll be done. And people can cross-examine them as long as they like afterwards so long as it's relevant.

So with that indulgence, I'd like to go ahead and put them on seriatim and then hold the cross-examination until each of them is finished.

HEARING OFFICER FAY: That's fine. Please swear the witnesses.

Whereupon,

STEVE HILL, KENNETH J. LIM, GLEN E. LONG, MAGDY BADR and MICHAEL RINGER

were called as witnesses herein, and after first having been duly sworn, were examined and testified as follows:

HEARING OFFICER FAY: Mr. Ratliff, just a second. Mr. Boyd, I think, wanted to ask a question. Mr. Boyd, do you have a question?

MR. BOYD: I was just going to ask if you had called CARE, our opportunity to ask the applicant's witnesses --

HEARING OFFICER FAY: Yes, we did. Yes, we did. And you were not present, so we moved on.

Mr. Ratliff, introduce your witnesses.

MR. RATLIFF: Yes, staff's first witness is Mr. Magdy Badr.

DIRECT EXAMINATION

BY MR. RATLIFF:

Q Mr. Badr, could you start by explaining your position and role with the staff?

MR. BADR: I'm an Associate Mechanical Engineer employed by the California Energy Commission. I have been with the Commission for approximately ten years.

During that time I performed analyses for the utility system or electrical utility system as an electrical generation systems specialist. And for the last eight years roughly I've been analyzing power plants and policy issues associated with air quality, such as BACT analysis, NSR rules, and CEQA.

I have sited almost nine power plants as big as this proposed project. In evaluating these siting cases, we look at the analysis been done by the District, the analysis been done by the applicant, and also we contact California Air Resources Board and we consult with them on their analysis. Also we do our own analysis on these cases.

MR. RATLIFF: Did this project meet the state and federal requirements enforced by the Air District?

MR. BADR: Yes, it does. The analysis will show that this project does meet the federal requirements and the state requirements and the local, and complies with the Bay Area Air Quality Management District's rules for BACT rules and also the federal NSR rules.

MR. RATLIFF: Is it properly off set?

MR. BADR: Yes, the applicant has complied with the District requirements for offsets by providing the appropriate amount of offsets for the precursors for ozone, NOx and VOC, and also provided additional mitigations for PM10 under the CEQA that the staff would require mitigations for PM10.

So, subsequently they provided roughly 212 tons of emissions -- I'm sorry, I'll take that back -- they provided more than enough offsets, around 152 tons of offsets to mitigate 91.3 tons of PM10.

MR. RATLIFF: When you say extra offsets, are you talking about offsets that would not otherwise be required by the District, but which the applicant has agreed to provide because of staff's feeling that it is required to fully mitigate the project?

MR. BADR: That is correct. The project will be built in an area that has violation of the state standard, and it's elevated for PM10. So, to mitigate any additional adverse impacts, the applicant has to provide the appropriate offsets to negate their impact. And they did provide such.

MR. RATLIFF: Are project construction impacts mitigated to levels of less than significant in your opinion?

MR. BADR: Yes. During the construction of the project there will be a lot of disturbance of the ground. There will be a lot of emissions also with the vehicles coming in and out for workers, and heavy earth equipment or earth-moving equipment.

The staff has imposed a number of conditions of certification on the construction activities of this project during that temporary period.

These conditions are summarized in air quality 48, air quality 49, air quality 50 and air quality 52. These conditions are designed to insure that the maximum reduction of the dust and the emissions during the construction phase of the project has been minimized.

These conditions, basically they will require the applicants to water the ground and apply water approximately twice every hour, for example, which we consider it's a very good way of keeping the ground wet, even in the hot summer. Paving, sometimes going to the extent of paving

roads if it's needed. And use chemical suppressant stabilize the soil.

Limit the traffic of the vehicles on the undisturbed soil. Use of soot filters on the heavy equipment, as well, to try to reduce the PM10 from the heavy equipment.

So, by using these conditions, which the applicant agreed to, we feel that the mitigations will be less than significant during the construction phase of the project.

MR. RATLIFF: There was some discussion yesterday of the modeling that had been done for the air quality modeling. Do you believe that the applicant has followed the normal and appropriate protocols for the use of the models?

MR. BADR: Yes, they have. They used the approved EPA or Environmental Protection Agency approved models, Screen and ISC. And also they used the correct protocol to model such a project, and also the correct -- they used the correct input to the model like emission factors and the stability to that model.

So, the protocol, itself, and the results are accurate.

MR. RATLIFF: The staff has proposed a

limitation of 9 pounds per hour for PM10. Do you believe that the project would be able to meet that limit?

MR. BADR: In my opinion it might. And it might well be there is other projects has been proposed before this Commission and they range between 9 pounds per hour and 18 pounds per hour. It depends on the type of turbine, and also where it's located, and how conservative the applicant is.

So, this other applicants has been proposed to put the ranges around 9 to 18, basically other applicants, they propose to have 9 pounds per hour, as well, on their turbines.

So we believe it can be met.

MR. RATLIFF: Have you read the testimony of Mr. Radis?

MR. BADR: However, there is conditions of certification also in the FSA and the FDOC impose that they cannot -- they have to meet that limit. Otherwise if they do not meet it, they have to provide the additional offsets to mitigate the additional impact.

So it's not a gunshot approach. They are proposing 9 pounds per hour, and they are home

free, no. There will be a source test to try to detect that 9 pounds per hour to be met. And if they don't, they have to provide the additional mitigations to correct that.

MR. RATLIFF: Have you read the testimony of Mr. Radis?

MR. BADR: Yes, I have.

MR. RATLIFF: Does that change your opinion on this matter in any way?

MR. BADR: No, it does not because it seems like he was -- Mr. Radis wasn't very pleased with the 9 pounds per hour, and he assumes it's a half what was recommended or guaranteed by the manufacturer.

So that was again for the same reasons I just mentioned to your previous questions, that there would be a source test and that source test would verify if the 9 pounds per hour is accurate or not, or can be met. And if won't, additional mitigation would be provided.

MR. RATLIFF: Have you read the testimony from Morgan Hill?

MR. BADR: Yes, I have.

MR. RATLIFF: Does it change your opinion in any way?

MR. BADR: No, it would not change my opinions, and I would like to defer to Mr. Glen Long's testimony. He did the analysis for that. And the applicant also earlier has indicated that the maximum impact is coming from the downwash and it does not really be affected, the maximum is not going to be affected by the different mixing heights.

MR. RATLIFF: Mr. Badr, generally speaking is PM10 -- actually both PM10 and ozone impacts, are they regional impacts or are they local impacts?

MR. BADR: PM10 and ozone are regional impacts. They are the precursors are they contribute to their impacts on the whole region, not on -- they are not localized.

CO might be localized, but the other, the ozone and the PM10 are regional impacts or regional problems.

MR. RATLIFF: Thank you, I have no further questions for Mr. Badr.

The next staff witness that I would have testify now is Mr. Mike Ringer.

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DIRECT EXAMINATION

BY MR. RATLIFF:

Q Mr. Ringer, could you very briefly describe what your duties and role with the Energy Commission Siting Staff are?

MR. RINGER: I've been analyzing health impacts of proposed projects in the Siting Division since 1993. I've participated in the analysis of ten projects. During most of that time I was a health and safety program specialist.

MR. RATLIFF: Just to get this straight right off the bat. You're not a medical doctor, is that correct?

MR. RINGER: Correct.

MR. RATLIFF: And you're not an epidemiologist?

MR. RINGER: No.

MR. RATLIFF: But you've worked for years analyzing public health?

MR. RINGER: That's correct.

MR. RATLIFF: Did you actually provide the testimony in the staff FSA entitled public health in the staff's analysis?

MR. RINGER: I did.

MR. RATLIFF: We've already discussed

yesterday a great deal what a health risk assessment includes. I wonder if you could tell us whether it's been done in conformance with specific guidelines, and what those guidelines are?

MR. RINGER: Yes. The health risk assessment for this project has been done in conformance with guidelines that have been around for a number of years, guidelines that were originally prepared and approved by the State Office of Environmental Health Hazard Assessment, the Air Resources Board, and the California Air Pollution Control Officers Association.

It's also very similar to the type of health risk assessments that are done by Environmental Protection Agency.

And in general, those types of health risk assessments are designed to be extremely conservative, such that the predictions are not likely to be -- the actual impacts are not likely to be more than the predictions. The predictions over-estimate likely impacts.

MR. RATLIFF: Have the guidelines of the Office of Environmental Health Assessment and the Air Pollution Control Officers Association been

followed, in your opinion?

MR. RINGER: Yes.

MR. RATLIFF: When you say that these health risk assessment analyses are supposed to be very conservative and health protective, could you, as an example, discuss the conservatisms with regard to the reference exposure levels for acrolein?

MR. RINGER: The conservatisms in health risk assessments arise in a number of different places. The models that are used are conservative. The risk assessment process, itself, takes into account a number of different steps, of which put conservatism upon conservatism.

One of the places in the risk assessment which uses conservative assumptions is the use of the reference exposure levels for the different chemicals involved in the assessment.

As an example, acrolein, which has been the subject of much discussion, follows the same pattern as all the other RELs, and that is that it's designed to protect the most sensitive members of the population through safety factors.

The original acrolein test was done that took place over a period of five minutes and it

exposed volunteers to acrolein to measure eye irritation. The results of that test were then divided by 12 to go from five minutes to one hour of exposure time, since this is an acute reference exposure level, it assumes an exposure level of one hour.

So you have the initial results divided by 12 to go to one hour. Then that was further divided by 6 to account for the type of testing that was done. That was further divided by a factor of 10 to take into account variation in the human population.

So there you have a number of factors that were used to make sure that the reference exposure level is conservative and designed to protect the most sensitive members of the population, and including a safety margin.

So, taking that reference exposure level and combining it with assumptions in the model, make it very conservative.

The model that was used has been cited in the EPRI GRI report that was referenced a number of times by CVRP. And the EPRI GRI report came to the conclusion that the CAPCOA model that was used in these health risk assessments, and it

was used by EPRI, by the way, consistently over-estimates ground level impacts from five to fifty times the true value.

So here we have acrolein, which was divided -- the original results were divided a number of times to provide conservatism, plugged into a model which over-predicts by five to fifty times.

So it's my conclusion then that the overall results are extremely conservative.

MR. RATLIFF: Is it your opinion then that acrolein would constitute a health risk to the public in this instance, or would it not?

MR. RINGER: I don't believe that it would, for several reasons. The use of health risk assessment, although it ends up giving us a number by which we can judge potential health effects, the acute number of interest to us is the hazard index.

And we generally start by looking at 1.0 as the significance level. But we don't look at that with blinders on such that any number, no matter what, above 1 is automatically significant, and any number less than 1 is automatically insignificant.

It depends on the circumstances of each individual chemical and each individual case. That's completely consistent with the way the results of a risk assessment are supposed to be viewed, and that's the way they are viewed by the Environmental Protection Agency and other entities.

The fact that the first exceedance of the risk of the hazard index in this case was done by screening modeling, is something that we would want to look at.

Screening modeling is, again, designed to be very very conservative. So, if screening modeling leads you to the conclusion that the hazard index may be breached, then we take a look at more refined modeling, which was done in this case.

The other thing that you would want to look at to see is how often the hazard index may be exceeded, and where it may be exceeded. The fact that in this instance exceedances were identified at hilltop locations during worst case conditions, which happen to be at night, was also very important.

The other important thing that you would

want to look at is the health effects of interest. And in this case it's eye irrigation which is considered a mild health effect.

So, looking at this from the standpoint of the conservatism that's involved, we would generally then conclude that it's not going to be a significant health effect.

MR. RATLIFF: Have you read the testimony of Mr. Radis in this proceeding?

MR. RINGER: Yes, I have.

MR. RATLIFF: Does it change your conclusions in any way?

MR. RINGER: No, it does not.

MR. RATLIFF: Have you read the testimony of Suzanna Wong?

MR. RINGER: Yes.

MR. RATLIFF: And does it -- pardon me, Dr. Suzanna Wong -- does it change your conclusions in any way?

MR. RINGER: No.

MR. RATLIFF: There was some discussion yesterday about health risk assessments potentially being based on information that is incomplete and uncertain. What comment would you have on that?

MR. RINGER: Yes, health risk assessments, by definition, are done because we do not have complete information. If we had complete information we would not do a health risk assessment, we would strictly look at the consequences and know that for a certainty those consequences would occur.

There are many many areas in the health risk assessment process where assumptions are made, and where we have incomplete information. In this particular instance I believe probably in the neighborhood of 16 to 20 different toxic air contaminants were examined.

I wouldn't presume to say that was all of the toxic air contaminants that could ever come out of a combustion turbine. Those are the ones that have been studied, the ones that we know about.

The whole process of health risk assessment, which includes the modeling, there's uncertainties in modeling, there's uncertainties in the behaviors and habits of people in the area. We try to take into account those uncertainties by over-estimating the impacts and the exposure that will happen.

So, to suggest that this process somehow is unsuitable, or that we are not able to come to certain conclusions because of uncertainty I think misses the point. We do the best job with the best information that we have.

MR. RATLIFF: You mentioned earlier an EPRI study that had been discussed yesterday. I believe it's entitled gas-fired boiler and turbine air toxics, a summary report, a 1996 report. You stated the conclusion from that study was that, I believe, that there are no significant health risks associated with gas-fired turbines.

Are there additional studies which have also reached that conclusion from EPA?

MR. RINGER: Yes, the EPRI study was done in part in response to Clean Air Act amendments of 1990 which began a process to examine hazardous air pollutants from electric generation units.

I'd just like to reiterate the conclusions of the EPRI study specifically state the most important conclusions from the air toxics testing programs conducted on gas units, and the subsequent health risk assessment studies performed by CARNO and EPRI is that the emissions

of hazardous air pollutants from gas-fired sources will not pose significant carcinogenic or noncarcinogenic public health risk.

Similarly, the Environmental Protection Agency had done a study also in response to those same amendments, the Clean Air Act amendments of 1990, which looked at hazardous air pollutants from electric generating plants.

In their first analysis, in order to prioritize which pollutants they would look at, they looked at the health risks from gas-fired generating plants, and they concluded that there were no short-term or long-term risks, either noncancer or cancer risks from gas-fired plants used by electric utilities. And therefore omitted them from further study.

MR. RATLIFF: Thank you, Mr. Ringer, I have no further questions for Mr. Ringer. And would, at this point, move on to the BAAQMD witnesses, starting with Mr. Hill.

DIRECT EXAMINATION

BY MR. RATLIFF:

Q Hello, Mr. Hill.

MR. HILL: Hi.

HEARING OFFICER FAY: Please state your

name for the record.

MR. HILL: My name is Steve Hill, H-i-l-l.

MR. RATLIFF: For the Committee's sake, and really for all of our sakes, could you briefly describe what your responsibilities are, and also tell us what your educational background is?

MR. HILL: Certainly. I am the Manager of Permit Evaluation at the Bay Area Air Quality Management District. I'm responsible for reviewing the engineering evaluations that are conducted to determine compliance for new industrial sources.

My educational background, I have a bachelor of science in engineering from UCLA. I have a masters of science in chemical engineering from UC Berkeley.

MR. RATLIFF: What is the purpose of your testimony today?

MR. HILL: My purpose today is to introduce the FDOC, the final determination of compliance into evidence, and to answer any questions that I can about it.

MR. RATLIFF: And is the FDOC, the final determination of compliance, is that the

District's permit document ordinarily?

MR. HILL: Yes, that is correct; it serves as the District's permit evaluation and contains the permit conditions that we believe are necessary to insure compliance with the applicable requirements.

MR. RATLIFF: And what are the contents, in a brief manner can you just describe the important contents of that document?

MR. HILL: The FDOC contains the engineering evaluation which reviews the new source review regulations. The NSR review portion deals with the specific emission characteristics of the facility. It's our analysis of the proposed project and our determination as to whether or not that project will comply with applicable state, federal and district requirements.

It also reviews the technology that's proposed and compares it against the standard of best available control technology. And it looks at the provision of offsets. Those are the three main elements in the new source review permit review.

It also contains the prevention of

significant deterioration portion, which is a federal program that applies to large facilities located in areas where we are attainment for certain pollutants. And it's basically a modeling review that determines whether or not the impacts are acceptable within federal requirements.

The third component is an analysis of toxic air contaminant impacts called the health risk assessment. We compare the results of that health risk assessment with our risk management policy, which is a District requirement to assure that the public health impacts from any stationary source do not exceed significance levels.

The FDOC contains the conditions of operation which the District will impose upon the operation of this facility. And finally, it does confirm the existence of the offsets that the District has required.

MR. RATLIFF: Is it your understanding that the Commission Staff has required certain things that the District would not otherwise require?

MR. HILL: Yes, it is my understanding.

MR. RATLIFF: And do you know why did the District, for instance, not require offsets

for PM10?

MR. HILL: Our regulations do not require emission reduction credits or offsets for PM10 because the emissions from this facility do not exceed the threshold that triggers that requirement under our regulations.

MR. RATLIFF: Now, do you believe that the project will comply with all requirements and regulations enforced by the District, both state and federal?

MR. HILL: Yes.

MR. RATLIFF: And can the District certify that complete emission offsets for the proposed facility have been identified and will be obtained prior to Commission licensing?

MR. HILL: Yes.

MR. RATLIFF: I have no other questions for Mr. Hill.

I'll now move on to Mr. Glen Long.

DIRECT EXAMINATION

BY MR. RATLIFF:

Q Good afternoon, Mr. Long.

DR. LONG: Good afternoon.

MR. RATLIFF: Mr. Long, can you briefly tell us what your qualifications are and your

educational background, and tell us what your duties and responsibilities are with the District?

DR. LONG: Sure. I have a bachelors degree from the University of Texas in engineering. I have a masters in environmental health engineering. And a PhD in civil engineering from the University of Texas.

I was a research assistant at the National Center for Atmospheric Research, and also a Post-Doctoral Fellow at the National Center for Atmospheric Research.

I have worked at the District 14 years in the research and modeling section. I perform a variety of duties. Currently most of those duties revolve around predicting the impacts of permit -- facilities requesting a permit from the District.

MR. RATLIFF: Is it fair to say that you are the District's air quality modeling expert?

DR. LONG: Yes.

MR. RATLIFF: In this capacity have you worked with the EPA, the Air Resources Board and the California Energy Commission with regard to modeling issues and protocols?

DR. LONG: Yes, I have.

MR. RATLIFF: And in this role are you

familiar with EPA's modeling and protocols?

DR. LONG: Yes, I am.

MR. RATLIFF: How were the air quality impacts for this project modeled?

DR. LONG: District regulations, specifically regulation 22222 requires that any model in an analysis must be an EPA-approved guideline model.

EPA routinely reviews the adequacy of these guidelines. The current guidelines were revised in 1999, so they're up to date. And EPA has extensive hearings and workshops regarding the adequacy of their guidelines.

For this project two different EPA-approved screening level models were used to predict the impacts, Screen3 and ISC-3. Different emission and meteorological scenarios were considered in order to make sure that the worst case maximum impact was predicted.

In addition to just normal modeling, two special kinds of modeling was done. One was building downwash, where the model requires the input of all neighboring buildings that could influence the downwash. And also an inversion breakup fumigation analysis.

MR. RATLIFF: In your experience are these models designed to be generally over-predictive of point source impacts?

DR. LONG: Yes. EPA has structured their guidance in such a way that they have what's called a tiered approach to modeling the impacts.

And the first level of analyzing the impacts from a facility is the use of a screening model. Once a screening model is used, if the impacts look like they could lead to a violation of a standard, then a refined model could be used to further refine those analyses.

The screening level models are fairly simple models with data that's easy to obtain. That data is conservative in all accounts, so that if a facility screens out of the original level, then EPA is satisfied that the impacts will actually be much lower than that.

The next level after screening would be a refined analysis, and there are often places in the guidance that there are two levels, or alternatives in the refined portion of the analysis. But for this facility both models were considered screening level models.

MR. RATLIFF: Now, yesterday we heard

that the maximum impact condition model was downwash, is that correct?

DR. LONG: That's correct.

MR. RATLIFF: When you did the more refined modeling, why did you use 600 meters as the mixing level?

DR. LONG: 600 meters, the District has, over the years, looked at mixing height around the Bay Area, and the only mixing height that is measured in the entire Bay Area routinely is at Oakland.

And it's the District's opinion that that Oakland sounding is not representative of anything but the mixing height there at Oakland. That the micrometeorology around the Bay is such that it would be scientifically inappropriate to extrapolate that mixing height to other areas in the Bay Area.

Through our sensitivity analysis of running the models we've found that in general models like ISC-3 are fairly good about representing concentrations as long as the mixing height is above the plume height.

Once you stipulate that the mixing height is below the plume height, then the model

assumes that, like in reality, that the plume would not get down to the surface to impact a receptor.

So that 600 meters was used, it is generally used as a first step in a screening analysis as the mixing height.

MR. RATLIFF: Is it your view that this modeling assumption regarding the plume and the mixing level is, in fact, that it correlates with real world conditions?

DR. LONG: Yes.

MR. RATLIFF: Your testimony states that you've also modeled the mixing height at other levels, is that correct?

DR. LONG: That's correct.

MR. RATLIFF: Could you describe those results?

DR. LONG: Sure. I also modeled using the ISC-3 model in the IBM meteorological data which I'm sure I'll talk about in a minute, with mixing heights at 30.5 meters or roughly 100 feet; at 100 meters and at 1000 meters.

And the impacts from all of those runs showed either a decrease in the concentration -- the concentration either stayed the same or

decreased, except for I think it was the annual NO2, which -- no, I'm sorry, that's for something else, I apologize. It did stay the same or went down for every single pollutant using those other mixing heights.

MR. RATLIFF: And can you tell us why you believe that happens?

DR. LONG: Precisely for what I mentioned earlier, that the mixing height acts as a lid or a barrier to prevent the plume from impacting a receptor at ground level.

MR. RATLIFF: Okay. Have you read the testimony of the witnesses in this case from Morgan Hill?

DR. LONG: Yes, I have.

MR. RATLIFF: Does that change your answer or your opinion in any manner?

DR. LONG: No.

MR. RATLIFF: Why not?

DR. LONG: I feel that -- the reason why it doesn't change my opinion is that I believe I have addressed their concerns. Their discussion is solely about meteorology. There's nothing about impacts.

And by using EPA guidance in air quality

modeling that was performed using standard procedures with mixing heights ranging from 100 feet to 1000 meters, that the modeling consistently shows that the biggest impact is due to building downwash.

MR. RATLIFF: Did the Morgan Hill testimony suggest that the modeling should have been performed with different models?

DR. LONG: Yes.

MR. RATLIFF: Are the models suggested approved by EPA for use?

DR. LONG: I'm not aware in the testimony that a specific model was recommended. It's my understanding that the kind of model that their testimony speak to is currently not on the list of EPA guideline models.

MR. RATLIFF: Is an EPA-approved model required?

DR. LONG: Yes.

MR. RATLIFF: You mentioned earlier meteorological data. The modeling requires meteorological data, is that correct?

DR. LONG: That's correct.

MR. RATLIFF: Does EPA have guidance on the use of meteorological data with regard to air

quality modeling?

DR. LONG: That's correct, they have guidance that specifies the standards that must be met in order to collect the data for use in modeling applications.

MR. RATLIFF: What meteorological data was used for this project?

DR. LONG: The met data that was used for this project was data taken from 1993 at the IBM facility site. It's a full year's worth of data. We looked at the site, we've looked at neighboring areas, and the general flow in the valley, and feel that that met data is representative of the site.

MR. RATLIFF: Were questions raised about the validity of that data?

DR. LONG: Yes, they were.

MR. RATLIFF: And what were they?

DR. LONG: The questions had to do basically with that met data should be collected on site, as opposed to roughly 4 kilometers away.

MR. RATLIFF: Do you agree with that objection?

DR. LONG: No.

MR. RATLIFF: Can you explain why?

DR. LONG: Sure. For several reasons. There is also 1990 data available from PG&E. Although that's a different year, so we can't do an hour-by-hour comparison, we could look at the two data sets independently and compare them.

The PG&E Metcalf data is roughly 500 meters to the southeast of the project site, which would be on the south side of the hill. That data was remarkably consistent with the IBM data. The annual average wind at IBM was 6.1 miles per hour, while the annual average wind at Metcalf was 5.9 miles per hour.

In order to address some of these concerns I went ahead and remodeled the facility using both the Metcalf data and the screening data that EPA uses in their Screen3 model. The Screen3 Met --

MR. RATLIFF: Can I interrupt you just a second.

DR. LONG: Sure.

MR. RATLIFF: This technique is something that you would use if you otherwise had no valid meteorological data, is that correct?

DR. LONG: That's correct, it would be a step that you would try before you actually used

on-site data, so that if you had no data on site, that you would use this set of 54 different combinations of wind speed and stability.

MR. RATLIFF: And is this a decidedly conservative way of analyzing the --

DR. LONG: It's extremely conservative.

MR. RATLIFF: Okay. What did you conclude with that?

DR. LONG: On both of those analyses, well, let's start first with the use of the PG&E data. I found that all the concentrations stayed the same or went down except for the annual average NO2, which went from .67 mcg/cubic meter to .87 mcg/cubic meter, which is still below the significance level of 1.

So the Metcalf data showed consistent results with the IBM data.

When I used the 54 wind speed stability categories in ISC-3, I ran the model with wind directions every 10 degrees, so that there were 54 different cases of wind at 10 degree increments around the whole facility.

Because this is fictitious data, or screening data, you can't create more than one-hour averages without a factor to convert from one

hour to three hour, or a factor from one hour to eight hour, and EPA, in their guidance, does have what they consider to be conservative factors to convert from the one hour, to a three hour, to an eight hour, to a 24 hour.

So that as expected, the impacts were remarkably higher, but when those impacts were added into the background concentration, no ambient air quality standard was violated. In addition to -- or that currently wasn't being violated. For example, the state's PM10 24-hour standard.

So that no new standard was violated as a result of the screening level of analysis.

MR. RATLIFF: Thank you. I have no more questions for Mr. Long.

I'd like now to go to Mr. Ken Lim, the District's final witness, and the witness who we have offered to bring back at a subsequent date should people desire his presence for additional cross-examination.

HEARING OFFICER FAY: Mr. Lim will be available for cross-examination as part of your panel today?

MR. RATLIFF: Yes.

HEARING OFFICER FAY: Okay.

DIRECT EXAMINATION

BY MR. RATLIFF:

Q Mr. Lim, could you describe both your educational qualifications and your responsibilities with the Air District?

DR. LIM: Yes. I have a bachelor and master of science in engineering from MIT. And I earned a doctorate in chemical engineering from Stanford University, along with a PhD Minor from Stanford.

I have over 20 years experience in air quality-related research, air pollution control technology and environmental assessment programs both in the private sector in consulting with the USEPA, as well as the Air District.

I have been employed by the Air Quality Management District for the last 10 years. My principal assignment at this time is related to energy matters, energy-related air quality issues.

MR. RATLIFF: Mr. Lim, what is the purpose of your testimony today?

DR. LIM: I'm here to testify about the air quality impacts of diesel fuel operating generators in the Bay Area, and particularly

during periods of power shortages, including planned and unplanned outages.

MR. RATLIFF: How do power outages affect air quality?

DR. LIM: When the power outage occurs, generally the shift from central power plants that may be lacking or interrupting the operation to smaller generation sources that typically have much higher levels of pollution.

And as a consequence there's a typically adverse impact about operating these other less clean generators.

MR. RATLIFF: When you say less clean generators, are these usually diesel backup generators?

DR. LIM: Yes, the vast majority of these standby or backup generators are diesel fueled internal combustion engines.

MR. AJLOUNY: Excuse me, I'd like to object in the sense of I think the word's assuming, or whatever the words are, but how do we know that Metcalf has a significant impact on making sure that California is going to have enough power three years from now or two years from now?

HEARING OFFICER FAY: Mr. Ajlouny, --

MR. AJLOUNY: I just --

HEARING OFFICER FAY: -- I'm going to overrule your objection. We're going to let the staff present its panel. And I hope without objection. And then give you the opportunity to cross-examine all of these witnesses that are being presented.

MR. AJLOUNY: But what's relevant -- how is that relevant to this case? I just don't understand it.

HEARING OFFICER FAY: Well, --

MR. AJLOUNY: We're assuming that Metcalf is going to be our savior here.

MR. RATLIFF: I'm sorry, there is testimony filed in this case currently which is to the effect that there is a connection between Metcalf and Metcalf increases the reliability of the electrical system.

A different witness at a different date will provide that testimony.

But this witness is testifying to the relationship between air quality and reliability. You're right, there is another piece of this story, but that's coming later.

HEARING OFFICER FAY: And when will that come, Mr. Ratliff?

MR. RATLIFF: It comes with the local system effect testimony.

HEARING OFFICER FAY: Okay. Can you just briefly summarize for the benefit of the people here how you intend to tie that in? I mean can you give us a minute, just --

MR. RATLIFF: Well, it's no mystery, and I think most of the people present here have probably read.

The staff and the ISO have filed testimony under the topic designation of local system effects. The essence of that testimony is to describe the reliability difficulties that the San Jose area has for electrical system reliability, and the beneficial effects of a Metcalf Power Plant.

HEARING OFFICER FAY: Okay.

MR. RATLIFF: To preserve that reliability.

HEARING OFFICER FAY: All right. Go ahead.

BY MR. RATLIFF:

Q Mr. Lim, we were talking about diesel

backup generators. How many backup generators of this nature do you estimate are in the Bay Area?

DR. LIM: The State of California, California Air Resources Board has estimated to be about 2000 to 3000 backup generators in the Bay Area.

MR. RATLIFF: 2000 to 3000?

DR. LIM: Correct.

MR. RATLIFF: Are these licensed?

DR. LIM: Currently they do not require a permit from the Air Quality Management District because they resorted on an exemption from our permit requirements. That is from their historical use as rather idle standby generators.

But in recent months and years because of the power shortage situation in the Bay Area and the rest of California, these engines have begun much greater operation times.

MR. RATLIFF: What size are these generators typically?

DR. LIM: There's a wide range, but a typical average size is about 550 horsepower.

INTERVENOR: Objection, is the staff cross-examining its own witness?

MR. RATLIFF: No, this is called direct

examination.

Are they getting any larger, these diesel backup generators, in your experience?

DR. LIM: Since we have introduced new regulatory requirements for these backup generators, we have received a large number of, or increased number of permit applications and inquiries about standby generators.

And, as such, we have learned that, yes, indeed, the size of the units have greatly increased. Where historically the numbers we've seen were like 500, 600 horsepower engines, now applications for 1000, 2000, 2800 horsepower are not unusual.

MR. RATLIFF: Can you describe the --

MR. AJLOUNY: I don't want to disrupt --

MR. RATLIFF: -- the emissions from these generators --

HEARING OFFICER FAY: Excuse me, Mr. Ratliff.

MR. AJLOUNY: Really, I'm trying not to be an irritant to the Commission and Commissioners, but we just got this yesterday, and this is what I understand to be the testimony, 8, 9 and 10, I think, of this declaration -- 8, 9 and

10.

And none of this is talking about this information. If I'm going to want to be able to even deal with this next, you know, in two weeks from now, I don't have anything in writing, you know, this is just like I -- I can't be taking notes. I just -- surprise, surprise. I just --

HEARING OFFICER FAY: Okay, I recommend you do take notes, and Mr. Lim is responsible, as are any of the witnesses for any of the testimony they give.

MR. AJLOUNY: I'm just asking you to direct him to bring out the testimony he brought forward yesterday as a surprise.

PRESIDING MEMBER LAURIE: Mr. Fay, I would acknowledge the legitimacy of the issue. With written testimony filed we allow only minor discretion to expand that written testimony during direct testimony.

So, to the extent that there is nonsubstantive or nonsubstantial new facts added to the written testimony, then I would overrule an objection. To the extent that the facts are substantial, I would sustain such an objection.

So, to me the issue is what's the

substance of this additional testimony. Is it harmful having not been previously provided. And, if so, I will suggest that it not be permitted at this time.

HEARING OFFICER FAY: Well, Mr. Ratliff, can you take that recommendation into account and --

MR. RATLIFF: Well, certainly, I think there is certain legitimacy to the question, but we certainly have always allowed witnesses to elaborate on their testimony as filed. That's not uncommon here.

If you don't want to -- if you want to sustain the objection I would suggest that we allow it to come in as public comment, or as agency comment, in this case. Because we always allow agencies to comment. And let it take the weight that it deserves as that.

MR. BOYD: Isn't the witness available under the local system effects?

MR. RATLIFF: Commissioner, I might add also that, if I may, that the District is inexperienced in providing testimony for our proceedings. And I think this, in some measure, is part of the problem that we have here. I

merely say this by way of explanation inasmuch as I don't think that they could have been aware of the likelihood that they would be precluded from filing testimony or speaking about their testimony as filed.

PRESIDING MEMBER LAURIE: Well, I don't think we want to go there, Mr. Ratliff, because the responsibility, of course, is not with the witness as to the form and nature of the questions that are going to be asked and the procedures that are going to be followed.

There's nobody perhaps more experienced than yourself. And so the staff has a responsibility to prepare in advance the written testimony that's going to be utilized as the foundation.

You've indicated, and Mr. Fay agrees, and I agree, that there is some latitude provided beyond the written testimony, and we will continue with that in this case. If folks want to make objection, they're free to make an objection, and we will rule on those objections.

HEARING OFFICER FAY: And I'd like to state --

MR. RATLIFF: Well, could we actually

have that at the close of the testimony, rather than having to deal with it on each question? I mean there must be some more efficient way than having to deal with it repeatedly.

HEARING OFFICER FAY: Yes. I'm going to direct that objections be withheld. And if you want to state them after he testifies --

MR. AJLOUNY: How can we object after the fact?

HEARING OFFICER FAY: If you want to object after he's testified, the Committee, if it agrees with you, can take that into account.

However, the Committee wants --

MR. AJLOUNY: Are you making the testimony part of the record?

HEARING OFFICER FAY: Excuse me, excuse me. The Committee wants to hear Mr. Lim's testimony. Mr. Ratliff, try to keep it within the general scope of what he summarized in his testimony. And Mr. Lim will be available on March 12th for cross-examination.

And that's the direction of the Committee.

MR. AJLOUNY: March 12th, can --

MR. SCHOLZ: Can I elucidate my

objection?

HEARING OFFICER FAY: No, no, we're not taking objections now. We --

MR. SCHOLZ: Please --

HEARING OFFICER FAY: -- want to hear the direct testimony. And then we will hear the objections after the panel has testified.

MR. NELSON: Can I ask a question?

HEARING OFFICER FAY: Yes.

MR. NELSON: Steve Nelson. Isn't this related to the need issue, which I thought was not relevant in the proceedings?

HEARING OFFICER FAY: No.

MR. NELSON: This has nothing to do with the --

HEARING OFFICER FAY: Yes, Ms. Dent?

MS. DENT: I have a procedural question. Is the witness' testimony going to be moved into evidence, or can we reserve the right for motion to strike the evidence at the conclusion of the testimony?

HEARING OFFICER FAY: You can certainly make that motion at the end --

MS. DENT: So we can move to strike the testimony after we've had an opportunity to hear

the testimony.

HEARING OFFICER FAY: Yes.

MS. DENT: And we can also --

HEARING OFFICER FAY: In fact, I'd ask Mr. Ratliff to withhold moving that testimony until --

MS. DENT: I would ask him to withhold moving that --

HEARING OFFICER FAY: -- after --

MS. DENT: -- testimony until after the local effects testimony and the witness comes back for cross-examination.

HEARING OFFICER FAY: Yes. Yes. That would be my preference.

MS. DENT: Thank you.

HEARING OFFICER FAY: Okay. So, with that, can we proceed, Mr. Ratliff.

MR. RATLIFF: Thank you. Mr. Lim, we had just talked about the size and the number of these generators. Can you describe the emissions from these generators?

DR. LIM: The generation system used in these diesel generator sets are inherently highly polluting systems. And, as such, on a normalized basis, in other words per kilowatt hour of

electricity generated, most of these backup generators produce over 200 times the nitrogen oxides or ozone precursor emissions than from a clean central power plant.

MR. RATLIFF: What kind of a public health risk do these emissions from backup generators create?

DR. LIM: They certainly produce high levels of NO2 or nitrogen oxides emissions. But in addition, they emit high levels of particulate matter. And particulate matter from diesel engines has been identified by the State of California to be a toxic air contaminant. And as such, the operation of these standby generators in the urban setting can lead to local adverse potential health impacts.

MR. RATLIFF: What is the estimated health risk of a diesel generator in proximity to a neighborhood?

DR. LIM: The typical engine emits PM levels using the accepted uni-risk factor adopted by the State of California to increase cancer risk to nearby receptors, typically in the range of 5 to 10 in a million.

And that's assuming not these standby

generators as they exist in the population now, but a relatively to new modern engine.

MR. RATLIFF: Are you saying that the ones that exist now tend to be worse still?

DR. LIM: Yes, in general.

MR. RATLIFF: When you say a health risk assessment of 5 to 10 cancers in a million, what is that equivalent to in terms of an industrial facility?

DR. LIM: These levels from a single engine are comparable to a typical chemical factory or petroleum refinery.

MR. RATLIFF: Do these emissions occur near ground level?

DR. LIM: Yes.

MR. RATLIFF: Why does that matter from a public health perspective?

DR. LIM: These levels that would be produced where people work and live, and would be breathed in by receptors in these locations.

MR. RATLIFF: Do you think these emissions could make it more difficult for the District to comply with state and federal air quality standards?

DR. LIM: Certainly the additional NOx

emissions would have potential impact, and as far as the ambient air quality standards, and, of course, I previously mentioned the health impact of the particulate toxic emissions.

MR. RATLIFF: Do you have reason to believe that they might more commonly run on summer days?

DR. LIM: Typically power outages are more numerous and more extensive during the summer months when there are major loads on cooling and air conditioning needs. And therefore a bigger load on the electric grid system, and more likelihood of extended outages.

And, as such, these backup generators would tend to operate much longer hours and more frequently during that period of time.

MR. RATLIFF: Why don't the limitations on the number of hours of usage alleviate your concerns about the backup generators?

DR. LIM: Even considering that if they did not operate, these engines typically require regular operation for testing and maintenance for reliability. And, as such, even modeling the emission results of particulate from these limited hours of operation testing, with limited hours of

operation during actual emergency, would still lead to a significant or potentially significant health impact.

MR. RATLIFF: Do the ISO's load shedding agreements exacerbate this problem?

DR. LIM: I believe it would because the load shedding agreements that the ISO is promoting includes obtaining as many generators as possible to either --

MR. BOYD: How's that relevant? That's an existing --

HEARING OFFICER FAY: Excuse me. I said we're going to let the witness testify --

MR. BOYD: No, you --

HEARING OFFICER FAY: You can bring this up on cross-examination. Please do not interrupt.

Proceed.

DR. LIM: Would you repeat your question?

MR. RATLIFF: My question was how did the load shedding agreements make this situation worse.

DR. LIM: Load shedding requests by the ISO essentially requests increased operation of these standby generators, either for direct

feeding to the electric grid, or more likely the case where a company removes their load requirements in the shed from the grid, but in turn operate their own standby generation for their own electric use.

And as noted before, these standby generators have a much higher undesirable emissions.

MR. RATLIFF: Does the District currently know how much self generation is going on with diesel backup generators?

DR. LIM: We are undertaking studies and investigations on that matter. As I said, in the past these engines were exempt, and as such, we don't know the precise location of these. But they're typically in office buildings, industrial and commercial facilities all over the Bay Area, as well as the rest of California.

MR. RATLIFF: Why is the District concerned about current proliferation of diesel backup generators?

DR. LIM: We know from the studies by the State of California the large number of these standby engines, they produce emissions that potentially, under extensive operating conditions,

lead to actually higher ozone precursor and nitrogen oxide emissions than even in central power plants.

We are also concerned about the particulate matter which are toxic emissions.

MR. RATLIFF: Is it your impression that large firms in San Jose are adding numerous new large diesel engines?

DR. LIM: I think that's a correct statement for the entire Bay Area.

MR. RATLIFF: Are you familiar with the project that was recently licensed in this near vicinity called Cisco CVRP Project?

DR. LIM: The District has not received any formal application for such a project. I'm aware that project has been proposed, and I believe that an EIR investigation is in process or has been completed.

MR. RATLIFF: You were present yesterday at yesterday's hearing, during the cross-examination of the applicant's witnesses, I believe. And did you hear at that time the concern about the health of the Metcalf Power Plant Project on the large Cisco campus?

DR. LIM: Yes.

MR. RATLIFF: In your professional opinion would the health impact of the diesel backup generators, I believe they're six in number, 1.2 megawatts in size, would those constitute a higher health risk to the Cisco campus than the power plant project, itself?

MR. BEERS: I'm going to object to this. I think a foundation should be laid for this kind of testimony. We're now getting really completely beyond the written testimony that was handed out. And I think this is becoming --

HEARING OFFICER FAY: Mr. Ratliff, can you lay a foundation?

MR. RATLIFF: Well, I think --

MR. AJLOUNY: Well, now I object that he got to object.

(Laughter.)

MR. AJLOUNY: I mean no offense, Roger, but I mean this is not fair. I'm just as equal --

MR. RATLIFF: Agree, I mean I think we decided the objections are going to be held to the end here --

MR. AJLOUNY: Yeah.

MR. RATLIFF: -- and we're going to finish the testimony, and then we're going to

decide --

MR. AJLOUNY: Yeah, let him dig himself in a hole --

MR. RATLIFF: -- whether or not it's going to be admitted.

INTERVENOR: -- same, it wasn't a question that was decided. It was decided for us.

DR. WONG: We are all here listening to something that's not related to air quality and health.

MR. RATLIFF: Oh, I think it's very related to air quality and health.

(Parties speaking simultaneously.)

MR. AJLOUNY: I say let him dig himself in a hole and then we'll ask to strike it.

HEARING OFFICER FAY: If Mr. Ratliff cannot tie it in as --

DR. WONG: -- can be said in one sentence.

HEARING OFFICER FAY: Excuse me. If Mr. Ratliff cannot tie it in, then the Committee would not be persuaded that it's relevant.

MR. RATLIFF: Well, let me tie it in. The CVRP has filed extensive testimony in this case expressing a concern about the public health

impact of the Metcalf facility on the campus which they have proposed.

They have specifically pointed out that their workers will be on that campus. They have specifically pointed out that they're going to have a large health care center on that campus. And have expressed a great deal of anxiety about the impacts of the project, the public health impacts of toxic air contaminants on the users of that campus.

What I have asked for is a comparison, a relative comparison of the witness if he knows of, in fact, what the environmental impact report describes as the diesel backup generators which would be part of the Cisco project, which would, in fact, constitute a higher risk for those inhabitants of the campus --

MR. BEERS: Objection. How do you know that? What time will these testings be done?

HEARING OFFICER FAY: Okay, well, if the witness can establish the basis for his assumptions, then that will be acceptable and --

MR. RATLIFF: Fine, Mr. Lim, can --

HEARING OFFICER FAY: -- I'll overrule your objection.

MR. RATLIFF: -- are you familiar with the EIR for the CVRP Metcalf project?

DR. LIM: I'm aware that an EIR has been done, and I have read the relevant section which identified as part of the proposal backup generators for that facility.

MR. RATLIFF: And do you know the size and number of generators involved in the environmental impact report description for that project?

DR. LIM: The description says six engines approximately 1.2 megawatts apiece.

MR. RATLIFF: In your estimation as an expert on health risk assessment, do you think those six megawatts, six 1.2 megawatt backup generators would constitute a higher health risk from toxic air contaminants to the members and workers, the children that would inhabit that campus than would the MEC project?

DR. LIM: First, let me say that the health risk screening assessments that we do at the Air District rely on emissions estimates or impact offsite. In other words, the District does not have authority within the property of a facility.

However, even off facility, the impact of the operation of those six diesel engines would be expected to be far higher than the potential impact from a central power plant such as the Metcalf facility.

We have evaluated approximately 50 backup generators in the course of our recent work at the Air District, and engines of this size typically result in a health risk impact or increased cancer risk approximately five to ten in a million for a single diesel engine. And that is far higher than the projected health impact or increased cancer risk from the central plant that's under discussion here today.

MR. RATLIFF: Do you think your answer would change even if those generators are not utilized for emergency backup?

DR. LIM: As I spoke earlier, these engines require several hours of operation weekly or biweekly for testing and maintenance. And even including the typical testing time of 30 to 50 hours, which is typical for operation of these standby engines, the risk would still be in the high end magnitude.

MR. RATLIFF: Thank you, Mr. Lim, I have

no further questions.

And as far as I'm concerned the whole panel can be --

HEARING OFFICER FAY: Okay, we're going to take a --

MR. RATLIFF: One small housekeeping, I forgot to ask Mr. Badr if he had any changes to make in his testimony. He had some rather small, but substantive, changes he wanted to make.

Do you want to take that now or --

HEARING OFFICER FAY: Yes, why don't we take that now.

MR. RATLIFF: Mr. Badr, if we could go back to you for a moment, could you tell us what changes you wanted to identify in your testimony?

MR. BADR: Yes. On page 47, the second paragraph, it stated appendix B, in the second line should change to be appendix A, please. That's a very minor.

On page 48 --

INTERVENOR: Slow down, please. Page 47 what?

MR. BADR: Page 47, yes.

HEARING OFFICER FAY: And since people may be wanting to cross-examine on this

information, be sure that you cite it well, get the page number and paragraph, et cetera.

MR. BADR: It's page 47, sir. That first paragraph, second line, the first letter of the second line is B, it should be changed to A.

HEARING OFFICER FAY: Are there other corrections?

MR. BADR: Yes. On page 48, the second line on the page from the top, it says: all the provided offsets. I would like to change that to strike "all" and change it to "the majority of the provided offsets." And I will tell you why in a minute.

On page 49, on table 11, air quality table 11, under the company name Folger's Coffee, the location is South San Jose, should be South San Francisco instead of San Jose.

On page 50, again on number 6, it says "also Calpine/Bechtel is providing" strike "all" and make it "the majority of the project offsets from San Jose."

Then on page 62, air condition air quality 24D, would like to change the number from 510 pounds of PM10 per day to 557 -- 571.4. 571.4.

HEARING OFFICER FAY: So D, as in dog, instead of 510 --

MR. BADR: Yes, 571.4.

HEARING OFFICER FAY: -- 571.4.

MR. BADR: Correct. And also another change in that condition, air quality 24, on the second line, "including emissions generated" I would like to add "from cooling tower and during gas turbines, as stated."

MR. HARRIS: I'm sorry, Magdy, could you repeat that one, please?

MR. BADR: Yes. Air quality 24, on the second line it says "including emissions generated" I would like to add "from cooling towers and during gas turbines." Because the emissions associated with the cooling tower is added to it, so the 571.4 is the total.

And the last change, Mr. Fay, will be on page 77, the first line in the page says, "Folger's Coffee in San Jose", strike "San Jose" and add "South San Francisco."

INTERVENOR: Page 74?

MR. BADR: 77. I would like also to add, sir, that the reason for these changes that we know about the source after the fact, so wanted

to make the record clear, the location of that source is in South San Francisco, and it's not in San Jose. So we'd like to clear the record up.

HEARING OFFICER FAY: And is your recognition of the location of the Folger's Coffee offsets in South San Francisco rather than San Jose, is that fact the reason that you changed the -- made the other quantitative changes to the numbers?

MR. BADR: No, the quantitative changes to air quality 24 was because we added the cooling tower emissions into daily emissions. So the 510 is not including cooling tower, the 571 is including cooling tower emissions. And that will match what we said on table 5 in air quality in my testimony.

HEARING OFFICER FAY: Okay. Thank you. Any further corrections?

MR. BADR: No.

HEARING OFFICER FAY: All right. Does that complete your direct testimony?

MR. RATLIFF: Yes.

HEARING OFFICER FAY: All right. Well, Mr. Ratliff, what I propose is that after cross-examination of the panel, hopefully today, you may

move all the testimony, with the exception of Mr. Lim's -- Dr. Lim's, and we'll withhold moving that until after he's returned on March 12th.

MR. RATLIFF: That's fine.

HEARING OFFICER FAY: And I'd like to go off the record now.

(Brief recess.)

HEARING OFFICER FAY: During the break I was contacted by a number of parties, as well as people in the audience.

There's been two requests for public comment. And one lady is a senior and I'd like to accommodate her comfort. She's a nearby resident.

And another lady, unfortunately, had to leave, but she's given Ms. Cord her comments. And so we could take that comment at that time.

In addition, Issa voiced concern about having the ability to actually make use of the transcript before cross-examining --

MR. AJLOUNY: Are we on the record?

HEARING OFFICER FAY: Yes, we're on the record. We're on the record. -- make use of the transcript before preparing his cross-examination for Dr. Lim.

And what I propose is the following: To

get maximum time for everybody to have access to that transcript, we will accelerate the transcript order and expedite -- James --

(Laughter.)

HEARING OFFICER FAY: So that's an expedited transcript as a Committee order. And in addition, we will delay Dr. Lim's availability until the afternoon of March 16th.

So while we will hold the policy hearing regarding override questions, et cetera, in the evening of the 16th, in the afternoon of the 16th we would have Dr. Lim available for cross-examination.

And I believe that gives about the maximum time that we can achieve to prepare for that. Comments? Mr. --

MR. WILLIAMS: A few comments. It appeared, if I recall correctly, the Mayor's meeting on power issues is going to be the evening of the 16th.

HEARING OFFICER FAY: I believe it's during the day, and I was told it's going to end at 5:00.

MS. CORD: It is during the day and I wanted to clarify for the record I'm sorry -- that

your meeting -- is going to be in the evening on the 16th, is that --

HEARING OFFICER FAY: I can't hear you.

MS. CORD: Your meeting on this -- your override hearing on the 16th is going to be in the evening?

HEARING OFFICER FAY: Yes. But, what I just --

MS. CORD: Thank you. The Mayor's -- the Mayor's energy summit will be during the day on the 16th, for the record. Thank you very much.

HEARING OFFICER FAY: Great, thank you. We were told it would end by 5:00, is that correct?

MS. CORD: Yes.

HEARING OFFICER FAY: Okay. And so while this availability of Dr. Lim would conflict with that summit, it is the latest date that we can make him available. Issa.

MR. AJLOUNY: Okay, for the record I'm asking -- I'm objecting to the testimony. I'm asking for transcripts or the testimony to be rewritten to put all the details in there. And at the bare minimum, have two weeks from when receiving that testimony to look at it for cross-

examination.

And that's what I'm asking for consideration on. And I understood what you just said, but I don't feel it meets those qualifications. So for the record I just want it to be known of what I'm asking for.

HEARING OFFICER FAY: Okay.

MR. AJLOUNY: All right.

HEARING OFFICER FAY: Thank you.

MR. BEERS: And I've got a different request. I really think it's fundamentally unfair to be introducing testimony in this manner at the last minute.

I'd like to have Mr. Lim come back tomorrow and be available for cross-examination by anybody that wants to cross-examine him tomorrow and on the 16th, if that becomes necessary. But I really don't see the reason for -- there's no reason that's been presented for the delay in presenting this testimony in a way that's forcing everybody to come back on air quality at another date in the future.

I think the testimony can be dealt with pretty quickly. And I'd like an opportunity to cross-examine him tomorrow.

MR. AJLOUNY: That's the difference in skill level.

(Laughter.)

MR. HARRIS: Well, I think I want to point out, as well, that there have been filings by CVRP on noise and hazardous waste that have been filed late, after those deadlines. And they certainly weren't two weeks before any hearings.

MR. BEERS: They were sufficiently in advance of the hearings that they could be dealt with at the hearings.

MR. HARRIS: As Mr. Fay proposes for this case, as well, I think.

MR. BEERS: Well, we're --

HEARING OFFICER FAY: Okay, Mr. Beers, are you prepared to cross-examine Dr. Lim tonight?

MR. BEERS: I'm prepared to undertake some cross-examination of him tonight. But I have some materials that I'd like to obtain before I can complete that examination. I'll obtain those materials overnight.

HEARING OFFICER FAY: Okay, we will take into consideration the concerns you've all voiced. And obviously we're sensitive to the needs of the public, because they can't turn these things

around as quickly as the professional attorneys can --

MR. BEERS: And I'm not suggesting that the public be deprived of the opportunity to conduct examination at a later date on the 16th. And I realize there may be some inconvenience to Mr. Lim, having to come back tomorrow. He may have to come back tomorrow anyway.

But I think there's a substantial inconvenience that's resulting from having put this testimony forward at the very last minute without giving anybody an opportunity to do any advance preparation.

The little bit of preparation I've been able to do just in the last several minutes suggests that this testimony is fairly misguided, and I think can be dealt with pretty quickly.

HEARING OFFICER FAY: All right, thank you. Ms. Dent.

MS. DENT: I have an objection to the testimony in the sense that no one has been permitted the opportunity to present rebuttal testimony if they want to. And I won't know if I want to until I've had a chance to review the transcript.

Because the testimony that was presented here today went way beyond the written testimony. I mean the written testimony was three short paragraphs. We heard 15 minutes here today or 20 minutes. Once you review the transcript the parties may want to file rebuttal testimony.

And I also want to note for the record that the testimony of the witness was not agency testimony. It was not testimony related to the BAAQMD permit, related to the determination of compliance. It was other testimony that the CEC Staff wished to introduce.

I'm not going to -- I didn't object to it. It came in. I think it should be subject to motion to strike. And I think it should also be subject to any party being permitted to introduce rebuttal testimony if they want to.

MR. AJLOUNY: And, Mr. Fay, just one more comment. I would ask you to ask the Commission Staff to make life a little easier for all of us, of just striking this whole thing and then, you know, it would be the right and the fair thing to do of what we've been taught in this whole process. And I'm just, you know, the kindest words, if you could express that to Mr. --

MS. CORD: Ratliff.

MR. AJLOUNY: -- Ratliff, okay, thank you.

HEARING OFFICER FAY: All right, thank you. Any other comments before we take the public comments? Yes, Mr. Scholz.

MR. SCHOLZ: January 9th at the prehearing conference Mr. Ratliff indicated that Mr. Lim would be providing this testimony. He did not provide it. He surprised us today with it.

Many of the intervenors would have loved to be able to put testimony on. We've indicated we would like to put testimony on. Due to immense time constraints and the money that it would take to put that testimony on, we have failed to put that on.

But you were given the latitude to put yours on, perhaps to those same constraints that the public would be put on. And I just think that's extremely unfair and I would hope that that would be consideration to strike that testimony.

HEARING OFFICER FAY: Okay, Mr. Garbett.

MR. GARBETT: The public would like to go and object and ask a motion to strike all of the testimony today, and to bring him back with

prepared testimony at the future event. Therefore it will not contaminate the procedures, other than shall we say the objectors were not given the right to object today. Thank you.

MR. RATLIFF: Mr. Fay, --

HEARING OFFICER FAY: I'm sorry, Mr. Ratliff, hold on. Let's get all the objections and comments. Mr. Boyd.

MR. BOYD: Okay, I also care to support striking that testimony from the record, as well. You've placed an unusual burden on the public to participation in this process, and then to basically look the other way for your witnesses. I think it's wrong and it provides further evidence to our claim that the process precludes meaningful participation by the public.

Thank you.

HEARING OFFICER FAY: Okay, I want to clarify something. First of all, the Committee has no witnesses. The staff brought these people from the District.

However, whether the staff chose to sponsor them or not, every major agency in every siting case has a major role, whether they intervene or not, they are one of the 500-pound

gorillas at the table.

And there's no way that any power plant in the Bay Area can be sited without BAAQMD having major input into the case. So, BAAQMD is here regardless. I just want to make that clear.

Yes, sir.

MR. KWONG: Mr. Fay, Robert Kwong, District Counsel for the Bay Area Air Quality Management District.

A lot has been said about the testimony provided by the three witnesses that testified here. And I believe this District needs to be heard on the matter of receiving Dr. Ken Lim's testimony into evidence.

It was my understanding that the original plan was to have him return for cross-examination. That is not a problem for us or for Dr. Lim.

He obviously, as Mr. Beers has mentioned, is a busy man, and also has schedules to meet. And we would prefer that his cross-examination be limited to one day. So, it's up to the intervenors in this case to decide. Do you want him to come back tomorrow and face cross-examination, or on the 16th, as was, I believe,

originally planned?

I believe that going to the 16th would afford the intervenors sufficient time to digest his direct examination, and also to obtain any other additional information they feel they need to properly cross-examine him.

So, it would be our preference just to choose the one day, the 16th, to do so.

In the request for leave to file late testimony, which is filed with Dr. Lim's testimony, there are three key points that the District wants to make in requesting that leave to file late testimony.

Number one, and you've alluded to that, Mr. Fay, is that the Bay Area Air Quality Management District is the primary governmental agency for purposes of determining and insuring public health in the air quality arena for the San Francisco Bay Area.

Our jurisdiction covers the nine counties surrounding the Bay Area. It is the fourth largest metropolitan area, in terms of population, in the country. We take our duties very seriously under the Health and Safety Code, as well as under the federal Clean Air Act.

We have charters and mandates to insure that not only criteria contaminants are maintained and are being reduced to the point that we can get to the ambient air quality standards, but to also insure public health from a toxic air contaminant standpoint.

So, first of all, we have a stake in this entire process. And major facilities, such as Metcalf, are of great interest to the District from an air quality and public health standpoint.

Secondly, the District, like every other local district in the State of California, is embroiled in energy and air quality issues. It is taking an inordinate amount of time for this District to respond quickly, adequately and correctly to those exigencies caused by the energy crisis.

Dr. Lim is a key person in the District's effort to do so. His time and his energies have been pulled probably 15 different ways over the last two months.

So, it is with that, more as an explanation, to say well, why is it taking so long to do this. We're trying to do everything, Mr. Fay, on the energy crisis and air quality.

So, I don't think it's inappropriate or unfair that we have offered this testimony at this juncture in the proceedings.

And, finally, the District is in a unique position to offer this Commission, the California Energy Commission, information that is relevant to the different types of power sources that are available, that can come in and cure this crisis, as well as the air quality impacts that those different choices have.

It is something that I think is relevant to these proceedings; relevant to everyone in this room. And therefore, the District believes that it has a place to offer this testimony. And that it should be received.

I will defer any further argument until such time as obviously the City of San Jose has suggested they're going to make a motion to strike that testimony, and I will renew my arguments on behalf of the District at that point in time.

Thank you.

HEARING OFFICER FAY: Thank you. The Committee is not going to rule today. But we do want to hear from everybody. Ms. Cord.

MS. CORD: Thank --

MS. DENT: I want to --

MS. CORD: Oh, go ahead, Molli.

MS. DENT: I want to clarify for the record that I did not say I was going to make a motion to strike the testimony. I said I wanted to reserve the right to make a motion to --

HEARING OFFICER FAY: Understood.

MS. DENT: -- strike the testimony. I want the opportunity to review the testimony. The only way I'm going to be able to do that is whenever the transcript is available.

I also want the opportunity to be able to rebut the testimony. The District counsel has just really confirmed that the testimony is not necessarily on the issue of air quality. The testimony is just as much on the issue of alternatives and on the issue of local system effects.

And I want the opportunity, if I want to, to be able to file rebuttal testimony.

PRESIDING MEMBER LAURIE: Okay, as Mr. Fay noted, I'm not sure we're not going to rule today. We're not going to rule at this moment. We will confer and I understand everybody's position, and we'll advise early as possible.

I think we can do it sooner rather than later.

HEARING OFFICER FAY: Thank you. And, Ms. Cord, --

MS. CORD: Yeah, I had some comments to make. First of all, I think if we're going to vacate the rules in this proceeding, in all equity we should vacate the rules for all intervenors, for all parties. And that any testimony can come in at any time without any restriction.

And if you're going to rule that way in this case, I would suggest in equity all intervenors and all parties have the same rules.

I would like to suggest that -- I don't know this gentleman's name, the attorney for the Air Quality District, since he's offering a choice to the intervenors. I think the intervenors are pretty clear that there's an interest in striking this testimony.

The option of having their witness available on March 16th, I don't believe March 16th is an evidentiary hearing. We've already heard that some of the intervenors are not available that day.

PRESIDING MEMBER LAURIE: We could make

it an evidentiary hearing day.

HEARING OFFICER FAY: If Dr. Lim is here, that portion will be noticed as an evidentiary hearing. And it will be part of the evidentiary record.

MS. CORD: Well, I understand that's a date that's been under some discussion. You've already heard that some intervenors are not available that date, and if you're going to now make it an evidentiary hearing to provide an opportunity for Dr. Lim to provide testimony that, again, is late filed and not even appropriate to be heard at all, I don't think that's giving a fair opportunity to the intervenors.

HEARING OFFICER FAY: Okay. The idea was to respond to Issa's voiced request, and I assume other intervenors would feel the same, to have plenty of time to prepare for the cross-examination of Dr. Lim.

SPEAKER: Mr. Fay, could I be heard --

HEARING OFFICER FAY: Go ahead.

MS. CORD: Yeah, I'd like to --

HEARING OFFICER FAY: One more --

MS. CORD: -- continue that although -- I'm sorry, is it --

MR. KWONG: Mr. Kwong.

MS. CORD: -- Kwong, Mr. Kwong has suggested, has told us that this is the primary governmental agency. I think that in that case in that they have a stake in this case, they've had over two years to look at this project.

And if they couldn't find a way to provide testimony until yesterday that's very surprising to me. It appears to underlie their -- what this gentleman is stating, it must not be very important to them, or they would have spent some time in the last two years providing us with some of this information.

I think this is a public agency that has staff, resources and legal counsel. These intervenors before you today have no staff, no resources and no legal counsel, and yet we've managed, in every instance, to follow the rules that you've set forth.

And I'd be very surprised to see public agencies being given some priority in ways that we are not, when we have struggled to meet these requirements that have been very onerous on us members of the public, quite frankly, the intervenors in this case.

I think in terms of why they're here testifying about this project, if they feel that there are air concerns that large power plants would be better than diesel generators, they ought to be testifying to the entire Energy Commission.

I don't believe that they're addressing these issues at the other 36 power plant projects that are before the Energy Commission. Why they're coming to this one, I don't know. I think if they are -- if their intention is to tell the Commissioners that big power plants are better for air quality than small diesel generators, they ought to go up to Sacramento and address the Commission. That would be the appropriate forum for that information.

I don't think that there's been an alternate suggested for the Metcalf project of diesel generation. And therefore I'm not sure how this testimony even qualifies.

I want to lastly suggest not only that this testimony be stricken from the record, but I'd like to also ask the Committee would admonish the CEC Staff attorney to please follow the rules, if there are going to be rules.

And I would like to, just as one last

comment, when I heard earlier that we -- Mr. Ratliff referring to Mr. Radis' testimony and then to Suzanne Wong's testimony, her name is Dr. Wong. If you're going to use titles, I think it would be appropriate for all individuals to be given the same titles.

MR. RATLIFF: I believe I did correct that, and I apologized --

MS. CORD: Thank you.

MR. RATLIFF: -- for --

HEARING OFFICER FAY: All right, thank you. Mr. -- no, I'm sorry, --

MR. AJLOUNY: Well, I am --

HEARING OFFICER FAY: -- that's all. Now we have a courtesy to the lady who has come and spent her time, we'd like to take public comment now. And I think Ms. Cord has a comment after that on behalf of somebody else.

So, could somebody introduce --

MR. AJLOUNY: I have a very serious request. If this is going to be allowed, I talked to Kisabuli this morning, and I'd like to bring him in as a witness.

HEARING OFFICER FAY: No, that's out of order, Issa, please. We're taking public comment

now.

MR. AJLOUNY: It's a circus, we might as well keep this circus going.

HEARING OFFICER FAY: Issa, you're out of order.

(Parties speaking simultaneously.)

MR. AJLOUNY: Exactly.

MS. CORD: I'd like to introduce Mrs. Ruth Malech, who owns one of the closest properties to the proposed power plant site. Her family has been residents of Coyote Valley since 1864, I believe. Thank you.

MRS. MALECH: I'm not much for public speaking, I get kind of scared. But I'm the oldest living member of the Stevens Family, and it's rather interesting. My grandfather came from Vermont and came by boat. And he landed in San Francisco, and he mended sheets because he got sick, chicken pox or small pox or something.

He mended sheets in the hotels to pay his hotel room. And he lived in northern California for six or seven years. And he decided to go to southern California where he could buy a ranch for $160 with a fence around it.

So he stopped in Coyote to see a friend,

and they said, well, there's 160 acres across the creek, you go look at it. So he went. And he bought, I think he bought it for $3000 and a shotgun.

(Laughter.)

MRS. MALECH: And so I'm the oldest living member of the Stevens Family. I'll be 91 next month. And somebody in the Stevens Family has always lived there.

Now, I am concerned about pollution. We have more than we want right now, because when the Monterey Road went through, the 101, my curtains can get black like coal dust. Well, if there's any more pollution I'll be turned into a black man, I guess.

But we don't need more pollution, it's not healthy. It's not good. It's a nuisance. And the winds blow pretty strong along the hills. And I understand they blow south in the mornings and at night they blow north, so you get pollution both ways.

I'm not the only one over there. There's the Coyote Ranch, there's the shooting range, there's the County facility. I don't know if it's alcoholic or dope or what it is, but I'm

the last one on the road. And I've lived there since 1881. That's when my grandfather built the house I live in.

So that's my main concern. I'm not too concerned about the appearance of these buildings, but I don't think they'll be any decoration. And I am concerned about pollutants.

And I've had asbestive asthma and bronchitis even now with what there is. So, that is my main concern. And all the people here in Coyote and the surrounding area like south San Jose, they're all very concerned about that.

So, that's all I have to say.

MR. AJLOUNY: -- Coyote Hill.

MRS. MALECH: What?

MR. AJLOUNY: Where you live. Tell them where you live.

MRS. MALECH: Yeah, I live over here at the Coyote -- well, right now it's the Malech Ranch, because in 1928, 29 I married Earl Malech. You may have heard of him. And so now it's the Malech Ranch.

But I'm into the fourth generation walking the same grounds my grandfather walked on. So, I don't know, the highway and the bicycle path

have taken a number of acres. So I only have about 50 left out of 160.

But I'm not too concerned about that. We still have plenty of room to walk around on. But it's the pollution that really is bad. You once get it you'll never get rid of it, you know. So I guess that's about all I have to say. Come see me sometime.

(Laughter.)

(Applause.)

MR. RATLIFF: Mr. Fay, I realize that you want to move on to another thing, and I understand that, and I don't want to prolong it, but I did want to make at least one statement that I hope would clarify.

HEARING OFFICER FAY: Regarding the public comment, because we have one more public comment to take.

MR. RATLIFF: Oh, I'm sorry.

HEARING OFFICER FAY: Yeah, can we just hold that. Ms. Cord, did you want to, on behalf of Ms. Hamilton, --

MS. CORD: Yes, I did have a public comment from Joan Denz-Hamilton who asked me to represent her here. She had to leave with her

kids.

She evidently -- she is, in fact, an employee of KBAY and they have emergency generators, diesel generators on that site, so she knows something about it. And her comment is:

> Metcalf Energy Center would have no impact on how often emergency diesel generators are run for maintenance. They will continue to be maintained as they have been. Emergency generators are only used a few hours per year, if at all. Including testimony about emergency generators has no relevance."

That's from Joan Denz-Hamilton. Thank you.

HEARING OFFICER FAY: Okay, thank you.

MS. CORD: I also just wanted to take the opportunity to thank Mrs. Malech for coming out today to share her concerns with us.

HEARING OFFICER FAY: I'd like to thank Mrs. Malech, too. Thank you for coming.

Mr. Ratliff.

MR. RATLIFF: I guess I didn't want to prolong this discussion; obviously we do need to move on. But, I wanted to say that obviously there are people here who didn't like Mr. Lim's

testimony.

And I think they seem to be operating under the supposition that if his testimony is not entered as testimony that it simply disappears. But this agency has always, as it must, shown great deference to other state agencies such as CARB or federal agencies, such as EPA and the Fish and Wildlife Service and the Bay Area District, or any other air district, because of their particular roles in our proceedings.

When they file comments or express opinions to us in letters they are given a very high level of deference, even though they're never subjected to cross-examination.

My thought was since this testimony was clearly going to be controversial it would be better that the public had the opportunity to cross-examine the basis for those opinions that were expressed.

If this testimony is not accepted as evidence, that is testimonial in nature, it will nevertheless be in the record as evidence which I think has some persuasive value to the Commission, or could have.

And I think it would be, frankly,

unfortunate for the public not to have the opportunity to cross-examine for the very reason that they do object to the evidence.

HEARING OFFICER FAY: Thank you. I think that's a good and interesting point. As I tried to clarify, the District is not just another intervenor. In fact, they're not an intervenor. They're an agency that has a legal position in our proceeding.

And they make their comments known to us, and their comments have great weight regardless of what anybody else has to say about it. Mr. Beers?

MR. BEERS: I'd like to distinguish what we've heard, for example, from the presentation by Mr. Hill, from the attempted testimony by Mr. Lim.

Mr. Hill was here serving the interests of the District in presenting its FDOC for purposes of this Commission's considering it and entering it into the record. I understand that to be an assigned function of the District in this kind of a proceeding.

Mr. Lim is here because he read an EIR. Not because -- that he's involved in any regulatory issue that relates to the matter of his

testimony insofar as it concerns a comparison with CVRP.

The comment that was made earlier that this issue has nothing to do with this power plant siting proceeding, I think, should be self evident, because there really is no choice to be made here under any circumstances between the MEC facility or diesel-powered generators that are standby generators in the circumstances that were raised here.

So, I'm really astonished that Mr. Ratliff would characterize this as a situation in which because he knew it was going to be controversial he chose to do it this way. It really disadvantages everybody.

Because I brought a witness who's going to be prepared to testify at call during these three days of hearings. I'm here for these three days of hearings in order to cross-examine and present that testimony on behalf of my client on the assigned dates.

And what it means is we have to come back for yet another time as one of the options, simply to hear Mr. Lim. And I really think that's fair because I think there's no stretch of any

interpretation that his testimony could fit into the usual role that the Bay Area Air Quality Management District plays for this agency.

HEARING OFFICER FAY: Okay.

MR. HARRIS: Mr. Fay, I want to point out for the edification of folks here that CVRP promulgated a data request on us, that's been identified as exhibit number 88. Attachment 1A to that exhibit 88, which was previously moved in, deals with diesel standby generation in the Bay Area District.

And many of the numbers that were presented in the testimony by Dr. Lim were in that document that was part of testimony for this proceeding, and has already been moved into evidence. And so I just wanted to point out that that evidence is there, and it was done in response to a data request by CVRP.

HEARING OFFICER FAY: All right, thank you, Mr. Harris.

Now I'd like to ask the City of Morgan Hill what their recommendation is so that we can be sure to get their testimony into the record.

MS. LEICHTER: We have our witnesses present and they are ready to testify and be

presented for cross-examination.

HEARING OFFICER FAY: All right. Let's go off the record.

(Off the record.)

HEARING OFFICER FAY: Yes, Mr. Harris.

MR. HARRIS: My procedural matter is that I received revised testimony from Morgan Hill at 3:00 p.m. on Tuesday via facsimile. Insuring that there's not a double standard here with prefiled testimony, taking a look at that testimony I'm of the opinion that much of it is really in the form of surrebuttal and not an amendment to change clerical errors, substantive new information.

So, given the respect we've all gained now for prefiled testimony I'm going to reserve the right to strike the revised testimony, and I will either make that motion or withdraw it at the end of the presentation by the City of Morgan Hill.

HEARING OFFICER FAY: All right. Your motion is noted.

Okay, please proceed.

MS. LEICHTER: Could I ask to have the witnesses sworn, please.

HEARING OFFICER FAY: Please swear the panel.

Whereupon,

CHIH-PEI CHANG, QING WANG and ROBERT HANEY were called as witnesses herein, and after first having been duly sworn, were examined and testified as follows:

MS. LEICHTER: Thank you. I'd like to introduce to my immediate left, Professor Chih-Pei Chang; sitting to his left, immediate left, Professor Robert Haney; and sitting to his immediate left, Professor Qing Wang. All of the United States Naval Post-Graduate Institute in Monterey, California.

They are testifying as a panel. They have some of the joint testimonies. I have not received notice of any objection to that to date. So I will proceed to present the testimony on that basis.

DIRECT EXAMINATION

BY MS. LEICHTER:

Q I'd like to ask each of them to briefly state their educational and expertise backgrounds for the record, starting with --

PRESIDING MEMBER LAURIE: Can we get a

stipulation from the parties as to the expertise of these witnesses, is there any objection?

MR. HARRIS: Expertise as meteorologists? As opposed to air emissions modelers.

PRESIDING MEMBER LAURIE: Expertise as to what's contained in their presubmitted testimony.

MR. HARRIS: I'm willing to stipulate to their expertise as meteorologists as described in their prefiled testimony.

HEARING OFFICER FAY: Any objection to that stipulation?

MS. LEICHTER: I have an objection to his characterization of what Commissioner Laurie just stated. Either they're offered as experts for their entire report, and not to the qualification as only to meteorological testimony.

PRESIDING MEMBER LAURIE: Are you objecting to their expertise to testify to everything as contained in their submitted testimony? If you're offering an objection, then fine, then we'll take the next 20 minutes going through what they already have contained in their prepared submittal.

MR. HARRIS: I actually didn't mean this to be a big deal. My point was my understanding these gentlemen are meteorologists, gentlemen and I believe one lady, I apologize -- doctors -- are experts --

MS. LEICHTER: Professors.

MR. HARRIS: -- on meteorology, and we would stipulate to that expertise as described in their qualifications.

MS. LEICHTER: This is not simply a semantical difference. Either they're qualified to enter their report and testify as to its contents or they're not.

PRESIDING MEMBER LAURIE: Why don't you please go ahead and if there's no stipulation, prepare your -- ask your questions as necessary, and we'll go ahead and listen to their expertise, to their qualifications.

MS. LEICHTER: So --

PRESIDING MEMBER LAURIE: Go ahead and ask them their qualifications if you -- obviously there's a need.

MS. LEICHTER: So applicant's attorney is not willing to stipulate that they --

PRESIDING MEMBER LAURIE: Just -- I --

just do as --

MS. LEICHTER: Okay.

PRESIDING MEMBER LAURIE: -- I directed. I'm sorry I interrupted in the first place.

MS. LEICHTER: Okay, thank you, Commissioner.

BY MS. LEICHTER:

Q Could each of you briefly state your educational and experience backgrounds for the record, please, starting with Professor Chang.

DR. CHANG: I received my PhD from University of Washington in 1972 and I've been a Professor at Naval Post Graduate School since then.

My specialty is on atmospheric thermodynamics, dynamic circulation and modeling. I'm an Environmental Science Adviser for the Navy. I'm a Fellow American Meteorological Society. And I received the Society's 1993 Messenger Award.

I have advise meteorology and air modeling 60 students at UC Davis University, Hawaii University. I serve as review committees for War Meteorological Organization, and National Oceanic and Atmospheric Administration at Columbia University.

I have been a Visiting Professor at San Jose State. I have Editorial Appointments from Journal Atmospheric Sciences, Advances in Atmospheric Sciences for scientific publication and Oxford University Press.

DR. HANEY: Thank you, my name is Robert Haney. I'm a Professor at the Naval Post Graduate School in Monterey. I just wanted to say a little bit about the Naval Post Graduate School. It's the Graduate University of the Navy Academy. We give masters and PhD degrees to students in the Navy and Foreign Services.

I received my PhD in 1970 from the University of California Los Angeles. I joined the Navy School shortly thereafter. I've been there for 30 years. I'm teaching in the area of numerical modeling and boundary layer meteorology. I also teach in those areas. My research is funded by the Office of Naval Research and the National Science Foundation.

I've been an Editor of the American Meteorological Society Journals in atmosphere and ocean. And I've served as Advisors for the World Meteorological Organization in other branches of the Navy. I've been a Visiting Professor at

several places, University of Hawaii, and also the University of the Balearic Islands in Spain.

DR. WANG: My name is Quin Wang. I'm an Assistant Professor in the Meteorology Department of the Naval Post Graduate School. I received my doctorate degree from the Pennsylvania State University in 1993.

From 1993 to 1995 I was a Research Fellow at the National Center for Atmospheric Research. My specialty is in turbulent mixing and air pollution. I currently direct a National Science Foundation sponsored project to study the California coastal bounderla characteristics.

The bounderla is the lower 1 kilometer of the atmosphere where air pollution pollutants are trapped and mixed.

I have been appointed by the American Meteorological Society to the Scientific Steering Committee on Turbulence and Bounderla. One of our Committee's activity is to co-sponsor national and international conferences on new development of bounderla meteorology and air pollution meteorology. Thanks.

MS. LEICHTER: At this time I would like to offer the three witnesses as with expertise

sufficient to bolster the contents of the report which we have submitted as rebuttal testimony.

HEARING OFFICER FAY: Fine, proceed. Are they going to summarize their testimony?

MS. LEICHTER: Yes, they are. I just wanted to make sure they were qualified to do so.

We do have overheads which the Professors would like to use in the course of their summary, with the permission of the Commission.

HEARING OFFICER FAY: Proceed.

MR. HARRIS: Excuse me, are these overheads from the prefiled testimony?

MS. LEICHTER: Yes, they are the exhibits to the prefiled testimony.

MR. HARRIS: Thank you.

MS. LEICHTER: And also taken from the exhibits, some of which applicant submitted.

MR. HARRIS: Thank you.

MS. LEICHTER: If we could, Issa, that would be helpful, if you can get over there, that would be great.

(Off-the-record discussions.)

MS. LEICHTER: And, Professor Chang, could you tell us which subject matter the panel

is here to testify on?

DR. CHANG: Air quality.

MS. LEICHTER: And are you sponsoring documents as part of your testimony?

DR. CHANG: Yes.

MS. LEICHTER: And would this be the revised testimony in opposition to application for certification?

DR. CHANG: Yes.

MS. LEICHTER: And the exhibits attached thereto?

DR. CHANG: Yes.

MS. LEICHTER: Thank you. Now, --

DR. CHANG: There's another transparency already there before, there was a topographic map.

MS. LEICHTER: The map, Issa, thank you. Now, I'd like to draw your attention to your revised testimony. Specifically only address those areas of revision to that testimony.

And the first one is on page 3. And I believe Professor Chang will be speaking initially for the panel, but the other Professors may jump in as necessary, depending upon their expertise.

MR. HARRIS: Helene, I'm not sure I have the same page numbering, so can you let me know --

MS. LEICHTER: Certainly.

MR. HARRIS: -- by title or whatever you are --

MS. LEICHTER: It is -- because you printed it off email? The section where it says the plume modeling was wrong for the site. It is approximately two-thirds of the way down in that section. The paragraph which begins, "Furthermore the final plume height for stability is" and this is part of the revised testimony.

MR. HARRIS: We have that, thank you.

MS. LEICHTER: Okay.

DR. CHANG: I wish first to say that we really appreciate the Commissioner to allow us to do this at this time.

I also wish to personally thank Dr. Long of the Air District who was very generous in helping me, answering me questions about how the model was conducted.

MS. LEICHTER: Okay, Professor Chang, --

DR. CHANG: Oh, sorry, I thought --

MS. LEICHTER: Go ahead. The basic premise of your revised testimony is that you contest the model used by the Bay Area Air Quality Management District, is that correct?

DR. CHANG: Yes.

MS. LEICHTER: Okay. And as part of the revisions, and specifically why don't you lead us through what your basic problems with the model used are?

DR. CHANG: The model does not have the credibility to consider or handling some of the most important processes that leads to heavy pollution --, and showing you on this diagram, this is taken from the Bay Area District climate report referenced in the final, in the staff report. This is the topography and the Bay Area District's climate report clearly stated San Francisco Bay Area is a complex terrain area, and we would like to point out that the project site, which is to the southeast of this chart, showing that where this project site is in the narrowest region of the Santa Clara Valley.

And we have two of the largest hills, in fact, the two largest hills on either side of this site, therefore this is the site of the most terrain, of the highest terrain complexity.

And there are several processes that make this weather condition really bad for causing high pollution or increasing the chance of high

pollution. One of which is the valley winds.

And I only want to point out the fact that there are high land masses on either side. This means during the day the land will be warm and air tends to go up. And during the night the land will be cold and air tends to go down. This is called mountain/valley winds, and it is very clearly explained in the Bay Area District's own climate report.

And the next chart, please show the upper part. Just quickly this shows that at nighttime we're going to have valley winds going from up to -- and why this is important, this because when you have stagnation days with high pressure over this area, we're going to have low inversions which means you're going to cap the air at the top, and then the valley winds is going to cause recirculation.

And this process can go on for a few days, especially during wintertime. So that any pollution that released or pollutants released by the project can stay in the valley and recirculate due to the valley winds.

This page is taken from hurricanes, 1974 textbook on air pollution, and if I may show the

bottom part of it, --

MS. LEICHTER: Issa, could you raise it up, please?

DR. CHANG: Yes. And here it says that in the case of -- the high part, in case of pollutant source in a valley, the regular changing wind patterns may keep the emission trapped in the valley during the day, and plume would move up the valley, only to return at night as the wind shifts towards the lower end of the valley.

Concentration can build up to dangerous levels under this conditions. I'll call this accumulation R, R for recirculation. And accumulation R cannot be handled by the model used.

MS. LEICHTER: The model used by the Bay Area --

DR. CHANG: The ISC model or Screen model, all the flow models.

Then, if I can go on, I can be real quick and it will be over.

MS. LEICHTER: Please do.

DR. CHANG: The next -- I'm only addressing the changing part, there are only three parts.

MS. LEICHTER: And the next change would be directly before the conclusion section?

DR. CHANG: Yes.

MS. LEICHTER: The paragraph which begins, "The above discussion is based on the principle that ISC model"?

DR. CHANG: Right. This is a schematic diagram based on the ISC model user's guidebook. The key thing I guess we have heard the earlier testimony by the District, and maybe others, we weren't here. And those who read our testimony knowing that we have a problem with this term mixing height.

This is how the mixing height is treated in the model. The mixing height is following the terrain. It's very important to remember this word, following terrain mixing height. That means if you assume a mixing height of 200 meters or 600 meters or 1000 meters, say at the project site, over the stack, then you're going to have 200 or 600 or 1000 meters above the hill. So you have the same clearance so that the pollutants will be able to disperse within this layer.

Usually it would be very hard for the pollutants to escape this layer. And so this is

one aspect that is totally unrealistic for this valley.

There's one other interesting aspect of this model, very important here, is that the plume centerline, as I indicated here, hits the hill. I understand that for the model calculation for stability D, the plume rise would be over the height of Tulare Hill. So this hill is not Tulare Hill for stability D.

But is a more stable situation such as stability E and F, then the central height will be lower. Whether that hits the terrain or not I do not know.

But, on the both side of the valley we have hills higher than the maximum final plume rise. Therefore, the model say following the blue line, the plume would hit the hill. But it would not stop there. It would climb the hill and go up.

And this is true with the ISC model regardless of how high the hill is. And this plume would go over and come back either to the original line or to a higher line depending on the stability. This is how the model works.

The next one shows what is happening in

this atmosphere in this valley. I must mention that the chart you see earlier was not totally unreasonable, and probably is not that important if we're in Kansas. But here we're not in Kansas.

Right here we have substances above and that is a strong inversion. We have show data of that, I'm sure Bay Area District climate shows that.

So this is our mixing height. Mixing height when is low it would cap the pollution. So what really happen to the plume? Following this blue line, the plume -- the blue line do not know how to climb the mountain. It's going to stop there, and then the pollutant there will be mixed and will enter stagnation conditions, you're going to have accumulation.

This is -- earlier I called it accumulation R for recirculation. This is a different kind of accumulation. This is accumulation, I'll call it accumulation T for terrain. You have a terrain blocking.

And furthermore, the inversion above will limit the mixing of the pollutants. So there will be trapping in areas indicated.

And the next one, that's the final one

of the series, shows that when you have valley winds going on, then the valley winds at night will bring those upper level pollutants down. And if this is -- or you also can have this pollutants going around the mountain depending on where you are, and so forth. And you could hit behind the mountain, as well, by the valley winds or by fumigation.

So this process, which I'll call accumulation T for terrain, and accumulation U for upper lid are not handled by the model.

MS. LEICHTER: In fact, none of the accumulation models that --

DR. CHANG: -- accumulation, I skipped it. I'm going this very easy. R, S, T, U. R for recirculation accumulation, S I skipped, T for terrain, and U for upper lid.

Now I go back to S. S is what I call stationary or stable condition. If we have stable stationary condition, the wind is not strong, then the pollutant are going to stay and not disperse very fast and very far.

In this models when the applicants does the 8-hour or 12-hour or 24-hour averaging pollutant producing calculations, they did it like

snapshots. So like if we imagine that somebody is smoking in this room and they would go in there, based on the wind and they make some, a lot of gases about what stability is, then they calculate how much pollutant from the person who smoke in here.

But when they do the 8 hours they don't care whether there was a person, a smoker here in this room last hour, already, and there may be smoke remaining in this room. That's the situation occurs when you have a stationary condition.

They do this for all 8 hours and taking snapshots, so they don't have this accumulation S. They just assume that there's no smoker was not in this room the hour before. Even though the smoker could be in this room all night or all day.

So we have those four accumulation processes that are not represented in the model. And these process are the important process leading to air pollution. They are not kind of rare situations. They are the reasons we have high pollution episodes in this valley.

MS. LEICHTER: And, Professor Haney.

DR. HANEY: I don't need the figures,

thank you.

There's not only this theoretical and clear argument that the model used was inappropriate because it did not have the blocking effects of the mountain and it did not have the trapping effects of the inversion. Neither of those are included in the model that was used.

And yet we know those are very important. I just wanted to add one comment, and that is there's observational evidence that that's the case because just looking at the Los Angeles Basin, the Los Angeles Basin would not be smog filled if it were not for the fact that there is a low inversion and there's the high mountains that are ringing it to the east.

True, there's a large population and more output of pollution, but for the same amount of pollution everywhere in the southland, the Los Angeles Basin will always be a maximum, simply for those two reasons that were neglected in the model used here.

MS. LEICHTER: Professor Chang, could you tell us what that represents?

DR. CHANG: I don't need to use this one at this time, just get -- I was anticipating

cross-examinations.

I do want to conclude on this part, this is most -- we only have one correction after here, is that this model is measuring say somebody's -- say if you want to measure second-hand smoke effect in this room, this model assuming that there's no seating.

If there's a seating it assume that there's a wall, there's open in between that wall and the seating at a wall. It doesn't matter how high you build the wall, it just keep raising the ceiling. So the ceiling looks like U and the ground looks like a U. And how could you treat the fact that smoke in this room are closed in and won't go up. And that's one problem.

The second problem is it treat this room, straight smoke, as I mention, forget about the smoker has been in the room before, last hour, hour before or last day, so it doesn't have that accumulation. So that is what the model is measuring. It's not measuring reality.

MS. LEICHTER: Okay. Professor Chang, let's go to the last correction in your testimony which talks about the EPA guidelines and air quality models.

And could you explain to us the reason for your revised testimony in that area?

DR. CHANG: Yes. This is the revision, this is the only revision we make. Our previous testimony stated that we do not have any reason to doubt that this project has not done a good job of using EPA-approved models and procedures.

And now we correct that by stating that this project has not followed EPA guidance. And I would be happy to tell you why.

MS. LEICHTER: Please do.

DR. CHANG: Now EPA part 51, appendix W, there is a model guidance We have earlier heard about whether EPA approved model, quote-unquote, "approved" model should always be used and so forth.

This particular document from EPA specifically addressed the question of how to choose models for pollution studies. On section 2.0, that's page 393, overview model use, section 2.1, suitability of models.

I very quickly give you the key points. 2.1 has four sections. 2.1A says the extent to which a specific air quality model is suitable for the evaluation of source impact depends upon

several factors. There are five of them, only the first one, this is the meteorological and topographic -- I'm sorry, I try to get out of here quick -- the meteorological and topographic complexities of the area.

And we have previously show that this is the most complex part of a very complex San Francisco Bay Area according to Bay Area Air District's own experts. And we have shown that the inversion caused the mixing height to be level with sea level, and not going up and down with the terrain. And that is a special condition when there is strong inversion in land that this situation occurs.

And then coupled with that we have recirculation of pollutants. Not all these are include in the model. The model doesn't have any of this, and the model has simply the wrong mixing height. So it is not considered this.

And section 2.1B6 specifically that area subject to major topographic influences experience meteorological complexities that are extremely difficult to simulate.

And I would say without qualification that this area, the narrowest point of the deepest

valley of a very complex San Francisco Bay Area is an area subject to major topographic influences, therefore very difficult to simulate.

2.1C says a model applied improperly or with inappropriate chosen data can lead to serious misjudgments regarding the source impact or effectiveness of a control strategy.

So, you use a model here, you assume that this ceiling we have here has its U shape and this as much height as the height of ceiling inside. That's not an appropriate application of model. It's going to lead to serious misjudgment.

And number 4, 2.1D says because of manpower and computational facilities may also be important factors in a selection and use of model for a specific analysis. I mention this because that was the Mercury mention that there was a comment about using more complex model may take five years.

However, it should be recognized that under some sets of physical circumstances and accuracy requirements no present model may be appropriate. That means no model, so-called EPA-approved model may be appropriate.

Thus, consideration of these factors

should not lead to selection of an inappropriate model. Namely you cannot say that because it's going to cost more money or cost more resources so that we don't use the model that's appropriate, but we use the model that's on the so-called EPA model approved this.

And I want to add one comment. EPA did not say that anybody has to use the model from their so-called approved list. Anyone can submit a model for EPA's approval. If you find the model on EPA's list that is not appropriate as given by these warnings of EPA's own guideline, then is the applicant or whoever the project sponsor's responsibility to propose model that would satisfy the scientific requirements.

MS. LEICHTER: Okay, Professor Chang, having explained the changes in the revised testimony, are those statements of fact in your written testimony in the exhibits true and correct to the best of your knowledge?

DR. CHANG: Yes.

MS. LEICHTER: And are the opinions in your written testimony your own and represent your best professional judgment?

DR. CHANG: Yes.

MS. LEICHTER: And I have to ask the same of Professor Haney?

DR. HANEY: Yes to both questions.

MS. LEICHTER: And Professor Wang?

DR. WANG: Yes to all those questions.

MS. LEICHTER: Okay. And do you three adopt your written testimony as your direct testimony for purposes of these proceedings?

DR. CHANG: Yes.

DR. HANEY: Yes, I do.

DR. WANG: Yes.

MS. LEICHTER: Okay. I'd like to move the written testimony into the record at this point.

HEARING OFFICER FAY: Is there objection?

MR. HARRIS: I'm sorry, what was -- to moving the document in?

HEARING OFFICER FAY: She moved the revised testimony into the record.

MR. HARRIS: I'm going to reserve my right to object, and again restate that or withdraw it at the end of the testimony. So, I do object.

MS. LEICHTER: I'm sorry, what was that

objection? I just didn't understand --

MR. HARRIS: It was the objection I stated at the opening, about the revised testimony.

HEARING OFFICER FAY: All right, we will hold ruling on receiving the testimony until -- well, at least until after cross-examination. And then the Committee will rule.

Is the panel available for cross-examination --

MS. LEICHTER: Yes, they are.

HEARING OFFICER FAY: -- at this time? All right. Mr. Harris.

And before you start, excuse me for interrupting you, I'd just like to say that we are scheduled to have dinner in the next room at 6:15. And so I will have to interrupt whoever is involved in cross-examination at that time.

MR. HARRIS: First, a matter of protocol. Is it proper to refer to you all as Professor or Doctor?

DR. CHANG: It doesn't really matter, call me C.P.

MR. HARRIS: C.P.

(Laughter.)

MR. HARRIS: Okay. Seriously, would you prefer Doctor or Professor?

DR. CHANG: Whatever you feel --

MR. HARRIS: Okay, I'll probably use both, given my state currently --

MS. LEICHTER: Jeff, I'm sorry to interrupt. Just a clarification on the time. One of the Professors does have a young child at home and has to leave for personal reasons. One month old. So if we could possibly get through their cross-examination before dinner, we would be most appreciative. I understand --

INTERVENOR: -- delaying dinner until 7:00?

MS. LEICHTER: If we could just --

(Parties speaking simultaneously.)

MS. LEICHTER: I understand it's not up to us, but --

MR. HARRIS: Santa Teresa's got an hour, so I'm not the issue. Should I begin?

HEARING OFFICER FAY: Yes, just go ahead.

MR. HARRIS: Okay, thank you.

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CROSS-EXAMINATION

BY MR. HARRIS:

Q I'll being with Dr. Chang, did you perform any modeling specific to the Metcalf facility emissions?

DR. CHANG: No.

MR. HARRIS: Okay, and again we're not talking about meteorological, we're talking about the emissions from the plant. So you did not model the plant emissions, is that correct?

DR. CHANG: Correct.

MR. HARRIS: And, Dr. Haney, did you model the plant emissions?

DR. HANEY: No.

MR. HARRIS: And, Dr. Wang?

DR. WANG: No.

MR. HARRIS: So using the methodology that you used, you did not consider any potential impacts of building wake downwash, is that correct?

DR. CHANG: Not correct.

MR. HARRIS: Okay, could you --

DR. CHANG: We teach how to do air pollution modeling including effect of wakes and recirculation and downwash building.

MR. HARRIS: Again, my question is did you do that for the emissions for this project?

DR. CHANG: We didn't do anything for this project.

MR. HARRIS: Okay, so the answer is no, you did not look at the emissions --

DR. CHANG: No, we didn't consider --

MR. HARRIS: -- and the building -- please let me finish the question. You did not look at project emissions and the effects of building wake downwash, is that correct?

DR. CHANG: Not correct. We look at all the reports and look at how ISC model handles it. And so we did consider. We didn't do modeling. We look at the reports and we look at --

MR. HARRIS: I think we're not disagreeing. Just let me be specific --

DR. CHANG: You were asking whether we consider, the question is we did.

MR. HARRIS: Let me ask the question again. Did you consider building downwash and emissions from the Metcalf facility in the work you performed?

DR. CHANG: We didn't do any model work on the project.

MR. HARRIS: Okay, thank you. Dr. Haney, did you?

DR. HANEY: No, I did not specific modeling of that site.

MR. HARRIS: With respect to building downwash, is that correct?

DR. HANEY: With respect to anything.

MR. HARRIS: Okay. Dr. Wang?

DR. WANG: No, I did not do any specific relating to this project.

MR. HARRIS: Okay. With regard to the MEC emissions and the --

HEARING OFFICER FAY: Excuse me, Mr. Harris, you're going to have to repeat the question and Dr. Wang is going to have to --

MS. LEICHTER: I don't believe her mike was on.

(Off-the-record discussion.)

DR. WANG: No, I did not do any specific modeling on the emission and downwash for this project.

MR. HARRIS: Okay, thank you. With regard to the emissions from this project, did any of you do any analysis of the project emissions in the inversion breakup fumigation conditions?

DR. CHANG: No.

MR. HARRIS: Dr. Haney?

DR. HANEY: It's kind of an unnecessary question. I mean we didn't do any modeling of anything related specifically to this site with this data.

MR. HARRIS: Okay, so with regard to inversion breakup fumigation conditions you did not do any modeling, is that correct?

DR. HANEY: For this project, no.

MR. HARRIS: Okay. And, Dr. Wang?

DR. WANG: We did not do any modeling for this project. However, I want to mention that we did look at some observations to look to see the inversion structure and for about two-month period, and -- three months period. And those observation were based on San Martin, at San Martin, with the wind profiler and a radio acoustic sounders.

MR. HARRIS: Okay, but you did not do anything specific to this project related to inversion layer breakup fumigation conditions, is that correct?

DR. WANG: Not on the modeling part.

MR. HARRIS: Thank you. Did you

quantify any of the impacts of this project in your analyses? Dr. Chang?

DR. CHANG: No.

MR. HARRIS: Dr. Haney?

DR. HANEY: No, I said we didn't do any modeling at all, so we couldn't quantify anything, no.

MR. HARRIS: Thank you. Mr. Wang?

DR. WANG: No.

MR. HARRIS: I want to talk now about the models that were used in analyzing the Metcalf project.

The first model is ISC-TS3, are you familiar with that model?

DR. CHANG: I read the users guide.

MR. HARRIS: Okay, so you're familiar with that model. Is there any evidence before you that that model was not properly used by the Bay Area District or the applicant?

DR. CHANG: That's the wrong model for the site.

MR. HARRIS: I understand that's your contention, but I want to make sure, let me ask the question again. Is there any evidence that the model, as run by the Bay Area District and the

applicant, was not properly run?

DR. CHANG: When you have a wrong model then you ask me whether the wrong model was properly run, I object to that question.

(Laughter.)

HEARING OFFICER FAY: Please --

MS. LEICHTER: Mr. Fay, I understand what Mr. Harris is trying to establish. They did not do any specific testing. The basis of their testimony is that the model used was incorrect.

MR. HARRIS: I understand that, and that's not what I'm going to with my questions.

MS. LEICHTER: But you're going beyond the scope of direct.

MR. HARRIS: I'm going to their analysis of the project as put into the record before us. And I can compress this quite a bit if I can have an opportunity to do that.

HEARING OFFICER FAY: Please try to compress it.

MR. HARRIS: I'll compress it.

There were three models used in this project, there's ISC-ST3, the Screen3, and the CTScreen. And I understand that you all think those are those are the wrong models, okay?

That's established.

DR. CHANG: We only comment IS-T3. We have not difference opinion on the others.

MR. HARRIS: Okay. My question is actually fairly simple. Is there anything in the record that leads you to believe that those models, as run by the applicant and the Bay Area District, were not properly run, to the best of your personal knowledge?

DR. CHANG: It depends on whether they run first time or the second time. The first time was not properly run by assuming 600 and -- well, I'm sorry, I'll change my answer. I'll agree with that. I have no reason to doubt, to think that they did not properly run this inappropriate model.

MR. HARRIS: Thank you.

(Laughter.)

MR. HARRIS: I'm sorry that took so long. That's all I was trying to get to. I'm sorry.

And, Dr. Haney, do you agree with that statement?

DR. HANEY: I always teach my students that applying a model to a situation determining

whether the model is appropriate for the situation is part of running it properly. So I would have to answer no. In other words, that it was not run properly because it was applied to the situation that it doesn't work with.

MR. HARRIS: And, Dr. Wang?

DR. WANG: I couldn't agree more with Dr. Haney. Running the model, because that's where we always teach our student, the first thing you want to do is to run a good model that's appropriate.

MR. HARRIS: I understand. So, let me go back then. Dr. Haney, to your personal knowledge were there any problems with the way these models were applied by the Bay Area District and the applicant?

DR. HANEY: Yeah, the problem is they had wrong assumptions.

MR. HARRIS: Just to your personal knowledge is the only question, sir.

DR. HANEY: Well, I understand the assumptions that were used, and they're not valid for this site.

MS. LEICHTER: I'm going to object, he's badgering the witnesses, it's beyond the scope of

direct.

MR. HARRIS: I'd just like an answer to the question.

HEARING OFFICER FAY: Overruled. Overruled. I'm going to direct the witness to -- in fact, I think he did answer it. Do you need --

MS. CORD: I think he's answered it several times.

MR. AJLOUNY: He just didn't answer it the right way.

(Laughter.)

MR. HARRIS: He didn't answer it at all. You mentioned that you deleted that sentence from your testimony, it's on page 6 of the original filed testimony. That we have no good reason to think that Calpine and the Bay Area District have not done a good job of using agency-approved models, and so I guess this agreement on agency-approved models.

Were you aware, again to your personal knowledge, that EPA approved the use of the ISC model in this location for this power plant?

DR. CHANG: I'm not aware.

MR. HARRIS: Thank you. Dr. Haney?

DR. HANEY: No, I didn't know that

anybody approved the use of that model, no.

MR. HARRIS: Thank you. And Dr. Wang?

DR. WANG: No.

MR. HARRIS: Okay. Give me just a minute to consult.

I have no more questions.

HEARING OFFICER FAY: Okay. Staff.

MR. RATLIFF: Ms. Leichter, I want to thank the Doctors for coming, and I hope you -- you should go home with your families now.

(Laughter.)

HEARING OFFICER FAY: No questions?

MR. RATLIFF: Yes.

HEARING OFFICER FAY: All right. Then the City of San Jose.

MS. DENT: I have no questions for these witnesses.

HEARING OFFICER FAY: All right, thank you. CVRP?

MR. BEERS: No questions.

HEARING OFFICER FAY: The Racquet Club, not present. And Santa Teresa Citizen Action Group.

PRESIDING MEMBER LAURIE: Before you start your questioning, Ms. Cord, because you

indicated you had substantial questions, let me just remind you that the purpose of cross-examination is to call into question the viability, the truthfulness, the correctness of the direct testimony. And so, I would ask you to think about why you would want to do that.

MS. CORD: Well, I appreciate --

PRESIDING MEMBER LAURIE: -- that, you're free to ask whatever questions you desire.

MS. CORD: Thank you, I appreciate that guidance. And clearly this testimony is unassailable, so I really don't have anything to say, except thank you for coming.

HEARING OFFICER FAY: All right.

MS. CORD: Oh, excuse me, my colleagues may have questions, I'm not sure. Jeff?

MR. WADE: Yes, I wanted to --

HEARING OFFICER FAY: Mr. Wade, I'm going to get to you. I'm kind of going down the list.

MR. WADE: No, I'm sorry, I'm really just commenting on Commissioner Laurie's statement regarding the procedure.

With regard to cross-examination, we have seen on numerous occasions the CEC Staff

cross-examine witnesses on behalf of the applicant. I can't think of a more obvious example of --

PRESIDING MEMBER LAURIE: Sir, I was --

MR. WADE: -- a positive --

PRESIDING MEMBER LAURIE: -- I was just --

MR. WADE: -- cross-examination --

PRESIDING MEMBER LAURIE: I was just attempting to provide guidances to the folks that indicated an earlier desire to provide substantial cross-examination. I simply wanted to remind you what the purpose of cross-examination was, and to ask you to think about why one would want to cross-examine a friendly witness.

And I think that's known and understood. I don't think any further discussion is necessary.

HEARING OFFICER FAY: Okay, Issa.

MR. WADE: -- understand.

(Parties speaking simultaneously.)

HEARING OFFICER FAY: Oh, I'm sorry, you do have --

MS. CORD: I'm speaking for myself, not for the group. Our panel does have some questions.

HEARING OFFICER FAY: All right.

MS. CORD: I'm going to pass it to Mr. Mitchell at this point.

MR. MITCHELL: Yeah, I just have a few questions I wanted to ask for clarity of the panel.

CROSS-EXAMINATION

BY MR. MITCHELL:

Q I believe I heard testimony to the -- or there's testimony in your written submission regarding the plume height for stabilities E and F will be lower than stability D.

We heard testimony last night from Mr. Rubenstein that he didn't know if stabilities E and F would be different from stability D.

What -- could you clarify your testimony regarding the final plume height for stability E and F relative to the plume height for --

DR. CHANG: Well, the plume height depends on stability, and if is more stable the plume height tends to be lower. But then it depends on some other conditions, too.

MR. MITCHELL: Okay, thank you. Following up on that, the Air District earlier, Dr. Long testified that the model was insensitive

or didn't vary much with different mixing heights, it basically got the same results with different mixing heights.

Could you elaborate on why that might be?

DR. CHANG: I have -- okay. First of all, I think it is a great demonstration that this model is useless, and used throughout all other air pollution text book, and meteorological text book have used a, when you vary mixing height you don't change the air pollutant.

I know the reason about building towers and everything, but that's a general comment. Now, I'm going to get specific.

Dr. Long and whoever use ISC model for this valley is going to face a dilemma that they cannot solve. If they read our original testimony when we complain they use 600 meter, but they should read on, we say 600 meter terrain following mixing height. And it should be 200 or lower mean sea level height.

So the problem is this. As indicated in the rebuttals to our testimony when they put a higher mixing height, say they put a 200 meter above ground mixing height over the plant site,

they have to put 200 meter over the hill regardless whether how high or how low that hill is.

Therefore, in our original testimony talking about multiple reflection due to the fact that the plume is becomes trapped between two boundaries, that will not be there because you put 200 meters, that's 200 meters. That won't have much effect. I agree with their result, it won't.

Then they say they put 30 meters, that's because I believe in our original testimony we say over Tulare Hill will be 30 meter. When they put 30 meters over Tulare Hill, they have put 30 meter on the plant site.

Now the plume is going to go above mixing height and it's never going to return. So, they got no pollution.

There's just no way out. They won't have pollution. Their model have to put a constant mixing height. That's the key problem.

It should be constant above sea level. It should not be constant above the ground. But then you could say why everybody else is using that. Everybody else is more or less like in Kansas.

But we also could use it here. I'm not saying that you cannot use it when you have valleys of 1500 feet. You can use it provided inversion is not low. You don't have a cap. Then you, these assumptions error is not large. In fact, this could be a good assumption if the mixing heights due to turbulence mixing of the ground effect. It's not totally unreasonable at all. It's a reasonable assumption. It just doesn't apply when you have an inversion that cap this valley.

If you go up there -- you know when you look at a fog during winter, does the fog go up and down over the hill? It does not. So in the model they either choose use a 200 meter over the size of the plume will not be trapped. This is good, the Air District did an excellent job make sure not to set a plume to zero because if it's set too low it's going to be zero.

So they set at 200 meter. But then you have to put 200 meter over Tulare Hill. They have to put 200 meter over Diablo Ridge, they have to put 200 meter over Santa Cruz Mountain. There's no reflection, no trapping, nothing. As long as not zero.

So when we say it's only 30 meter or zero, one of the chart, mixing height across the mountain zero. You cannot put zero, they put zero on the ground, the pollution will not fall to the ground -- there'll be no pollution.

So they do not have that function in the model to handle this effect of mixing height. That's just one aspect. That doesn't even refer to all the other things I was talking about, recirculation of the valley winds, accumulation and so forth, accumulation R, S, T, U. None of those are even in here.

They have a fundamental basic problem when you have inversion that keep the mixing height level over the hill. And I would say that this is case that if the EPA approved this model, then through Dr. Wang's Committee, American Meteorological Society works with EPA on this guidelines, is going to have a very interesting thing for the Administrator of the EPA.

MR. MITCHELL: Thank you. Would any of the other panel like to comment, or -- on the question. Just give you the opportunity.

Okay, thank you. I guess just to follow up on that explanation, one of the things I've

noticed in walking in the neighborhood, I live near Tulare Hill, I know last winter I noticed that fog would come around both sides of the hill, but would not come up and over the hill.

Is that consistent with what you're saying about --

DR. CHANG: Yes, when you have the inversion, as we have, so low an inversion, it's very hard for things to escape.

MR. MITCHELL: Okay. Okay, I wanted -- oh, where did the -- I wanted to show something, I wanted the transparencies. Could I -- could we just -- I've got a question on the map.

As Jeff's getting up I'm prepared to do that, I want to give a little preamble. We heard testimony earlier by both Mr. Rubenstein and Dr. Long that the met data was appropriate to use from the IBM site.

The IBM site is located several kilometers up valley from the project site. And I wonder if you could just comment on whether or not there would be any problems in using that meteorological data, given the fact that the width at the valley at the point of the IBM site is much wider than at the project site?

The narrowest part of the valley is where the project site is, and the IBM site is up valley where it widens.

DR. CHANG: Your question is not easy to answer. But I hope you take what I say and don't ask anymore.

(Laughter.)

DR. CHANG: This report, which is not the fault of Sierra Research, Calpine or the Air District, use terms such as complexity, terrain options, use full meteorological options, it's not their fault, they're totally misleading terms as an implied.

When you use just one single point data to represent whatever, this is totally inadequate. It's like if you sail a ship out of a port you use whatever the current at the port. Say it's 3 knots going northeast, then you calculate your ship is going to go 3 nautical miles every hour, so eight hours later it's going to be 24 hours away from there. That's wrong. Because there's going to be current. There's a three-dimensional wind circulations that are changing.

In the plume model when they use one point, whether that's IBM site or PG&E site or

whatever site, that's zero dimension. They're using one point. You're getting where it's going to go. So you got a problem either way.

The answer to your specific question because of the Tulare Hill and the other hills, obviously we have wind structure horizontally. Namely you cannot have wind that's going into the hill. So there will be some distribution. I'm not sure whether that's important or not, I'm not here in disagreement with the Air District or Calpine.

But I'm just pointing out, when you use one point to do this, you have a lot bigger problems. We don't have time. I don't intend to give a lecture. We just point out the model's own result, showing when you changing mixing height, not getting change in result. That's sufficient.

And I think all the other questions, there's so many other problems, so EPA's going to come out with model 3 which is going to have meteorology models to say how winds are going to do, how do you treat the terrain.

We do this, I anticipate earlier questions about that. We are meteorologists, may not know air pollution. The model I use,

Professor Wang use, are the same model used by our PhD student that taught us in Monterey to study the Gulf War Syndrome, to study the case of the demolition of Iraqi chemical weapon systems on March 10 1315 UTZ 1991.

And our operation model MM5 run daily at our school is the model that's used by EPA for their model 3. I'm sure the pollution experts here who know that, the meteorological model is the MM5.

And then the emission model where you put a plume in there, see where the wind goes and what the wind is going -- where the wind's going to bring that, that's going to be done with meteorology. And the terrain is going to be in the meteorology part. All this in meteorology. This are not in the so-called complex terrain option, full meteorology option are stated in the ISC model.

MR. MITCHELL: Thank you.

DR. CHANG: I hope you don't ask any more.

DR. HANEY: Can I just add one comment?

MR. MITCHELL: Sure, please.

DR. HANEY: With respect to the

importance or -- importance of the mixing depth, the fact that the model tests showed an insensitivity of the pollution level to the value of the mixing height, that demonstrates that the model is not appropriate, simply because observations clearly show time and again that in the Los Angeles Basin, as an example, the days that are high pollution days are exactly those days where the inversion is the lowest.

And if the inversion is high enough, and especially higher than the mountain heights, so that air can go up the mountain and pass on through, those are the days when the pollution is not high.

So there's strong demonstrated everywhere, everybody knows about it, that the actual pollution levels at the ground are sensitive to the mixed air height.

And for their model to come up with a result that says it's not, demonstrates it's inappropriate application in this area.

MR. MITCHELL: Let me ask a followup to that. We also heard testimony yesterday that the maximum concentrations found by the modeling that was used for the site was due to cross-valley wind

flow conditions.

Does that make sense --

DR. CHANG: Zero sense.

MR. MITCHELL: -- in your minds?

DR. CHANG: They don't have cross-valley winds. Cross-recirculation winds means you have to see winds going this way here, that way there, that way there, and this way here. They don't have one point data, how could they say that.

MR. MITCHELL: That's all my questions.

DR. WANG: I want to make a comment about the representatives of the site using the IBM site.

Without doing any qualitative simulation I don't want to simply disagree with the use of that. However, if you ask any meteorologist to look into the wind field structure in this area and they would never choose one point to use that to show the wind characteristic in this area.

And the first thing they would go into is a three-dimensional full meteorological model to do a good simulation on that.

MS. CORD: I just had a couple last questions. I'm sure we still have time left.

DR. CHANG: We ready to go home quick.

MS. CORD: I know, I know, I'm sorry, I know, she needs you.

CROSS-EXAMINATION

BY MS. CORD:

Q First of all, did you read The Mercury News this morning, or did you see -- were you aware --

DR. CHANG: I think already answer the question that --

MS. CORD: Okay.

DR. CHANG: It's just a demonstration of the model problem. I give you the reason. They don't have that function. It's like if you don't have mouth how could you eat.

MS. CORD: Thank you, that's a good analogy. Would you say that, I'm looking at this letter from the Air District, that the testimony you provided today is only speculation, as presented? Would that characterize your testimony?

DR. CHANG: I don't understand your question, sorry.

MS. CORD: I guess I'm not sure, either, the whole letter's kind of a mystery, but are you -- only speculation is presented. Are the

facts that you're presenting to us today speculative in some way?

DR. CHANG: None. I have not speculate anything. Everything we did, every word I say, I been a Professor of meteorology for almost 30 years. I serve on all sort of review committees. I don't have time to brag about my qualification.

There's no speculation in every word here I said.

MS. CORD: Thank you. Dr. Haney, did you have --

DR. HANEY: Well, I would just say a text book, you know, even the old text books would say that the first order effects in studying pollution is the topography and the stratification relative to mean sea level. And so those are the things that we --

DR. CHANG: May I insert --

DR. HANEY: -- ignore --

DR. CHANG: -- one sentence?

MS. CORD: Of course.

DR. CHANG: I want to get out of here, too, I'm not -- the Air District's own --

PRESIDING MEMBER LAURIE: Wait, wait, wait, wait, wait, wait, what question are you

responding to?

DR. CHANG: Whether there's speculation.

PRESIDING MEMBER LAURIE: Well, you answered no.

DR. CHANG: Okay. Thank you.

INTERVENOR: Ask what you wanted to ask about.

MS. CORD: Yeah, could I confer with the witness for a moment? What do you want me to ask him?

(Laughter.)

DR. CHANG: You don't have to ask anymore. I think we're done.

MS. CORD: No, no, I actually had another one. The Air District evidently is making the statement that the most conservative assumptions are used to guarantee that the impacts are not under-estimated.

You're saying that they're using the wrong model. If you're using the wrong model, would using that model conservatively somehow give you some confidence that something --

DR. CHANG: The Air District is correct in saying that when they do the downwash calculation they used the most conservative

estimate. I agree with that. They may have over-estimated downwash effect.

But it's not conservative when the mixing height has no effect. The Air District own report, -- report in page 28 of the final staff assessment list the factors that would cause that -- air quality, wind, temperature, terrain, everything, and all that stuff.

One of the item is talking first, the opening paragraph, sentence, primary factor in air quality is the mixing depths, i.e., the vertical dimension available for dilution of contaminant source near the ground.

So this is the primary factor in the Air District's own meteorological report. And it has no effect in this models.

MS. CORD: So that's actually a document from the Air District, but --

DR. CHANG: Yes.

MS. CORD: -- those principles were not used in this calculation?

DR. CHANG: They have excellent meteorologists and modelers.

MS. CORD: Okay, thank you. Let me ask you one more series of questions. Does -- you

were reading from the suitability of models guideline 2.1 from the EPA.

Does the EPA expect approved models to be used if they're inappropriate for --

DR. CHANG: I already clear as day what 2.1, the specific word, people do not choose inappropriate model if they don't think there's a model appropriate from their so-called approved list.

MS. CORD: So that guideline specifically exists to caution --

DR. CHANG: Yes.

MS. CORD: -- against these --

DR. CHANG: I don't have to re-read it, it's in the --

MS. CORD: No, thank you, very good. And I just wanted, Dr. Wang, I guess, is with the American Meteorological Society, and there's some concern now that the model may have been approved.

I just want to clarify, I don't think that we have any testimony that the EPA has approved use of this model. I think we heard someone asked you if you would be surprised to know that they had approved --

DR. CHANG: I would not be surprised

based on what I see. I have no idea of how air pollution was done until this. This is a good lesson for us and for our students.

MS. CORD: Good. Thank you.

MR. NELSON: Can I just --

MS. CORD: Yeah.

MR. NELSON: -- quickly finish?

CROSS-EXAMINATION

BY MR. NELSON:

Q I think it was Dr. Wong? This is Steve Nelson. You mentioned that a meteorologist would, you, in your testimony it says that terrain is an important factor in how the wind moves across our area.

And you said it was important to pick more than one point for the meteorology -- a meteorologist would pick more than one point to get a good idea of how the wind flows through our area.

Much has been made that there was a second set of met data from the PG&E plant. Are you familiar with this site? Have you seen where the plant would be located?

DR. WANG: No, not really.

MR. NELSON: Okay, I guess I will give

you a -- there's a hill right in front of it. That hill is not in front of the PG&E site.

In your opinion would it be wise to choose or to know the meteorology characteristics behind the hill where the plant would be located?

DR. WANG: Definitely not.

MR. NELSON: You're saying you wouldn't want to know? I mean if you're going to have a sample point to model the plume, and it was a low plume, for example, from the cooling tower, would you want to know the meteorology at least where that plume would be emitted?

DR. WANG: Well, I would say I want the complete field to be described before I want to do any dispersion modeling.

MR. NELSON: Okay, so even -- so behind the hill, beside the hill, in front of the hill, it would be good to know that information?

DR. WANG: Definitely.

MR. NELSON: Thank you.

CROSS-EXAMINATION - Resumed

BY MR. MITCHELL:

Q I guess just in closing, my last question is, in your view, given the modeling review that you have done, and looking over what

you've looked over, would you say that the modeling that was done would be protective of public health?

DR. CHANG: No.

DR. HANEY: No, not at all.

DR. WANG: No.

HEARING OFFICER FAY: Okay. Ms. Leichter, the -- tells us that dinner is ready. Can any of your witnesses return?

PRESIDING MEMBER LAURIE: Mr. Fay, I would prefer to finish. Those folks who want to go eat are free to go eat.

HEARING OFFICER FAY: Okay.

PRESIDING MEMBER LAURIE: We're going to continue with the cross-examination of these witnesses.

MS. LEICHTER: Thank you, Commissioner Laurie.

MR. WADE: I was prepared to leave it at that, but since we've been granted a reprieve, I'll ask just one followup question.

HEARING OFFICER FAY: Mr. Wade, we've got you as a separate intervenor, and in fairness to everybody I want to go down the list, that's what we've been doing.

MR. WADE: By all means. I was just going around the table, but --

HEARING OFFICER FAY: Issa did not indicate any time for himself. And, in fact, I didn't have any time down for you. I did have time requested by Mr. Scholz.

MS. CORD: He wanted to give it to Jeff.

HEARING OFFICER FAY: He's not here.

MS. CORD: He'd like Mr. Wade -- did you say, did you present that?

(Laughter.)

HEARING OFFICER FAY: Well, --

(Parties speaking simultaneously.)

MR. AJLOUNY: I'm going to stick to my commitment of zero minutes.

HEARING OFFICER FAY: Good, I appreciate that. A man of his word. All right, and CARE has not indicated any cross-examination when we asked. And Mr. Williams wasn't here when we asked, I believe.

MR. WILLIAMS: Yes, I have just a few brief questions.

CROSS-EXAMINATION

BY MR. WILLIAMS:

Q Do any of the witnesses have any

expertise in photochemical reaction issues?

DR. WANG: Let me answer that question. Yes, I do. I developed -- I actually developed a turbine mixing model. It's called a -- column model that has input from a three-dimensional wind field, and deal with the photochemistry over big cities. It also involved emissions from multiple sources --

MR. WILLIAMS: Yes, in your professional opinion, Doctor, do you -- would you venture an estimate of the amount of ammonia that will react to form PM10, the so-called secondary PM10, because of the ambient field of NOx that is due to automobile pollution? What fraction of the NOx, in your professional opinion, would react with the ambient -- excuse me, what fraction of the released ammonia would react with the ambient field of NOx to form secondary PM10?

DR. WANG: I think this is really a question out of my specialty. It's more related to chemistry now. I'm --

MR. WILLIAMS: All right.

DR. WANG: -- around the turbulent mixing and the meteorology side of air pollution.

MR. WILLIAMS: I see. Do any of you

realize that if the PM10 estimate were 10 percent higher that a year of that site meteorological monitoring would have been required? That's one of the EPA regulations.

DR. WANG: I would think so.

MR. WILLIAMS: Thank you.

HEARING OFFICER FAY: Okay, Mr. Wade.

MR. WADE: Thank you.

CROSS-EXAMINATION

BY MR. WADE:

Q This question is perhaps best directed at Professor Long -- Wong. With regard to using meteorological data, we've been told that we've based -- or applicant has based analysis on IBM met data, which Dr. Chang has pointed out is questionable because it's zero dimensional.

In light of the data that you presented in your testimony for San Martin, what conclusions can we draw from the San Martin data about the suitability of the IBM data?

DR. WANG: Well, from the San Martin data we cannot really conclude, say anything about the IBM site because is a completely different site.

However, we looking to the inversion

height, which is also the mixing height, over three months period from 1999, and the average mixing height is about 300 meter over that site.

So, we feel the 600 meter used in the model is definitely inappropriate.

MR. WADE: Could you -- go ahead.

DR. HANEY: Can I just add one? The mixing height is, although it is influenced by surface processes, the mixing height is really determined in this case by this large scale subsidence which is a large scale meteorological phenomenon. So in that case the mixing height at San Martin may be relatively representative of the entire area.

MR. WADE: Do you think it would be more relevant, perhaps, than the data that's been quoted at Oakland, which is the other place where mixing height has actually been measured?

DR. CHANG: I think so, and I think it's clear from the District's testimony, they also understand completely that Oakland is not representative.

Answering on the same question, the real problem is really not so much IBM or San Martin or PG&E or the site, of course closer to the site is

better. The real problem is when you have a three-dimensional structure of terrain and circulation, you need wind at as three-dimensional structure. When you don't have that then that's a real problem.

MR. WADE: Okay, thank you.

HEARING OFFICER FAY: Does that conclude the questioning of the Santa Teresa group? I'm sorry, Mr. Wade, does that conclude yours?

MR. WADE: Yes.

MS. CORD: Yes.

HEARING OFFICER FAY: And Mr. Garbett was not present when we asked. Do you have some questions, Mr. Garbett.

MR. GARBETT: One question.

CROSS-EXAMINATION

BY MR. GARBETT:

Q If you run an appropriate model using site specific data, will you make a copy of your data run available for the administrative record of the CEC?

DR. CHANG: I need to answer the question that we cannot do that because we are federal government scientists, defense scientists. We cannot do things like that unless there is an

official request from the state to the U.S. Defense Department for us to do anything.

We can work for state and local governments, but we cannot do that as a personal choice without approval.

On the other hand, there are lots of meteorology models available. This is done at Los Alamos; I advise a student using the Yamada2.5 older turbulence closure model to do -- the same model. We didn't do it at Los Alamos, but the Energy Department in Los Alamos had the dispersion study. This model was available since 1983. And this is on the same scale, not as complex terrain as in this site, same scale.

The model's available. It's National Center of Atmospheric Research this model available. Lawrence Livermore has models. They use the same model as our model. They're all just meteorology models to treat conditions where you have to worry about a terrain and meteorological complexities.

We don't have to do it. If you want us to do it, you will have to be contact to the Defense Department.

MR. GARBETT: That concludes my

questions.

HEARING OFFICER FAY: All right.

MR. GARBETT: -- Mr. Laurie would care --

PRESIDING MEMBER LAURIE: Mr. Fay, question. Did I hear you say that -- are you currently employees of the federal government?

DR. CHANG: Yes, we are. We are currently employee of the Defense Department. We are Professors of Naval Post Graduate School, U.S. Naval Post Graduate School. We are the Post Graduate Department. We are the master and PhD degree component of Annapolis.

And our appearance has been approved by the Navy JAG, by the Judge Advocate.

PRESIDING MEMBER LAURIE: Right, thank you, sir.

HEARING OFFICER FAY: Okay, and Mr. Scholz, I understand, is not present, is that correct? All right.

That concludes the cross-examination. Do you have any redirect of your witnesses?

MS. LEICHTER: No.

HEARING OFFICER FAY: All right, thank you very much.

MR. HARRIS: My motion.

HEARING OFFICER FAY: Oh, yes.

MR. HARRIS: I'd like to with -- I want to withdraw my previous motion, and do not object to admission of the revised testimony of Morgan Hill.

HEARING OFFICER FAY: Okay, great. Is there any other objection? Did you wish to move that testimony at this time?

MS. LEICHTER: Yes, I do.

HEARING OFFICER FAY: All right. Any objection to receiving that testimony of Morgan Hill? I hear none. The testimony is received at this point.

And that will be identified as the next exhibit in order, which I believe is 139.

Thank you very much for coming and testifying.

(Whereupon, at 6:40 p.m., the hearing was adjourned, to reconvene later this same evening.)

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EVENING SESSION

7:25 p.m.

HEARING OFFICER FAY: We would like to begin now with the cross-examination of the staff's panel on air quality. Mr. Harris.

MR. HARRIS: Thank you. I have a few questions, and I think probably Dr. Long is maybe the appropriate person to handle those questions.

CROSS-EXAMINATION

BY MR. HARRIS:

Q And so let me start with you, Dr. Long. And if others are more appropriate, you'll let me know.

Have you received any comments from the EPA regarding the District's analysis of this project?

DR. LONG: No.

MR. HARRIS: Okay, Mr. Hill, have you received any comments about the District's analysis of this project?

MR. HILL: Yes, we have, at the PDOC stage.

MR. HARRIS: And were any of those comments related to purported inadequacies with the modeling?

MR. HILL: No, none of them were.

MR. HARRIS: Thank you. I want to go to the concept of screening models. And, again, if it's Dr. Long or if it's Mr. Hill, let me know.

Can you tell me whether a screening model, and that's a term we've heard a lot tonight, can you tell me whether a screening model tends to predict lower or higher concentrations than more refined models?

DR. LONG: Sure. By design EPA came up with this concept of a screening model. And the screening model is intended and predicts high concentrations. Its purpose is to be conservative. It's not necessarily to predict the most accurate concentration. Its purpose is to over-predict concentrations so that if you run a screening model you can be guaranteed that your project would not have a maximum impact any higher than those from the screen models.

MR. HARRIS: Okay, so the screen there is intended to be over-predictive, is that correct?

DR. LONG: That's correct.

MR. HARRIS: Okay, thank you. We've heard a lot of testimony from the Morgan Hill

meteorologists, and I want to ask you, do you agree with the conclusions stated by Morgan Hill?

DR. LONG: With their conclusions, no.

MR. HARRIS: And can you explain the basis for your disagreement.

DR. LONG: Well, if I can summarize what I think they concluded, I think I need to address that.

Their basic conclusion was that it's the wrong model. And I disagree. The guidelines on the air quality models has a complete chapter on how to model sources in complex terrain. This issue has been around for many many years as one of the Professors showed us the slide from a text book from 1974. It's not a new phenomenon. It's something that the community has known all along.

EPA has held conference after conference to deal with some of these issues, and through this guideline process they have come up with the guideline on air quality models that addresses determining impacts in complex terrain.

So, I think it's inappropriate, or it's wrong to conclude that this model was the wrong model.

MR. HARRIS: Let me ask you about the

issue of downwash, because that seems to be one of the issues of contention.

Can you explain, from your perspective, the importance of downwash, especially as it relates to the Morgan Hill testimony?

DR. LONG: Yes. As the modeling showed, as the wind would pass by the stack and by the buildings, the aerodynamic turbulence that would be caused by the buildings would force the plume center ground down to the ground at certain distances.

The ISC-3 model goes into great detail in predicting the building downwash effects.

For the Metcalf site there were, as I remember, eight buildings with up to five different levels of dimensions of each story that were fed into the BPIP program, the building profile input program, I think it's called, that determines the dimensions on a wind direction basis.

So, once these dimensions are input to the model, the model will then calculate downwash according to these buildings that are in the vicinity.

And what the modeling showed was that

that building downwash phenomena overwhelmed any of the other impacts. So that the modeling did show that impacts did go up when the mixing height went down.

But what the Morgan Hill testimony failed to recognize is that my testimony was about the maximum impact. It wasn't about just the run-of-the-mill receptor on the grid, it was about the maximum impact, which is what the District has to look at. We have to control the maximum impact.

MR. HARRIS: That's all I have for the panel. Thank you.

HEARING OFFICER FAY: Thank you, Mr. Harris. City of San Jose.

MS. DENT: Yes. I'm going to go ahead and state my questions and let the witnesses decide which one they think they should answer, unless I ask specifically. But I probably won't be asking for a specific witness, but I might be asking for either the District or the CEC Staff to answer.

CROSS-EXAMINATION

BY MS. DENT:

Q The first question I want to follow up on was Mr. Harris' question on whether or not you

had received not comments back from EPA on your modeling, but my question is the comments that the Air District received on the preliminary determination of compliance for this project.

And I would like to ask if you have addressed particular comments of EPA on that preliminary determination of compliance. And if you can point me to where those comments have been addressed. And I'll specify the ones that I want to ask about.

MR. HILL: I'm afraid I don't have the comment letter with me.

MS. DENT: That's why I'm going to go -- I only have one copy of it, too, so I'm going to just ask you about the comment they made and ask how it was addressed.

The first comment that they made was on the formaldehyde emissions and Metcalf Energy Center being a major AP source.

How was that comment addressed in the final determination of compliance? And also how was that comment addressed by the CEC in these conditions of certification?

The comment indicates that the District must either obtain EPA concurrence on the

District's map determination, or request that EPA make the determination. Or you must -- the permit must contain enforceable conditions requiring the operation of the control equipment and include half emission limits consistent with this being a minor AP source.

And according to the emissions table, I think, in the permit and in the FSA, the formaldehyde does exceed the level for a minor source.

So could you tell me how you addressed that comment by EPA?

MR. HILL: Yes. There's an enforceable conditions, condition number 26, that restricts formaldehyde emissions to less than 3796 pounds per year.

So there's an enforceable condition.

MS. DENT: Okay. The next question I have is on the CO limit. The EPA comment indicated that with available control technologies, BACT for CO should be in the 4 to 6 ppmvd range.

I understand that there was some variation from that limit in the permit, that that limit is not imposed across the board. And I'd

like you to address that for me.

MR. HILL: The District's determination of best available control technology for carbon monoxide is 10 ppm, and the applicant has requested a limit of 6 ppm. And so that's what the permit reflects.

MS. DENT: But does the permit reflect that for all conditions and across the board?

MR. HILL: I believe so, yes. Let me confirm that. Sorry, there's a lot of conditions, trying to track this down.

(Pause.)

MR. HILL: Let's see, it's everything except for startup, I believe the startup is excluded from this. But for all other operating conditions.

MS. DENT: But it's not for all operating conditions, then?

MR. HILL: It's for all normal operating conditions, -- let's see if there's an exception here for startups. Well, the condition says all conditions. So, --

MS. DENT: You believe it applies, then, to startup, as well?

MR. HILL: Well, I need to confirm that,

but -- yes, it does apply to startups.

MS. DENT: Thank you. The next question that I have is on the BACT analysis for PM10 from the cooling towers. I was a little bit confused. It looks like the Air Quality Management District FDOC does not include the cooling towers.

There's an indication that the cooling towers would come in separately. But yet I think the testimony, the revised testimony today was that the CEC certification does include the cooling towers. I think there was an adjustment, in fact, to include that.

So, is the FDOC covering the cooling towers or not at this point?

MR. HILL: The FDOC does not include the cooling towers.

MS. DENT: So the comment from EPA that a cooling tower BACT determination should include consideration of dry cooling towers which do not emit any PM10 is still a viable option for the project?

MR. HILL: It's certainly something that we will examine when we evaluate BACT for the cooling towers.

MS. DENT: Okay.

MR. BADR: I would like to add something. I'm right here, Magdy Badr with CEC.

The cooling tower was always included in the CEC analysis. It wasn't adjustment today, as you suggested.

If you look at condition AQ25 you will see that the annual emissions is based on cooling tower, and also the cooling tower is included in the language, itself.

The only changes happen today is that the maximum PM10 on a daily basis was short around 66.4 pounds, and we adjusted that. And we also added the language to correct that.

So it has been included all along.

MS. DENT: Right, I'm sorry, I wasn't trying to mischaracterize the testimony. I understood from the testimony earlier that the -- and maybe I was incorrect, that the additional 66 pounds, I think that's what you said, was from the cooling tower emissions.

MR. BADR: No.

MS. DENT: Okay, --

MR. BADR: No, they are not.

MS. DENT: -- I misunderstood your earlier testimony.

MR. BADR: Yes. They were not.

MS. DENT: But your certification then includes certification for the cooling tower, but BAAQMD has not issued a final determination of compliance for the cooling tower?

MR. BADR: In calculating for CEQA purposes the CEC looked at all emission sources from this project, and definitely cooling tower is one of the sources.

And they only emit PM10. So we did calculate PM10, and we took it into consideration as we did the analysis.

The 91.3 tons per year, that's including the cooling tower emissions, and that's what the applicant is providing mitigation for.

MR. HILL: I need to correct a misstatement that I made earlier. The CO conditions do not apply during gas turbine startup or shutdown.

There's a mass emission limit, but the parts per million limits do not apply during startup and shutdown.

MS. DENT: So, the EPA comment for that range does not -- for the CO emission limits be in that range at least does not apply during the

startup condition? That was my understanding, --

MR. HILL: Yes.

MS. DENT: -- too, so I appreciate your clarifying that.

MR. HILL: I apologize for the misstatement earlier.

MS. DENT: The next EPA comment on the preliminary determination that I wanted to ask you on, actually the last one, is the comment that since NOx deposition has a clear impact on endangered species, we believe that Metcalf should consider obtaining local NOx offsets as additional mitigation rather than obtaining additional VOC offsets.

Could you explain to me how you took that into account in your analysis of offsets?

MR. HILL: It's an opinion, it has no regulatory force.

MS. DENT: We'll go to that in just a minute. So you basically ignored EPA's opinion?

MR. HILL: No, we took it under consideration, and gave it all the regulatory force we could, which is none. But we considered it.

MS. DENT: But didn't do it?

MR. HILL: But didn't do it, that's correct.

MS. DENT: Thank you. Now, this is a question really for CEC Staff, I think. I'm just trying to identify any differences in your conditions of certification versus the conditions that are specified in the BAAQMD FDOC.

And if I understand it correctly, the conditions are all basically the same. You relied on what BAAQMD did in their FDOC in terms of your conditions of certification, except for the PM10 offsets, which were imposed specifically by CEC?

MR. BADR: That's not correct. Partially correct that all the conditions, the District conditions, we rewrote in our testimony. However, for the PM10 we added those in to limit the PM10 to 91.3 tons per year. And require offsets for those emissions.

And also we conditions of certification, I believe I mentioned them earlier, these are to do with the construction emissions. They are AQ48, 49, 50 and 52. And those deal primarily with the activities of that during the construction -- or during the construction activities to just limit the amount of emissions

comes out.

MS. DENT: So, just so that I can understand, I understand that the FDOC doesn't include the construction phase, but your conditions of certification do include the construction phase?

MR. BADR: Yes.

MS. DENT: And in terms of the 91.3 ton limit, are you saying that that's not in -- that the limit is not in the FDOC, is that a limit that is only in the conditions of certification?

MR. BADR: No. The conditions of certification for the District and for the CEC is limiting the applicant for the daily emissions, like AQ24, for example. You will see it's the same. AQ25, it's the same. And we are asking for the offsets to accommodate the CEC requirements.

MS. DENT: Right. That is precisely my question. Except for the construction impacts, which are unique to the CEC certification, and the PM10 offsets that you required, except for those two items, are all of the conditions of certification that are in the CEC certificate identical to the BAAQMD conditions in the FDOC?

Did you have anything else other than

those two that were uniquely CEC's?

MR. BADR: In general, no. But the verification for each condition is unique to the CEC and it's not for the District.

Every condition, it has a verification. That verification has to do with the CEC requirements.

MS. DENT: Oh, I see what you mean. Whether you measure compliance --

MR. BADR: How you going to comply with that particular condition.

MS. DENT: Yeah, thank you. Thank you, I think I've got it tacked down now. I was really speaking -- I was speaking of the emissions limits, themselves. Those all, it looked to me like, came from the FDOC identical.

MR. BADR: Yes.

MS. DENT: Okay. Now, I wanted to ask another question of CEC Staff about the local versus regional impact of the facility.

I think you testified earlier today that you thought that the air quality impacts from this project were really regional and not local. And that local mitigation for the air quality impacts was not required. Did I understand your testimony

correctly?

MR. BADR: No, you did not.

MS. DENT: Okay.

MR. BADR: My testimony would go to the fact that the impact from -- PM10 impacts are regional impact. The precursors of the PM10 is regional impact. And they're not localized.

Also, the precursors for ozone and the ozone impact is regional, as well. Not necessarily that you emit at Metcalf site the impact from the whole project, maybe the maximum impact would be around are the maximum hour or one year or what-have-you, as the model would predict, close by the project. But not necessarily that the impact is going to impact just the local area. It will impact the whole region, basically.

That mean if you would buy offsets to mitigate that impact, over the long period of time, over the long run, the whole region PM10 will go down, and you will improve the PM10 impacts in the whole region.

MS. DENT: So your comment then about local versus regional impacts was limited to PM10s? Your comment this morning.

MR. BADR: PM10 precursors and ozone

precursors.

MS. DENT: So you agree though that the maximum impact from the project, for PM10s as well as the other pollutants, the maximum impact from the project, the zone of maximum impact if you want to put it that way, is very localized?

MR. BADR: It's around mile, mile and a half away, yes.

MS. DENT: And the definition of that has been that in that mile or mile and a half away area you're going to have more air quality impacts from the project than you are 15 or 20 miles away from the project? That's what the maximum impact means, isn't it?

MR. BADR: No. The maximum point of impact at one hour or on annual average or what-have-you, yes, it's at that location. But if you will put a monitoring station right there is not necessarily going to measure the impact from that particular project because it get to measure everything around it, so it will be very insensitive, that particular -- it's not going to discriminate.

It's not going to tell you this impact is coming from that project. Or this measurement

is going to come from that project. It's going to measure everything up in the air.

MS. DENT: But I understand that there's ambient or background concentrations, and your monitoring equipment would measure that, as well. But if you could put those aside and have an instrument that didn't measure those, the maximum impact area, for example, I think for PM10s it's just south of the project site, that does mean that that is where you would expect the largest amount of PM10 emissions from the project to be found? That's what the maximum impact means, doesn't it?

MR. BADR: The maximum concentration for the one hour or for the 24 hours or annual, that would be at that particular location as the model would predict it.

MS. DENT: Okay, thank you. So, there will be a higher concentration of the pollutant at that location from MEC than there will be at some location more further distant from MEC? That's what the model predicted?

MR. BADR: Yes.

MS. DENT: Thank you. Now, turning to the issue of offsets, and first of all, you are

aware that the City of San Jose asked early and often that when looking at offsets, offsets be looked at locally, to find local sources of offsets, and that offsets be looked at on a pollutant-by-pollutant basis? In other words, the City objected to interpollutant offset credit trading, you're aware of that objection?

MR. BADR: I'm aware that the City would like to have all the emissions, all the offsets to be as local as possible. And would be on direct, they mean direct PM10 for direct PM10, or NOx for NOx, or VOC for VOC.

But, again, if they are not available at that particular location or as close by, you might agree with me that buying interpollutant trading from localized source would be better benefit to air quality than if you will buy say PM10 from San Francisco, for example.

MS. DENT: You probably don't want to ask me whether I would agree with you.

MR. BADR: Okay. Buying ERCs, that's a market. You have to have a willing seller, a willing buyer to have that transaction. If you can't find it locally you have to go elsewhere to find it.

Now, if you can find it on interpollutant trading that's basically what I would prefer.

MS. DENT: Well, we'll come back around to that in just a minute. I want to concentrate on just whether or not you understood that the City was asking for that. And I think the answer was yes, you did understand?

MR. BADR: No, my answer was that the City would like to have the direct, the local offsets, that's what the City requested. That you will have all the offsets from the local area.

MS. DENT: Well, let's turn to a moment then not to what the City would like, but let's turn to a moment for what EPA would like in terms of offsets and trading.

And I'm going to ask, I think BAAQMD first of all, are you aware that the interpollutant trading is discouraged by USEPA?

MR. HILL: No, I'm not.

MS. DENT: Well, let's see --

MR. HILL: It's not universally discouraged. It's encouraged under circumstances where you can demonstrate that there's a net air quality benefit.

MS. DENT: I want to read some language in a letter from USEPA to Ellen Garvey of BAAQMD and ask you if you've heard this language before, okay?

We have been suggesting that districts intending to adopt interpollutant trading provisions specify: Interpollutant offsets are discourage and will only be allowed between precursor contaminants.

I'm going to skip the definition of precursors.

Such offsets may be approved by the EPA on a case-by-case basis provided that the applicant demonstrates on the basis of EPA approved methods where possible. That the emissions increases from the new or modified source will not cause or contribute to a violation of an ambient air quality standard. In such cases the APCO shall, based on air quality analysis, impose offset ratios greater to -- equal to or greater than those specified by WSR requirements.

Interpollutant offsets between PM10 emissions and PM10 precursors may only be allowed if PM10 precursors contribute significantly to

PM10 levels that exceed the PM10 ambient standards. In no cases shall exempt compounds or other compounds excluded from the definition of VOCs be used to offset for VOCs.

Are you aware of that position by USEPA?

MR. HILL: What's the date on that letter?

MS. DENT: The date on the letter is September 23, 1999.

MR. HILL: That has been superseded.

MS. DENT: Pardon?

MR. HILL: That opinion has been superseded.

MS. DENT: And when was that opinion superseded?

MR. HILL: That opinion was superseded during the course of our adoption of the May of 2000 revisions to our new source review rule.

MS. DENT: Now, did you receive any comments from USEPA on your use of offsets in the Metcalf Energy Center matter?

MR. HILL: Yes, we did.

MS. DENT: And what were those -- and can you tell me the nature of those comments?

MR. HILL: They commented that they believed that because NOx had a direct impact that NOx offsets, in their opinion, would be preferable as mitigation in lieu of VOC offsets. That was their initial position.

MS. DENT: That was the portion of their letter, their comments on the preliminary determination of compliance --

MR. HILL: That's correct.

MS. DENT: -- that I read earlier. And that was what you just disagreed with?

MR. HILL: We --

MS. DENT: You said --

MR. HILL: -- disagree with that position. The impact of NOx on endangered species is the topic of the biological assessment, which, to my knowledge, hasn't been completed yet.

MS. DENT: Correct, the biological opinion has not been finished --

MR. HILL: Yes, so once that's completed then perhaps this issue might be approved -- discussed.

MS. DENT: So the Air District then is thinking about coming back and looking for local offsets for NOx emissions, NOx to NOx?

MR. HILL: No. That won't happen.

MS. DENT: So even though -- not unless you're told to by the U.S. Fish and Wildlife Service, I guess?

MR. HILL: Not unless, yeah, not unless that is what the Fish and Wildlife Service requires.

MS. DENT: And we won't know that until we see the biological opinion?

MR. HILL: That is correct.

MS. DENT: Now, --

MR. HILL: Let me just add one other thing, since we're on this topic of offsets. I want to clarify why the District believes that VOCs are appropriate offsets for NOx.

In this region ozone formation --

MS. DENT: I think --

MR. HILL: -- we are --

MS. DENT: -- I'm going to -- I didn't ask a question, and I do think it's actually in the record, so --

MR. HILL: Okay.

MS. DENT: -- to save time I'm going to --

MR. HILL: All right, I just --

HEARING OFFICER FAY: Let's --

MR. HILL: -- was clarifying the positions that you're asking about.

MS. DENT: I've read the District's position in the record on the VOCs versus NOx.

MR. HILL: Fine.

MS. DENT: I want to ask now about the PM10 offsets that the CEC imposed. And again, the testimony did change today in terms of the source of those offsets. Now they're no longer all in San Jose and Mountain View, one of them is in South San Francisco.

And I want to make sure that I understand that those offsets that are purchased are banked offsets from facilities that are already shut down, is that correct? You're not going out and buying a currently emitting source, you're going and buying credits from a source that has been eliminated previously?

MR. BADR: These are ERCs being banked with the district, and the Applicant went to the bank and they bought these offsets.

MS. DENT: Okay.

MR. BADR: The source we are talking about has been changed. It's a minor amount of

emissions comes out from that source. It's 7.7 tons of PM10 from the Folger's Coffee, and 1.3 tons per year for NOx. That's the one is coming from South San Francisco. And that was -- we knew about that after the fact, after this testimony was written.

MS. DENT: I understand that. So of the 29, almost 30 available reduction credits for PM10, seven were coming from that source, which had previously been identified as San Jose and is now identified as San Francisco?

MR. BADR: Correct.

MS. DENT: But my question -- my question is, the -- whether or not any of these sources, Folger's, Frito-Lay, Glorietta Foods, Rache Products, Cubicor, none of these sources are currently emitting these pollutants, are they?

MR. BADR: No. They bank their offsets in the bank. And these are ERCs being bought back.

MS. DENT: So this is not going to eliminate pollution that's existing locally. It's not going to eliminate pollution that's even existing in the region. It's going to provide money into a bank to be used to buy more credits,

to be used to take facilities somewhere else out of circulation. Is that -- is that the way that works?

MR. BADR: Not exactly, because the way the bank works, if you have, say, a hundred ton of emission you wanted to shut down, to bank that there would be something less than a hundred tons. Let's say, for example, they would become 90, for example.

Now, if you want to buy them from the bank to offset another hundred ton out that will be minted, you will buy them at a rate of -- this particular district would be 1.15 to 1, for example. So we are not buying them at one to one. So as you're banking them, you lose some, and as you're buying them you lose some more to mitigate the same amount of emissions.

So there will be a net benefit on the regional -- on the regional level than will be on -- and the PM10, the PM10 precursors are -- they have a regional impact and not localized impact, as we said earlier.

MS. DENT: Let me ask it another way. When these banked credits are bought, there isn't going to be any physical change in emissions from

these facilities, is there?

MR. RATLIFF: I believe it's been asked and answered twice.

MS. DENT: No, I haven't heard -- I'm sorry. Maybe we could ask the reporter to read it back, but I didn't hear it.

HEARING OFFICER FAY: If there's a simple answer, why don't you just say it.

MR. HILL: The simple answer is that these emission reductions have already occurred. The environment -- the Bay Area is already enjoying the benefits of these reductions.

HEARING OFFICER FAY: So -- so there'll be no further reduction as a result of transferring the credits.

MR. HILL: Not of the transaction, no.

HEARING OFFICER FAY: All right.

MS. DENT: Thank you. Give me just one minute. I think I may be finished.

HEARING OFFICER FAY: Okay.

(Pause.)

MS. DENT: Oh, I do -- I'm sorry -- have another question about the discouragement of the inter-pollutant trading. And this is for either CEC or the AQMD witnesses.

Are you aware that -- are you aware of whether other air districts use the same kind of inter-pollutant trading that has been used in this particular case? Does the Sacramento Air District use inter-pollutant trading in the same way that it is being used in this particular instance?

MR. HILL: I'm not familiar with -- with the rules of the other agencies in this issue.

MS. DENT: Well, I'll ask the CEC Staff. On the Delta Energy Center project, EPA gave the same opinion on the Preliminary Determination of Compliance, that inter-pollutant trading was discouraged.

MR. HILL: Delta Energy Center is in this district.

MS. DENT: Do you know whether the Delta Energy Center uses this same inter-pollutant trading?

MR. HILL: Yes, there are some inter-pollutant tradings. It's a different situation, though, in that what they are trading there is sulfur PM10 precursors for PM10.

MS. DENT: And what about other air quality districts? You said you didn't know anything about other air quality districts. What

about the CEC witness?

MR. BADR: The -- most of the air districts, as I know them, they -- they encourage the inter-pollutant trading ratio. Some of them, they will encourage it at different levels, or all of them, they will use different level of mitigations. That mean you can mitigate NOx for two to one, for example, VOC, or sometimes for more than that, sometimes less than that. Depends on the distance where the offset is coming from. They have a distance ratio and they also have -- they allow for the interpolluting at different ratio.

So it could be a combined ratio to buy these offsets. And yes, the short answer, yes, all of them, almost, they allow inter-pollutant trading.

MS. DENT: But it's not the preferred practice. The preferred practice is to look for some reduction of the pollutant that you are producing. Am I correct?

MR. BADR: No.

MR. HILL: No, you're not correct.

MR. BADR: No. Actually, the guidelines from -- CARB guidelines for BACT and offset, they

also encourage inter-pollutant trading. Let's talk about PM10, for example. They will allow NOx, VOC, PM10 for PM10, and SOx.

MS. DENT: So, let's see. EPA has just sort of flip-flopped its position. It discouraged inter-pollutant trading and --

MR. RATLIFF: Objection, argumentative.

MS. DENT: I'm just going to -- I'm asking a question. They -- EPA's letter in September 1999 said they discouraged inter-pollutant trading. Is it your testimony, then, that that position is changed the other direction, and now they encourage it?

MR. HILL: It's my testimony that that statement taken out of context does not adequately reflect the -- the complexities of atmospheric chemistry. And the preferences of the agency in our district, we are, for the formation of ozone, we are VOC limited, which means that we would rather see a reduction of VOC than a reduction of NOx. It -- it does -- it's better for the health of our community.

HEARING OFFICER FAY: The objection was overruled, Mr. Ratliff.

(Laughter.)

MR. RATLIFF: Thank you.

MS. DENT: I -- I have a question now -- a question about the city's request that you consider other types of mitigation for the emissions from the project, other than emission reduction credits. For example, the city suggested that you look at reduction -- buying reductions from mobile sources, such as had been done, I believe, down in San Diego.

So did the Energy Commission look at -- or BAAQMD, look at anything in terms of mitigation other than emission reduction credits for mitigating the PM10 impacts of the project?

MR. HILL: I'll answer quickly and get out of the way. No.

MR. BADR: I would like to answer that, too. It was proposed in San Diego, but it never materialized, as far as I know. That I think you are talking about, what, Otay Mesa --

MS. DENT: Uh-huh.

MR. BADR: -- Project. Yes. That wasn't materialized.

MS. DENT: So --

MR. BADR: Mobile offsets is extremely -- extremely difficult to quantify, and to use as

offsets. We're still struggling with that, and everybody else is.

MS. DENT: Well, my question really is more -- my question really is more whether or not you considered any other forms of mitigation, other than these emission reduction credits. The answer from BAAQMD was no, they didn't. I guess it's a yes or no answer, either you can --

MR. BADR: It's a no from the CEC, as well. No, we did not. And we prefer stationary sources.

MS. DENT: Okay. All right. Well, in terms of stationary sources, what about emission reduction -- what about emission reductions from diesel generators. Did you consider that as a way to offset emissions from this project?

MR. BADR: If the diesel generators are -- no, I did not consider them. No.

MS. DENT: So nothing other than emission reductions credits was considered as mitigation?

MR. BADR: That's correct. But even if they have any other source, if the Applicant choose to go to another local diesel generator and buy it, or shut it down, they have to bank it and

then buy it from the bank, so it will be the same mechanism we were talking about these ERCs here.

MS. DENT: I guess my question about the mobile sources and the diesel generators is that some of those sources would be located potentially closer to the project site than the -- these sources that you've used for your emission reduction credits. I think you indicated that the -- I mean, the reason that these are used is because these are the ones that are available.

HEARING OFFICER FAY: And what is the question?

MS. DENT: Well, my question is, wouldn't there be sources -- if you looked more broadly in terms of sources, and you didn't just look at facilities that had already closed down, wouldn't you be able to find sources that could be reduced that are closer to the maximum impact area?

MR. BADR: As I said earlier, there are always going to be a source of closer buying. But is that source willing to sell their ERCs to that particular applicant. And that's a question of market demand and supply. If you are not -- if you don't have a willing seller, you don't have a

market for that particular source, don't you.

MS. DENT: So you didn't feel that you could condition this -- you didn't feel like you could impose a condition of certification in this application on anything that the Applicant just couldn't get the market to do?

MR. BADR: No. During the -- the way we came down to this set of offsets or ERCs, it wasn't -- it just been proposed, and we just accept them. There was a lot -- too many proposals before for ERCs, such as street sweepers, for example, or I don't -- I don't recall all of them, but they -- some of them, they weren't very enforceable. So we disagreed with those ones, and we choose to have the ones they are proposing before us now, or before the Commission now, because they are enforceable.

MS. DENT: They're enforceable, but they don't have any physical effect.

MR. BADR: The City of San Jose has approved a project, CVRP, and that project is emitting almost the same amount of emissions --

MS. DENT: I'm going to do the same thing. It's not responsive.

HEARING OFFICER FAY: Please let the --

MR. HILL: I think you have to let him answer the question --

HEARING OFFICER FAY: -- witness answer the question, and then let's --

MS. DENT: I don't think you do. I'm objecting to the lack of responsiveness on the part of the witness.

HEARING OFFICER FAY: Let him answer --

MS. DENT: If you want to let him answer, go ahead. I do object.

HEARING OFFICER FAY: Okay, I'm going to let him answer it.

MS. DENT: Good. We can be here all night long.

HEARING OFFICER FAY: I note your objection.

MR. BADR: As I was saying earlier, the city allowed the board approved CVRP project, and it emits almost the same amount of emissions comes out from that project for precursors of PM10, and for precursors of ozone. Nevertheless, the impact of these emissions are much more localized because they are much shorter stacks coming out from traffic, and coming out from diesel engines around these buildings.

And you did not ask, the city did not ask for any mitigations to these emissions whatsoever. The only mitigation you requested was mitigations are unenforceable. That mean you cannot enforce, for example, ride-sharing, or people to get out of their cars and buy, you know, ride their bikes to work. These are the type of mitigations very unenforceable, and you can't account for, and these are the mitigations you proposed as a city for this project, which emits almost the same amount of emissions as this project.

Metcalf is proposing to mitigate more than what they are emitting, 1.15 to 1 for NOx, 1 to 1 for VOC, and 152 tons of emissions to mitigate 91 tons of PM10. So they did provide adequate mitigations, in my opinion, for a very similar project the city has approved, and they didn't ask for any mitigations. Enforceable mitigation, that is.

MS. DENT: So the -- let me -- let me understand your testimony. You -- I want -- I want to just finish it up.

You found that there were significant impacts and that those impacts needed to be

mitigated over and above what the Bay Area Air Quality Management District found with PM10. You found significance, and you required mitigation for it.

MR. BADR: The project will contribute the existing violation of the state standard. CEQA will require us to provide adequate mitigation to that, to the -- all the emissions being emitted, and the Applicant has done that.

MS. DENT: And again, the -- the only mitigation is the emission reduction credits. There's no -- no physical change in emissions that are going to result from this mitigation package.

MR. BADR: Yes.

MS. DENT: Thank you.

MR. BADR: Thank you.

HEARING OFFICER FAY: All right. We had no request for time from the City of Morgan Hill, so we go to CVRP now.

MR. AJLOUNY: Can I ask one favor? I'm -- I know. I'm really not feeling well. I need to leave. I -- I maybe have 15 minutes, or so. Is this going to mess you up?

HEARING OFFICER FAY: Is that all right?

MR. AJLOUNY: Okay. I -- I appreciate

it.

CROSS EXAMINATION

BY MR. AJLOUNY:

Q Magdy, this is for you. The emissions for PM10 are a great concern of yours; correct?

A They are.

Q To the fact that you wanted mitigation?

A No. If -- if the project doesn't add to existing violations, I think the district, I will go along with the district findings. But because of CEQA responsibility, the project is contributing to existing violations and that's why it became a concern to mitigate every -- all the emissions.

Q Okay. So there is a great concern of PM10 emissions. Mitigation, you feel, is going to help it?

A Yes.

Q Okay. And are you in any control over the so-called Cisco project? Do you have any authority over that project?

A No.

Q Could you protect me, as a citizen, because of Cisco? You know, Cisco's emissions.

A No.

Q Okay. Do you have any authority over the Calpine project?

A Well, you looked at the analysis and they have to have a permit --

Q Okay.

A -- from the CEC.

Q So the --

A If that's what you mean.

Q Okay. The scenario I want to -- I'm thinking of is, we have Cisco, whether people like myself or anyone else wants it or not, it looks like it's going to happen. It's going to have a lot of emissions, like Calpine. You have no authority over it. And then we got Metcalf, who you have authority over, so is it your job to protect my family from anymore harm that -- that you have focus over, you know, that you have authority over? Is that your job here today?

A The reason I mentioned the San Jose project and their approval was to make a comparison and put things in perspective, nothing more than that.

Q Okay. But then you brought it up, so I want to finish it.

A Uh-huh.

Q We can't do anything about Cisco as a neighborhood. Whether I'm upset about it or whether I want it, we're going to have a lot of PM10 emissions because of cars. Correct?

A I don't know.

Q Well, I just thought I heard you say that it's going to have just as much emission as Metcalf.

A No. I said I don't know to if you have something to do about it or not.

Q Oh.

A I don't know that. You are a citizen here, you know that.

Q Okay. All right. Well, with all the politics going around, I imagine I don't have much to say about either one, you know. But anyway, I guess the point I want to make, because I'm -- I don't want to upset Commissioner Laurie, but the scenario is -- and the idea I want to get across is we can't do anything about Cisco, we have this -- this testimony about this uniqueness of this valley, and you can do something about Metcalf.

In you choose -- you chose to do mitigation by credits that are not going to help the local effect of this area.

A I think we done a lot by -- with Metcalf.

Q And I agree. I give you credit. You were that concerned about Metcalf's emissions of PM10 that you made them do -- excuse me -- you made them do offsets that the Bay Area Quality Management District didn't.

A Yes.

Q So that tells me that you're looking out for me. And I appreciate that. Correct? That's why you did it. You're looking out for us, for -- for mitigation. Right?

HEARING OFFICER FAY: Well, that -- Issa, ask a question.

MR. AJLOUNY: Well, I --

(Laughter.)

HEARING OFFICER FAY: In fact, Issa --

BY MR. AJLOUNY:

Q I mean, that's why -- I guess what I'm saying is the CEC is that concerned about PM10 that they felt it had to be mitigated. Even though the Bay Area Quality didn't think so, we have someone better looking out for our health, and that's called the California Energy Commission. And they felt the seriousness of

PM10, so they wanted credits --

A No. The district, I think they have very serious responsibility about PM10, too. But they have thresholds, and these thresholds are embedded in their rules. And if they don't trigger that threshold of emission limits, they don't have to mitigate. And that's part of their rules.

Now, these rules are also part of the AQMP, Air Quality Management Plan, which been revised recently to show that how long will it take to get the attainment. So the AQMP will get that Bay Area to attainment at certain time.

Q Okay. I -- I just don't want to take more time, so I'm going to cut you off here. I'm sorry.

You heard witness testimony -- you heard testimony yesterday about -- from the Applicant, about the terrain, I guess is the word. It's a little bit complex for when you're looking at air pollution because of the -- the hills and the mountains around us. Do you remember that?

A Yes.

Q Do you agree with that? It's more challenging than the flat land, I'm sorry.

A They are more challenging, but I agree with that. Yes.

Q Okay. So you agree with yesterday's testimony. So with that, do you agree that yesterday's testimony, when it was stated that it would be much easier to mitigate air pollutions and credits, and things like that, on flat land versus maybe the concern, this hypothetical concern or this concern that was brought up today about being in the valley, and stuff, would be easier on the flat land than the --

A The impact, you're talking about, not the mitigation. Because I heard the word mitigating on flat land versus on complex terrain.

Q Yeah. I guess would it be easier to analyze the air pollution and have less impact on a flat land versus this unique terrain that we're in at Metcalf?

A No. The model will look -- because you have to put the topography to the model, the model get to consider all these things. It doesn't matter if it's flat, the model will look at it as flat. If you input it as it has hills and mountains, and --

Q Okay. Let me ask this one.

Hypothetically, if the testimony today was correct from these professors, would it concern you about this PM10 emission? If that was true, and that's hypothetical. If it was true of the testimony today, about what the professor said, wouldn't the PM10 be a little bit more concern of yours than an open space flat land?

A I think the professors testified to the fact that the maximum -- that the model, ISC model, has predicted, or over-predicted the maximum impact. And that maximum impact, that's what we are using in our analysis. So perhaps that professor and the Staff, and I think the Bay Area Air Quality Management District also analysis is over-conservative.

Q Okay. And I'm going to go back to my original question. Hypothetically, if the professors were correct in what they stated, would it concern you about the PM10s being stuck in this valley versus a flat land, where you won't have that situation? So assume that they're correct. Would it concern you?

A From the down wash reasons, I might agree with you that --

Q Okay.

A -- if it's a flat land, if you -- what you mean is flat land that -- that the plume will travel much --

Q No surrounding hills, and that kind of thing.

A -- that will go farther. Perhaps you are correct in that.

Q Okay. It would be better, maybe, for our environment?

A I don't know that.

Q Would you -- would you consider mitigation for the PM10 if it was in a open space flat land?

A Yes.

Q You would. Okay.

A It depends on the conditions.

Q Okay.

A I will. If the project on that flat land contribute to existing violation, yes.

Q Okay. I think I made my point here.

Okay. If the emissions are too high after this power plant, let's say hypothetically it does go in, and the emissions are too high. Is there any condition of certification to install oxidation catalysts or do something different to

the technology to bring it down?

A Are you -- let me try to understand your question.

Q Okay.

A Are you saying that if we -- or the district has conducted the source test --

Q Yes.

A -- that source test will show that the amount of emissions are much higher than what they --

Q Proposed.

A -- they are proposed, are they going to put a CO catalyst down. So that is, yes.

Q Okay. In the start-up conditions, I think it's 156 start-ups per turbine per year, something like that?

A I got to look over. I believe they are 104 cold start-up, and 520 hot start-up. So a total of 624.

Q Okay. And in your expertise in this, as much as you have, because I know you're air quality, but I'm having a hard time as an Intervenor understanding why there would be so many cold start-ups and -- and warm start-ups, or hot start-ups, that are in the Application for

Certification, when supposedly there's such a great need for power and we need it so bad in San Jose, why would they turn it off, other than at break-in?

I know that's not your expertise, but can you help me understand that?

A Well, if you know it's my expertise, how I can help you.

Q What -- well, I just thought that you --

(Laughter.)

BY MR. AJLOUNY:

Q Okay. If you don't know, just say I don't know.

A No. You just told me that's not my expertise, so how I can help you?

Q Do you know the answer, Magdy?

A I did some resource planning before, so I guess I can answer that question.

Q Okay. Answer it.

A Sometimes --

Q Based on your knowledge.

A Sometimes, from -- it depends on the need for the market, or the demand for electricity, they might have to start or dispatch their units on -- on a very short notice. Or

sometimes they have, okay, they shut it down for few days and now they have to start it again. And now they wanted to have a factor for perhaps that the turbine will trip offline. And they wanted to start it again. So they -- they don't want to be in violation of emissions during the year. Remember, these are like allowance for them to spend. Once they spend this allowance, they are not allowed to operate anymore.

So that will give them the flexibility for operation --

Q Okay.

A -- they need to run this power plant.

Q Okay. And with your expertise now, you've done plenty of these. I think you said nine or ten. Are these high -- are these start-ups that are proposed in this AFC more on a higher end, as, you know, along with the other AFCs that you've dealt with?

A No, they are almost around the same range. And some of -- yeah, except some, but the -- every power plant is different. But in general, the number of start-ups are in the same level as the other projects we see.

Q Yeah. And again --

A Most of them, they ask for much higher start-ups, actually, than this one.

Q And knowing that we're in such a crisis in the Silicon Valley, I'm having a hard time still understanding if it's just like any other power plant in the State of California, the ones that you've dealt with on start-ups and shutdowns and all that kind of stuff, why would an AFC have that if there's such a great need?

A Because the AFC is a regulatory document. That mean it's almost -- it's a binding conditions. They cannot exceed whatever in these conditions. Otherwise, they have to come with an amendment, and so forth.

If you are asking me in reality is this power plant going to emit as much emissions, or going to start as many cold start-up and hot start-up as is proposed now, my best, or my professional judgment here will say no, they will not. They might be running on a steady state for few weeks, and perhaps shut it down for whatever maintenance and come back again, online again. They probably rammed it down, or rammed it up, whatever they need to do.

But no, the answer, they might not have

to start cold and hot as many times as proposed. But if I'm the developer of that project, I need that flexibility so I will not run out of allowance or number of offsets, or whatever, I mean number of start-ups. I need the flexibility for operation of my power plant. That's why I will ask for higher number of start-ups, because -- so they know how many I'm going to use.

Q But in reality --

A Remember -- remember, you are estimating something going to happen over not the next year or the year after, for the over coming 30 years. So you need to have some conservative estimate, as well.

Q But there's more emissions and more pollutions when start-up happens. Is that correct?

A And more offsets is provided for that --

Q Okay.

A -- particular reason. That mean it's not like I want a hundred start-ups and I'm not going to pay for it as offsets. No. They do pay for it, and you have to provide offsets to mitigate that.

Q Yeah. And I understand. My -- I think

my biggest concern as an Intervenor, local resident, is the local versus the regional air credit theory, which I'm not going to go into.

So would you, as a -- as the CEC Staff, would it be reasonable to recommend less start-ups since you know there's such a great need in this -- this area for power, that it might be recommending less start-ups and everything in the AFC and changing that so they won't have to pay as much credit, and then we won't have to suffer as much emissions in this local area, because we have people like Cisco who don't even have regard for our health, and, you know, they're polluting our air, and we're in this valley. And I have no -- I have no control over that, Magdy. You have control over, the CEC Staff, and your suggestions, would you consider maybe lowering the start-ups and shutdowns?

A No. I'm not the operator of that power plant.

Q Okay.

A And the operator of the power plant will propose their power plant based on certain assumption of operations. So I'm not going to change it for them, because I don't know what

might happen. They have a study that, for sure, before they recommend that much of start-ups, because they know that they have to pay millions of dollars to mitigate that amount of emissions. So it's not only an operating point here, it's also economical.

Q Okay. Yesterday's testimony talked about alternate sites, picking up this plant, putting it somewhere else, might take -- I think the words were two or three months doing the modeling, and just getting -- if there is a way to expedite it, you could pick this plant up, put it in one of these alternate sites and do the modeling and get everyone happy, Bay Area Quality District, and everybody happy for hypothetically putting this on one of these six alternate sites. Do you agree with that testimony yesterday? Do you remember that?

A It will take a lot of time to study the six --

Q They mentioned two or three months. Do you agree that it would only take two or three months, taking the existing AFC, plot it somewhere else, and do the modeling --

PRESIDING MEMBER LAURIE: Issa, the

testimony was Mr. Rubenstein's --

MR. AJLOUNY: Yes.

PRESIDING MEMBER LAURIE: -- and his -- his analysis would take two or three months. I don't know if it's appropriate to ask this witness how long it would take Mr. Rubenstein to do his analysis.

MR. AJLOUNY: Okay.

HEARING OFFICER FAY: Did you want to ask him how long it would take the Staff? The Staff can only testify --

MR. AJLOUNY: Yeah. Yes, I -- I thought his analysis was part of the Staff's, because I thought they kind of worked together to do the modeling and stuff.

MR. BADR: Will you repeat your question, please?

BY MR. AJLOUNY:

Q How long would it take if they put this power plant and they presented you with an AFC in another place, to go through this -- knowing all the details that you know about this power plant today, so everything's identical except the terrain, pretty much.

A Not exactly. Because the -- we have --

if you move this project somewhere else, you have different data you have to look at. You have to look at different requirement --

Q I understand --

A -- you have to look at different impact, and also you got to look at different local residents around it, perhaps they have the same concerns that the one you have. So this process, for example, take almost two years to get to this point --

Q Yes.

A -- we are in. I don't know how long it going to take if I move it somewhere else.

Q Okay. I'm just talking about your analysis, your modeling and that kind of stuff.

A Well, the analysis and the modeling, that's not everything. Holding public workshops, know what the concerns are and how to address them, that's part of the process as well.

Q So is this --

A So the process doesn't stop at getting a couple of numbers in the model and run the computer model, and here you go.

Q Okay. So I -- I'm not going to get an answer?

A I don't know. I think I provided an answer.

Q I said how long -- I didn't hear.

A I don't know.

Q Okay. The answer is -- the Bay Area Quality District, do you have any idea how long it would take you to do modeling for a new location, exactly the same power plant. Same look, same feel, touch, just sitting on a different piece of land, and on a -- on a flat piece of land that doesn't have hills really as close, that special terrain that we're talking about.

MR. HILL: I would guess, in accordance with Mr. Rubenstein, about two to three months.

MR. AJLOUNY: Okay. Thank you. One last question.

BY MR. AJLOUNY:

Q N2O -- one last topic, I should say, or category. N20 has never been mentioned in any documentation, in any workshops that I've heard, and I understand there's N20 emissions. Is that your understanding, Magdy? I don't know how to say your last name, Magdy. I always call you Magdy, so I apologize.

A There might be N2O.

Q There might be. So you haven't -- you haven't --

A I didn't look at it. It's not --

Q You didn't --

A -- it's not one of the criteria pollutants.

Q Do you realize what --

A NOx is -- NOx is --

Q No, I'm talking about N2O. Do you understand what N2O can do to the ozone layer?

A I think that's a better question asked to Mr. Long.

Q Fine.

(Laughter.)

MR. LONG: And I can't answer that. I'm not an expert on the ozone layer, so I -- I can't comment.

MR. AJLOUNY: Wow. I guess I'm surprised. Are you familiar with N2O?

MR. LONG: I'm familiar with NOx being composed of several different nitrogen species. But -- but the ozone layer is -- is something beyond the troposphere. It's in the stratosphere, and we, as a regulatory agency, deal with emissions in the troposphere.

MR. AJLOUNY: Okay. Back to my question. Are you familiar with N2O?

MR. HILL: No. It's not a criteria pollutant that the district regulates, and there are not ambient standards that must be met.

MR. AJLOUNY: All right. Are you familiar that it -- does N2O get emitted by these turbines when it burns natural gas?

MR. HILL: I'm not the person to ask that. You know, it's an oxide of nitrogen. I would be surprised if it wasn't emitted in some small quantity. But it's not bearing -- you know, there's not a lot of oxygen in it.

MR. AJLOUNY: But N2O is emitted?

MR. HILL: I don't know. I've never seen any data that indicates that --

MR. AJLOUNY: Have you ever heard about N2O being emitted?

MR. HILL: From a turbine?

MR. AJLOUNY: Yeah.

MR. HILL: No, I have not.

MR. AJLOUNY: Wow. That just amazes me, I guess. Because my little bit of homework came up with N2O emissions, and I -- has anyone here ever heard of N2O?

(Laughter.)

MR. HILL: We've heard of it.

MR. AJLOUNY: I mean emitted from -- I mean the point I want to make is N2O's emitted with SCR technology, with SCONOX technology, there's zero N2O emissions, and --

MR. HILL: That -- that would not be true.

MR. AJLOUNY: Well, not knowing -- knowing how much comes out and this and that --

MR. HILL: No, no, no. I said that N2O is emitted from a combustion process. SCONOX controls the combustion process. There will be N2O coming out of that process.

MR. AJLOUNY: Well --

MR. HILL: So it's not true that there would be zero.

MR. AJLOUNY: Well, coming out of the -- okay. Well, from my homework -- well, anyway, so I guess I can't prove my point if -- I'm done. Thank you very much for --

HEARING OFFICER FAY: Okay. Thank you.

MR. AJLOUNY: I appreciate this.

HEARING OFFICER FAY: Okay. And thank you to CVRP, Mr. Beers, that was very gracious of

you. It's your turn now.

MR. BEERS: I'd like to ask -- start out by asking Mr. Lim some questions, and I don't understand what the -- what ruling, if any, has been made with regard to his testimony, but let me see how much I can accomplish on that score this evening.

Mr. Lim, you're --

HEARING OFFICER FAY: Excuse me. Mr. Beers, maybe I should just clarify it now, because I have discussed this with Commissioner Laurie. And what we've determined is that Mr. Lim's testimony will be admitted. The Committee will expedite the posting of the transcript so that we get that back at the fastest possible way. That will cut the time in half, at least, on the transcript. And Mr. Lim will be available, Dr. Lim will be available on March 16th. And that would be in the afternoon, sometime late afternoon, perhaps, for a few hours, and we'll notice that as an Evidentiary Hearing. And then in the evening, we would have our policy hearing that I discussed earlier.

MR. AJLOUNY: Just a comment, we're going to be at the Energy Summit, downtown San

Jose, that the Mayor's having until five o'clock. So it excludes us, the ones that are objecting to the whole issue.

HEARING OFFICER FAY: Well, that's not the intent. The intent was to give you more time.

MR. AJLOUNY: Oh, well -- intent is we can't go, because there's another --

HEARING OFFICER FAY: Okay. Obviously, you can choose --

MR. BEERS: I'm looking at the 13th, 14th or 15th, when you already have an Evidentiary hearing scheduled.

HEARING OFFICER FAY: We could do it on the 15th, then. If Dr. Lim is available.

(Inaudible asides.)

HEARING OFFICER FAY: All right. Yeah, the 14th -- the 14th is scheduled for a hearing, and I'll ask Mr. Ratliff, can you -- we don't have to take time right now to see if Dr. Lim is available, but I would like to accommodate the people who are concerned, if we possibly can. The only reason for picking the 16th was to get as much time as possible.

Mr. Beers, why don't you go ahead with your cross now. You have the ruling on the

admissibility of the testimony, and that Dr. Lim will be made available later. The 14th is all right?

MR. KWONG: The 14th is okay.

HEARING OFFICER FAY: Okay. Mr. Kwong said the 14th is all right for his client to be available, so we'll notice the 14th in addition to the topics noticed, we'll notice that Dr. Lim will be available for cross examination.

MR. BEERS: And I would like to proceed, because this may save me a trip down here on the 14th, which was the session I would not have otherwise attended.

HEARING OFFICER FAY: Great.

MR. BEERS: And at the same time, since I haven't seen the transcript, I'd like to reserve at least the opportunity to look at the transcript and see if -- if further questioning --

HEARING OFFICER FAY: Absolutely.

MR. BEERS: -- is okay at that time.

TESTIMONY OF

KENNETH J. LIM

called as a witness on behalf of Commission Staff, having been previously duly sworn, was examined and testified as follows:

CROSS EXAMINATION

BY MR. BEERS:

Q Mr. Lim, your declaration is dated February 27th; is that correct?

A That's correct.

Q That's yesterday. And did --

A No, I believe that's the day before yesterday.

Q Okay. Did you have an opportunity at the time before your declaration was prepared to review anything relating to the Cisco or CVRP project, which you reported in your testimony?

A Are you referring to the -- the Cisco, or the CVRP project that Mr. Ratliff asked me about during the testimony?

Q Yes.

A I believe I discussed it with him prior.

Q Okay. And --

A I don't know the exact time. It was in the same timeframe, whether it happened just before or after. I don't know the -- but it was during the same time period.

Q All right. Did I get you correctly in your direct testimony that it was your understanding that there would be a series of

diesel generators at the CVRP project, and that their emissions, even if operated only for maintenance purposes on an annual basis, would produce a cancer risk of from six to ten in a million?

A I believe I said five to ten, yes, in that regard.

Q And Did you -- and I believe you indicated that that information came from an environmental impact report; is that right?

A No. I believe that was my opinion, based on our office at the Air Quality Management District reviewing something, approximately 15 cases of standby engines. And that we would estimate that based on the size of the engines as stipulated in that EIR, approximately 1.2 megawatts each, that typically engines would produce local impact of an approximately increased cancer rate of five to ten, at least.

Q Well, I misunderstood you. I heard you -- I thought I distinctly heard you say in your direct testimony that you'd gotten information from an environmental impact report about the diesel generators at the CVRP project?

A A description of that project, yes.

Q And did you personally read the environmental impact report portions that dealt with the diesel generators?

A That description, yes, I did.

Q And do you have that with you, a copy of that?

A Yes. It's -- it's --

Q Can you get it?

A I don't have the specific page tagged.

Q Did you, in fact, read any portion of this EIR yourself?

A I looked at it for the purpose of identifying the size of the -- and the description of the engines.

Q Okay. Is that the only purpose for which you looked at it? In other words, just to identify the size of the diesel engines that would be involved?

A That's correct.

Q Okay. Who gave you a copy of that EIR?

A Mr. Ratliff.

Q When did he give that to you?

A He gave it to me I believe yesterday. However, he discussed the -- the details of that description with me prior to my testimony. And he

brought it -- this to my attention just to verify this description, approximately 1.2 megawatts engines, was correct. And he showed me this EIR and asked me to verify that. And I said yes, that's --

Q So the day before yesterday, Mr. Ratliff called you up and said I'd like for you to talk --

MR. RATLIFF: Objection. That's argumentative.

MR. BEERS: No, I'm asking a question.

HEARING OFFICER FAY: I think it's a question, and it's allowed. Go ahead.

BY MR. BEERS:

Q The day before yesterday, Mr. Ratliff called you up and asked you if you would discuss in your testimony the implications of the fact that there would be six diesel generators of 1.2 megawatts each at the CVRP project. Is that correct?

A I think Mr. Ratliff asked me to put the -- the health impact of a central power plant, such as the Metcalf facility, in perspective. How does it compare to the diesel engines that the district is concerned about. So I explained our concerns about the criteria pollutants, nitrogen

oxide, and toxic air contaminant, PM10.

Q Uh-huh.

A He further asked me if I was aware of the CVRP project.

Q And what did you tell him?

A I said I'm not directly involved with that project, and he said there was a series of diesel engines proposed there. And that's how the subject was raised.

Q Okay. And so -- and then you came, and did you have any further discussion with him about it that you can recall?

A Yes. Prior to -- during that conversation, I said, very similar to the -- my statements here, that the relative risk from -- cancer risk, using established State of California risk assessment methodology would indicate that the operation of these engines, even on standby, would pose a greater health risk from a cancer increase point of view than a central pump, a main central power plant, as the one discussed.

Q Okay. So -- and you made the statement, in fact, that the cancer risks from the operation of the six diesel engines at the CVRP project would be six to ten in a million; right?

A I believe I --

Q I heard you say that.

A I believe I said -- yes, I think I said, at least, if I did not say that, I said I would think at least.

Q Okay. So you came in here to offer testimony, sworn to, under oath, that the CVRP project was going to have six diesel engines which would have an impact of from six to ten cancer -- excess cancer risks in a million, thus exceeding the standard of significance and making it a more harmful project than the Metcalf Energy project. Right?

A Assuming that the project went ahead, the CVRP project, and it did have the six diesel engines operating on standby basis, the estimated emissions impact would be higher for the operation of these engines than a central power plant such as Metcalf.

Q And the only thing, the only piece of information you had was that there was -- there were going to be six diesel engines of 1.2 megawatts each. And -- and you looked at the EIR to verify that fact alone. Is that correct?

A I looked at the EIR for the purpose of

identifying the number of engines and the description of the engines. And based it on our review of other similar engines in operation, or under permit review, for the district.

Q And you didn't feel like there was enough responsibility to look a few pages more in the EIR to find out what was really being discussed there, other than just to look at the size of the megawatts and the -- the number of engines. Is that correct?

A It was the description and use of the engines.

Q Okay. Well, can I point out to you, Dr. Lim, that if you'd turned a few pages in the environmental impact report, and I'm referring here to page 4-409 of the first amendment to the DEIR, it's the same document that you've got in front of you, that I guess was provided by Mr. Ratliff to you. If you'll read there, it says, the specific equipment has not been selected at this time.

A Yes, I believe I -- I noted that, and I read that report.

Q But I don't recall your saying that in your direct testimony. I recall your direct

testimony, under oath, being that there were going to be six diesel generators there.

MR. RATLIFF: Objection --

MR. BEERS: Am I correct in that --

MR. RATLIFF: -- objection, Commissioners. I think this is somewhat of a misconstruction of Mr. Lim's testimony. I should say Dr. Lim's testimony. He testified that -- that his conclusions would be true regardless of whether even the more so-called green diesel equipment would be chosen as --

MR. BEERS: I don't think that's it at all. Is this an objection, or are you offering testimony?

MR. RATLIFF: Well, I think you're misconstruing his testimony.

MR. BEERS: Why don't you make an objection, if you have one.

MR. RATLIFF: I did. I did object.

MR. BEERS: What is your objection?

MR. RATLIFF: My objection is you're misconstruing his testimony in your question.

MR. BEERS: Fine. I'll move on to the next question.

BY MR. BEERS:

Q Dr. Lim --

HEARING OFFICER FAY: Yeah, I -- I'm going to sustain the objection, but allow Dr. Lim to explain it, if he's concerned.

THE WITNESS: Would you ask the question. Or repeat what you just stated. I was interrupted by this train of thought.

BY MR. BEERS:

Q Okay. We were talking about the fact that if you read on in the EIR --

A Oh, yes. Yes. Now I remember. Thank you.

Q -- you'll find that there's a statement --

A Yes, I think you mentioned that there is a statement that says that the final equipment has not been selected.

Q Well, it says the specific equipment has not been selected at this time.

A Right.

Q Right?

A You understand what I just said, do you agree with what I just said, that the final piece of equipment was designed to whatever, has not been determined.

Q You and I are both talking about the same thing, and the language is --

A Okay.

Q -- the specific equipment has not been selected at this time.

A Right. Right.

HEARING OFFICER FAY: I'd like both witnesses to please speak more closely into the microphones. We're having trouble picking you up. I mean, I'm sorry, Mr. Beers. Counsel and -- and the witness, please.

BY MR. BEERS:

Q Did you have anything more you wanted to say on this?

A Yes. Yes. The current state of art of these engines is about 0.1 gram for horsepower of the toxic air contaminant PM that we're discussing here. In many cases, even at that level, and operating only for testing purposes, our work has shown that the increased cancer risk is typically in the five to ten in a million range. And that's for a single diesel engine.

If these engines were to even incorporate the latest particulate filters in it, and reduce emissions by an additional 70 percent,

the fact that there are six standby engines would still bring the risk up to at least in the five to ten in a million range.

So I looked beyond those -- the page of description, and it did acknowledge that the final piece of equipment would remain to be selected. However, even using the best control equipment, they would still be a higher risk than the central power plant.

Q Well, and would your conclusions hold true if the equipment used consisted of a natural gas or propane fired generator?

A I would say that natural gas or propane fired generators would be a cleaner alternative. Yes.

Q Okay. And so you were not aware that, for example, that only four pages later this draft environmental impact report says these limits can be met by selecting any reasonably feasible measures from the following list, and then it lists the use of any emergency generator or boiler that meets these limits without add-on controls, for example, natural gas or propane fired?

A I believe that's one of the options, one of the options considered, yes.

Q Okay. But that would not be a diesel engine; correct?

A That's correct.

Q All right. And then did you read on that the list included use of any emergency generator or boiler combined with post combustion or other controls, including, but not limited to, and then it lists a whole series of equipment. Do you recall reading that?

A Yes, I did.

Q Tell me what equipment was listed.

A Let me rephrase what I said. I -- yes, I skimmed those pages. I think there were alternatives discussed, including the fuels you mentioned. I think you mentioned boilers, I think it mentioned control options such as selective catalytic reduction, and a few other control techniques, perhaps. Yes.

Q Okay. And when you gave your figure of six to ten in a million, you weren't doing calculations on the basis of these different control technologies; is that correct?

A Those are alternatives, and these would not be diesel engines, and I was answering the question of Mr. Ratliff when he asked specifically

about diesel engines.

Q Okay. But I -- I got the distinct impression that you were talking not just about diesel engines in the abstract, but the diesel engines that were going to be installed at CVRP. Did I misconstrue you in that regard?

A It was my understanding Mr. Ratliff asked me about the diesel engines that were proposed at the CVRP site, and I think he did say proposed. If he didn't, that's how I interpreted --

Q Okay.

A -- that he asked. So I was answering in response to the diesel proposal, and if there are other alternatives that will be built instead of diesel, I applaud that.

Q Okay. Applaud CVRP and Cisco? Is that what you mean to imply?

A I applaud anyone who would convert from diesel engine operation to a cleaner alternative.

Q Okay.

A Yes.

Q And were you aware also that there was, in fact, a health risk assessment done in the very pages that you had reference to?

A I believe there was, but I did not review that too.

Q Okay. So you were not aware, then, that there was a health risk assessment done in here which found that there were ways of having these kind of emergency generators that would not produce a significant health risk; namely, it would be within the one in a million range. You were not aware of that.

A Well, I -- you pointed out the list, and -- of other alternatives, and I acknowledged that I was -- did look at that page with those alternatives, and that those other alternatives -- if some of those other alternatives were chosen, because, for example, one -- one of the things on the list was selective catalytic reduction. That would not reduce the particulate matter to any degree. So it would not reduce the risk from diesel operation any degree.

However, other alternatives, like cleaner gas, that -- those alternatives would result in lower risk.

Q Do you want me to repeat my question?

A Certainly.

Q Were you aware that there was a health

risk within the several pages after the megawatt size that you read, that showed that the equipment that would be used for emergency generators could be configured and set up in a way that would produce a health risk that would not be significant; namely, it would be within the one in a million range. Are you aware that that kind of assessment was contained within the next few pages of the environmental impact report?

A Right. But also, as the -- the --

Q I'm just asking you whether you were aware of that.

A I am aware of that statement.

Q Okay. Did you read that health risk assessment?

A No, I did not.

Q Okay. And were you aware that the concluding part of this section states that the ability of any selected option from the menu of options to meet the NO2, PM10, and diesel exhaust emission limits, must be demonstrated by dispersion modeling and an AB 2588 health risk assessment approved by the City of San Jose before it is implemented. Were you aware of that?

A I did not read that section.

MR. BEERS: Okay. I'd like also to ask Mr. Ringer some questions, if I could.

TESTIMONY OF

MICHAEL RINGER

called as a witness on behalf of Commission Staff, having been previously duly sworn, was examined and testified as follows:

CROSS EXAMINATION

BY MR. BEERS:

Q Mr. Ringer, isn't it true that you relied on the Applicant's risk assessment, that the Energy Commission Staff relied on the Applicant's risk assessment and Supplement C as its risk assessment, in effect?

A I looked at it.

Q Well, does the Staff have a risk assessment?

A When you say I relied on it, I didn't just look at the final number and say that's fine with me. I --

Q Well --

A -- I looked at how it was done, what the assumptions were, you know, each step in the

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process. But I did not conduct my own independent health risk assessment.

Q Okay. So the Energy Commission Staff didn't conduct its own independent risk assessment here.

A Correct.

Q You relied instead on the one prepared by the Applicant. I understand you to say you looked at it, considered it, et cetera. And that's the one that was contained in Supplement C; is that right?

A I believe substantially, yes. There are different data requests and responses that may have been after Supplement C.

Q Well --

A I relied on the Applicant's Supplement C, plus any -- any additional information that they gave me upon my request.

Q Well, I'm -- I'm limited to what you've put in writing before you appeared here, and whatever it is that you testified to. And I didn't hear you say that you'd prepared some kind of risk assessment other than the Applicant's risk assessment in Supplement C, that that was the one that you relied on. Am I correct about that?

MR. RATLIFF: I believe the witness answered the question, and in doing so provided the additional information which the -- I think he's referring to the additional information that the Applicant provided regarding the health risk assessment, if I understand his answer. I don't think he's saying that -- I don't think you're arguing. I just think he's trying to give you further explanation.

MR. BEERS: Well, I know we had some testimony here yesterday about a November 17th letter, and so forth, but I didn't think that in the process of my asking questions about that, that we were thereby changing the Staff's risk assessment. I mean, I'm assuming whether the Staff's independently done one, or whether they're relying on the Applicant's, that there's something we can point to in the record as being the Staff's risk assessment.

MR. RATLIFF: I believe he testified it's -- it's the Applicant's risk assessment that we're talking about here.

HEARING OFFICER FAY: Is that correct, Mr. Ringer?

THE WITNESS: I did not do an

independent risk assessment. I depended on the Applicant's risk assessment and any information subsequent to that that helped me in my determination. Including letters and/or data that was supplied after the Supplement C, including the testing in Texas, including a letter from Electric Power Research Institute.

BY MR. BEERS:

Q Well, I guess what I'm -- again, I don't want to beat a dead horse here, but I -- to know what the Staff's assessment is, whether it's independently done by the Staff or -- or relied upon from the Applicant, it's got to appear somewhere. And the only thing I've seen appear is the FSA, which appears to me to rely on Supplement C. Am I right about that, in terms of a risk assessment endorsed by the Staff?

A Well, plus my rebuttal testimony also references other material.

Q I'm looking at it, but it doesn't reference anything relating to the November 17th material that we talked about.

Well, let me -- let me -- you would agree, wouldn't you, that the risk assessment that's set forth in Supplement C is not one that

includes any low load or startup emissions?

A Correct.

Q So that was not a matter that was of concern to you at the time you were reaching a conclusion as to this risk assessment that the Staff would rely on. Is that correct?

A Let me look at the date of Supplement C. Supplement C is dated February 15th, 2000. And I believe some of my data requests were after that date.

Q I'm talking about the FSA.

A I thought your question was did I rely only on the information in Supplement C. Why don't you restate --

Q I'm trying to find your risk assessment. Or -- or the one you relied on.

A Well, I just told you what I relied on. The risk assessment that was done by the Applicant, plus information that was provided by the Applicant subsequent to that, in order for me to determine whether or not I needed to make any changes or whether I accepted it the way it was.

Q Okay. Now, in your rebuttal testimony, you quote and highlight in bold a passage from the GRI EPRI report that concludes that the measured

emissions in the GRI EPRI report will not post significant carcinogen or non-carcinogenic public health risks. Is that right?

A Yes.

Q And I take it that your insertion of that in bold in your rebuttal testimony was meant to -- to make the point that the testimony submitted by CVRP that relied on the GRI EPRI study for anything it might mean, it certainly didn't mean there would be any adverse health impact; right?

A You're asking me what CVRP meant when they --

Q No, I'm asking you why you chose to -- what's the implication of the quotation you've got in your rebuttal testimony?

A This was a study done and sponsored -- well, it was sponsored by the Electric Power Research Institute and the Gas Research Institute, in order to look at the emissions of toxic air contaminants from many, many different types of sources, including combustion turbines fired by natural gas, and done specifically not only to figure out what the emissions levels were, but what the associated health impacts were. And I

thought it was important that their most important conclusion be brought to light, since I did not think that CVRP was really doing that.

Q The most important conclusion being that there were no significant health impacts?

A That is a direct quote. And it says that the most important conclusion from the air toxics testing program. That is their words.

Q Okay.

A And -- and I thought that was important, since we're discussing impacts on health.

Q And I take it that the EPRI GRI study was put forth by CVRP, and you so understood it, because that report indicated that at lower loads there were higher emissions, or emission factors for some of these toxic air contaminants; correct?

A Correct.

Q And so you accepted that part of the report, but took comfort in the fact that that still meant there wouldn't be any significant health impacts. Is that right?

A I accepted the report. I have no reason to doubt the -- either the conclusion or the data in the report. I accept all aspects of the report, including the -- one of the other

conclusions that says the emissions measured from the gas turbines are specific to the turbine make and model tested, and the operating conditions under which the measurements were taken. So I also took that to mean that if one were going to take data from a specific type of turbine, done under specific conditions at a specific time, you have to be extremely careful in how you use that data and what interpretations you make from that data, what conclusions you draw from that data.

Q Okay. Well, again, I'm posing the question to you. You apparently accepted the results of the study as you were interpreting it, and took comfort from the fact that there were higher emissions reported there --

MR. RATLIFF: Objection. It's asked and answered.

MR. BEERS: I don't believe I --

THE WITNESS: And I don't believe I said I took comfort in anything.

HEARING OFFICER FAY: I'm going to overrule that, Mr. Ratliff, because I -- I didn't hear that --

MR. BEERS: I didn't hear the answer to that.

HEARING OFFICER FAY: -- I didn't hear the same question with an answer.

Do you have the question in mind, Mr. Ringer?

THE WITNESS: Why don't you --

HEARING OFFICER FAY: Maybe you'd better repeat it.

BY MR. BEERS:

Q Is it the case that you accepted the study results showing that at lower loads there were higher emission rates, but took comfort in the study, nevertheless, as not indicating that there would be significant health impacts?

A I accepted both the data and the conclusion.

Q Okay. And did you review the GRI EPRI risk assessment to determine if it conforms with the procedures used by the California Energy Commission?

A I didn't review the risk assessment itself, but I looked at their summary of their review.

Q Okay. And isn't it true that acrolein, for example, accounts for 86 percent of the acute health risk in the Supplement C risk assessment

for acute health effects?

A I believe that's correct.

Q And you made reference to the fact that you kind of, I guess, sort of sub rosa, updated your risk assessment as it's gone on, with the November 17th letter coming in from the Applicant consultant, and in that one the acrolein contributes 97 percent of the total health hazard index reading. Do you recall that?

A Yes.

Q Well, are you aware of the fact that acrolein was not included in the EPRI study?

A Yes.

Q And why did you choose to put in bold this statement that the most important conclusion from the study was that there would be no significant health impacts, when the health impacts that are 83 to 97 percent of concern here, that we're talking about, are acrolein?

A Because they're not significant here either.

Q And you're trying to say the EPRI study doesn't state that?

A Well, there's a lot of concern about low load operation, so the EPRI study was well aware

of the increase that they found in low level emissions, low level operation, and in spite of that they found no significant health effects. They didn't just barely find no significant health effects. They were well below their level of significance, and I felt that's important if this study is going to be relied on to make conclusions regarding operation of the Metcalf turbines that all aspects of the study be included, not just the selective data, but that their most important conclusion.

Q Okay. Now, in your rebuttal testimony you also suggested that exceeding the 14 day holding time, which was pointed out by CVRP in its -- the testimony submitted on its behalf, is not a big deal because the two samples that did exceed the holding time did so only by one day, and were only measured one day later than the sample that did not. Do you recall that?

A No, I didn't say it wasn't a big deal.

Q Well, what did you say?

A I said, since a third sample was collected only one day later than the first two and all three were analyzed on the same day, by CVRP's theory all of the alleged degradation of

the acrolein in the first two samples would have to have taken place in a single day.

Q And were you aware when you wrote that that the CVRP testimony, in fact, had used all of the data, including the two samples that exceeded the holding time?

A No, I was responding to CVRP's argument that there would have to have been degradation. There was a sentence in CVRP's wording that said something to the effect that those two exceeded the normal 14 day holding time, and thereby implying that they were not useful. And my only point here is that if that were to be the case, that the degradation would have had to have taken place over the period of one day. So that for 14 days, you basically have the same level of acrolein, and for the 15th day it dropped off by a factor of 240, or whatever, less.

Q Do you want me to repeat my question?

A Sure.

Q Were you aware when you wrote that that, in fact, the CVRP testimony had included all of the data including the samples held for longer than 14 days?

A I don't recall specifically.

Q Okay. Another thing that you say in your rebuttal testimony is that the HI significance level, or hazard index significance level of 1.0 is not a bright line. Is that -- that your testimony?

A Yes.

Q And you go on to point out that, you know, as an example, that one screening model was run, and came up with numbers that were in excess of the health hazard index, and the model was re-run, and came up with numbers that were below the health hazard index. Correct?

A Yes.

Q That really is just a demonstration that one model can produce a different result than another. It doesn't really have anything to do with whether the health hazard index is a bright line or not. Correct?

A That's one -- no, that -- what that argument goes to is the fact that if one set of assumptions in a model come out with a certain result, that does not automatically by itself mean anything, unless you look at it. If this was the most refined model you could possibly run and it came out with 1.4, for instance, it has a

different meaning than if a screening level model came out with 1.4. That's my point here.

Q Well, I'm not sure I understand what it is you're really saying about the health hazard index here. Are you saying that the Energy Commission is free to ignore exceedences of the health hazard index? Or the reference exposure level?

A There's no rule or regulation that requires anybody to look at 1.0 as a line in the sand. By its very definition and nature, health hazard, or health risk assessment is highly judgmental, and it should be looked at in light of all the different factors that go into it, and there -- there's a lot of judgment. It's not completely objective.

Q Well, what is it you're recommending in this case? I mean, we could talk about it in the abstract for awhile, but what are you recommending here? That the acrolein health hazard index number and the reference exposure level by which you get to the relevant number that's been developed by OEHA be used, or not?

A No. I think that the reference exposure level developed by OEHA is fine.

Q Okay. So you're not suggesting that that be changed?

A I'm suggesting that that be understood, how it was developed, what safety factors it goes into, the severity of the health effect that it goes to, many different things. It'd be nice if the health science, the whole process of health risk assessment was a hard science where you could come up with something that trips a trigger or a scale, or a balance, that if 1.01, you know, tips the scale, that's that. But that's not the way it works. That's not the way it was meant to work, and it's -- it's not the way it does work.

Q So have you -- you listened to the testimony yesterday in which if you change some of the data selections that have been made by the Applicant's consultants. Or you didn't throw out certain data, as they had done, and you came up with different numbers for acrolein emissions which exceeded the health hazard index by a substantial margin. Do you recall that testimony?

A Yes, I do.

Q And are you suggesting that those are not things to worry about because there's some uncertainty in the reference exposure level, or

something of that sort?

A They're all things that should be looked at.

MR. BEERS: Okay. I'd like to ask a question of Mr. Hill, if I could jump to another person in this context.

TESTIMONY OF

STEVE HILL

called as a witness on behalf of Commission Staff, having been previously duly sworn, was examined and testified as follows:

MR. HILL: I just had my third Coke, and I'm ready.

(Laughter.)

CROSS EXAMINATION

BY MR. BEERS:

Q Does the Bay Area -- so does the district take the same attitude about the health hazard index? I mean, does it mean anything when you find an emission that's going to produce an exposure above one?

A The health hazard index, as we apply it, we look at the -- the long-term one, we don't look at the short-term one. But the long-term one, we use one -- a level of 1.0 as a bright line.

Q Okay.

A We take -- we take -- we respond to. What the bright line is, if it's below that, it's an insignificant risk. If it's above that, you get into what -- what the doctor was describing, which is you start exercising judgment about whether or not it is a significant risk. But below that, it's insignificant, de minimus.

Q Uh-huh. Okay. And so what -- what kind of things do you do when it's above one?

A We look at the data to see how valid the data are. We might -- we would definitely refine the -- the modeling, the screening, to -- to determine whether -- how comfortable we were that that number was valid. We'd look at the -- the health data and consult with OEHA. But ultimately, we would require toxic best available control technology.

MR. BEERS: Okay. Thank you. You can go back to your Coke.

HEARING OFFICER FAY: Mr. Beers, you indicated yesterday you'd need about 15 minutes to conduct cross of Staff. It's been about 45 now. Can you give us an idea of how much longer --

MR. BEERS: I think I'm really done.

And that was also pre --

HEARING OFFICER FAY: Pre-Dr. Lim. I understand.

MR. BEERS: Okay. I'm done.

HEARING OFFICER FAY: Okay. Thank you.

And now, is the Santa Teresa group ready?

MS. CORD: I have a question for both Mr. Badr, and then Mr. Ringer. If you can just both listen, I'll ask you individually.

CROSS EXAMINATION

MS. CORD: Would you say that your -- your job at the Energy Commission is simply to gather approvals from other agencies, or is it in fact to go beyond the information you get from other agencies?

HEARING OFFICER FAY: Excuse me just a minute. I'm sorry. Commissioner Laurie reminded me that some of the parties who cannot leave, like the court reporter or the witnesses, have been sitting for quite some time. Are any of them in urgent need of a break right now? Five minutes? Yes.

MS. CORD: I would not object to a break.

HEARING OFFICER FAY: All right. Thank you. That's generous of you. Please, let's keep it short.

(Thereupon a recess was taken.)

HEARING OFFICER FAY: Go ahead, Ms. Cord.

MS. CORD: Well, I don't see the witness I was asking a question of.

HEARING OFFICER FAY: Which --

MS. CORD: I'm waiting for the witness that I asked a question of to join us.

HEARING OFFICER FAY: Okay.

MS. CORD: Well, is Commissioner Laurie going to join us?

HEARING OFFICER FAY: He's here, in spirit. Go ahead.

(Laughter.)

CROSS EXAMINATION (Resumed)

MS. CORD: Mr. Badr, I left you with a question. Do you recall, or shall I repeat it?

MR. BADR: My understanding that you asked the question to the CEC Staff, not necessarily Mr. Badr. That's correct?

MS. CORD: I'm sorry, what?

MR. BADR: Did you -- you did ask the

question to the CEC Staff, not necessarily myself, so -- correct?

Q MS. CORD: Are you the witness for the CEC at this time?

HEARING OFFICER FAY: Do you need the question repeated?

MR. BADR: Yes, please.

HEARING OFFICER FAY: Please repeat the question.

MS. CORD: All right. Be happy to.

I just wanted an individual answer from the two witnesses that are before us this evening, Mr. Badr and Mr. Ringer.

Do you understand your role at the Energy Commission to simply be a clearing house to gather various approvals, or do you see your role as potentially -- for instance, in the case of the air emission credits, perhaps going beyond what other regulatory agencies determine?

MR. BADR: We do conduct the independent analysis to the same project, and let me explain what that means.

That means the Applicant will propose the application, and the assumptions in the application on how they going to operate this

power plant. And they propose certain mitigations and they propose where the offsets are coming from, and so forth. We look at those, we try to validate the numbers that have been provided to us, like emission factors, are they the correct ones; the emission levels, are they the correct ones; what their assumptions are, are they reasonable on daily basis, hourly basis, annual basis.

Also, we do look at the applicable rules and regulations of this particular area, which air district is -- are they complying with the air district designated where the project is. Are these rules -- does the project comply with these rules. Is there any federal rules that we know about are being violated as the Applicant propose it.

And we -- we look at the new source review, we look at the PSD analysis, and then if we have additional questions or additional information is missing, we do what we call data requests. So we do request from the Applicant to provide the additional information are needed. And the Applicant will provide that. In this case, they did provide this information, and we

prepared the Preliminary Staff Assessment after that. And we will state what are the problems we see them in their application as proposed, and then will be subject for public review. And after that, we prepare the Final Staff Assessment, and that become my final testimony as is presented to you now.

In the interim of doing all that we conduct with the -- we work closely with the Air Quality Management District staff who are assigned to work on this project. We work closely with the EPA staff, Region 9. And we also work closely with CARB, California Air Resources Board staff who are interested in this project, and they are.

And the Intervenors work with us, as well. We accommodate questions, we do answer questions to the public, Intervenors, and whoever is asking questions about this project, we have to respond to it. And especially you, you asked a lot of questions in workshops, in fact, and we did answer them. So you knew exactly what our rules are.

MS. CORD: Well, is that a yes? I mean --

MR. RINGER: That was directed to both

of us; correct?

MS. CORD: It was.

MR. RINGER: Okay. In the Public Health arena, I do conduct an independent analysis. Although I did not do a risk assessment myself, I looked at the methodology that the Applicant used in their risk assessment, I examined the assumptions used, the models that they used, and the emissions factors, things like that.

MS. CORD: So you don't just simply gather up other agencies' approvals. You actually --

MR. RINGER: Right.

MS. CORD: -- go beyond those. Thank you very much.

This is a question for Dr. Lim. If your testimony, just in a crude summarization, was saying that having power plants is probably better for the air than having diesel generators -- is that kind of what you were saying?

DR. LIM: The operation of the backup generators is tied in with the interruptible or interruption, or outage of central power plants, and to the extent that minimizing the number of outages and blackouts would minimize emissions

from these standby engines.

MS. CORD: And would you say that building new power plants would be one way to minimize potentially future blackouts?

DR. LIM: Yes, that's one of them.

MS. CORD: Okay. That -- that being potentially the case, would you say that building new power plants in a site specific location would be required to achieve that benefit?

DR. LIM: It would depend on the situation, but I don't think it would be necessary that a specific site be chosen. It depends on the circumstances.

MS. CORD: Okay. Although there are several viable alternative sites that have been proposed for the Metcalf Energy Center, do you know of any alternatives, or are you aware of any alternatives to the Metcalf Energy Center that involve diesel generation?

DR. LIM: I am aware that there are other alternative sites, and I am not making any recommendations one way or the other.

MS. CORD: Did that answer the question if any of the alternative -- alternatives to this project involve diesel generation? Are there any

-- well, do you know?

DR. LIM: You're asking me about alternative sites and whether those alternative sites involve diesel generation?

MS. CORD: Correct.

DR. LIM: All these power plants require a -- typically, a small emergency fire pump engine. So regardless of the location, they would likely have a small operating engine. The comparison that I was referring to was not these small standby fire engines, but to larger standby engines in the area. And we were just using the CVRP project just as an example of the size of engines and the emissions impact, just to show the relative impact of a standby generator versus the health impact of a large, cleanly operated central power plant.

MS. CORD: Okay. And I understand that. But what I was trying to get at is there are alternatives for this project that have been examined as part of this process for the Metcalf Energy Center review. Do you know if any of those alternatives, exclusive of that of fire pumps, involve large-scale energy generation using diesel generators?

DR. LIM: I am not the person to ask the question about other alternative sites. That is a -- an evaluation done by the California Energy Commission Staff, I believe.

MS. CORD: Thank you. Would you say that if I'm, again, sort of characterizing your testimony to say that power plants would be better, in general, than diesel generators, would you say that's sort of a regional benefit?

DR. LIM: Yes.

MS. CORD: And did you testify, or anyone, to your knowledge, from the air district, on this specific topic of power plants being better than diesel generation, did you testify in the Delta case on that?

DR. LIM: No, I did not.

MS. CORD: Or do you know if anyone from your office, on that specific point, was involved in providing input on the Delta case?

DR. LIM: That may have entered during the discussion and the testimony, but I'm not aware of that because I did not attend the hearings.

MS. CORD: Do you know about Los Medanos, if anyone from the air district went

there specifically to state that power plants were better than diesel generators?

DR. LIM: I am -- I did not attend those hearings.

MS. CORD: Okay. Are you planning to attend -- I think there's 36 projects now on the CEC Web site. Are you planning to attend the ones that relate to the nine counties that -- that the air district is -- is required to examine? Are you planning to provide testimony in those cases that power plants are better than diesel generators?

DR. LIM: If they are in the Bay Area and if I'm asked to, yes, I will.

MS. CORD: But you haven't been asked to in any prior cases?

DR. LIM: This -- this phenomenon, or this potential increased emissions from standby generators is a relatively new issue, because of the actions of the current energy crisis that have been accelerating in the last few months. We were aware of the number of engines, but prior to that, quite frankly, these engines did not operate to the degree that we believe they are operating now. So it is a new issue for a number of us. I think

this electric shortage is a phenomenon that has really accelerated just over the last few months. And the particular projects you indicated, I believe those hearings were for many months, if not more than a year ago.

MS. CORD: So you said the level that you believe diesel generators are operating now, what level would that -- would you be referring to?

DR. LIM: That's -- that's our effort where we need to find that out, and we have taken steps to do some of that research, as well as to change our permit requirements to require that these standby generators get permits from us so that we get an idea of how many are there, when they operate, and limit their operation by any necessary controls.

MS. CORD: So really, if there needs to be some regulation or cleanup of diesel generators, that's really something that the air district should be doing.

DR. LIM: Yes, and we are taking steps to do that already. But I think part of my written testimony that, for example, that diesel engines, as the current inventory -- result in

ozone precursor and nitrogen oxide emissions over 200 times that of a clean central power plant. And I believe I also made a statement that even using best available control technology, they would still be over 20 times greater rate than that of a central power plant.

So even if we were successful and find all these engines, and adopt regulations through the public process, because as a public agency we must go through an entire public review process and get our board to adopt a new rule, we cannot arbitrarily, even with the best intentions, adopt a regulation overnight. Even if we adopt controlling regulations, but it would still result in engines that were, as I said, over 20 times that of a regular central power plant. So it would still be of concern to us.

MS. CORD: Could you tell us, based on this concern that you have with backup diesel generators, if -- and I guess you're saying that there seem to be more generators in use recently, although you don't really know how much, but your perception is there might be more in use, or being used more often?

DR. LIM: Right. And when we have other

organizations, such as the Cal-ISO, openly --

MS. CORD: Well, I think --

DR. LIM: -- I won't say to use the word marketing, but actually pursuing contracts with companies to start up their generators to supply electricity.

MS. CORD: How many backup generators do you think would be displaced, or not used, if the Metcalf Energy Center were to go into operation?

DR. LIM: That would be -- that's a regional, or actually a California problem that I believe is best assessed by people at the California Public Utilities Commission and the California Energy Commission, because electricity generation is used as -- if not statewide, at least regional. So it depends on the overall electricity demand, which power plants are available, where they're built, and so it would have -- require a large, bigger perspective than my local perspective.

MS. CORD: So you don't know how many backup generators are in use, or how often they're being used, and you don't know how many might be displaced, but you do think that this -- that this project would be good in some way?

DR. LIM: I think addition of cleaner, a clean central power plant for supplying the electricity through the shortage, would be beneficial. Yes. From that aspect.

MS. CORD: And you said this is a regional benefit?

DR. LIM: Yes.

MS. CORD: Have you taken the initiative, or anyone in your office, to go to Sacramento and talk to the Commission, rather than on one project, about all projects that might -- again, you stated earlier that the benefits wouldn't be site specific.

DR. LIM: No, let me characterize that. The benefits would probably be on the local level, as -- as well as the regional level, but the exact distribution -- in other words, I cannot point out to you and say that if this plant was built, that we would have X many less diesel engines. I cannot make that statement, because I don't think anyone knows that at this time.

MS. CORD: No, I --

DR. LIM: As far as your question about have I spoken to anyone in Sacramento, yes, I have. For example, last year they -- the

California Energy Commission conducted a public workshop on the environmental impacts of distributed generation. These are smaller sources of power generation at the local point of use. And as part of the mix of distributed generation, internal combustion engines or diesel engines are considered as part of the distributed generation.

And I spoke at that workshop, and invited remarks that the district is concerned with various sources of pollution from distributed generation. Some are more beneficial than the other. And we identified that diesel generators was one of concern to us. So we wanted to influence it from -- at the Sacramento level, as well.

MS. CORD: Thank you.

DR. LIM: But -- but --

MS. CORD: Thank you.

I had a question for Mr. Hill.

You said earlier, I wrote down that you said the region is already enjoying the benefits of reduction of air emissions --

MR. HILL: Yes, that's correct. Yes.

MS. CORD: -- because of credits in the bank. Would it be fair to say that when those

credits are taken out of the bank and actually are being used by a project, that would result in a net add of emissions to air?

MR. HILL: No, it wouldn't. And the reason why is because the program is bigger than just any one transaction, even a large transaction like this one. The program, the emission reduction credit program and the district's no net increase program is a balancing of emission increases and emission reductions throughout the Bay Area, over a long period of time.

What the emission reduction credit, the banked credits do is essentially allow industry to pay forward emission reductions for use in future -- future industrial expansions. So what happens when these emission reductions are no longer available in order for other industry to expand or new companies to come in, they will have to find or increase -- find reductions and add those to the bank.

So basically, what has happened is the historical reductions are sitting there in the bank for future use. And we -- we enjoy the credits, we enjoy the benefit of -- of reduced emissions, and the ability to expand, to continue

to grow the economy, with those -- with those credits that are available.

MS. CORD: So this being potentially one of those future uses, taking those credits out of the bank and putting them into active service, actually means emissions will be going into the air.

MR. HILL: If it were the only transaction that were happening, the answer would be yes. But we have emission reductions that are occurring all the time. We get banking applications on a regular basis. So there are other emission reductions that are also occurring that nobody's considering in this transaction.

MS. CORD: Right. Exactly. And -- and I think we're only looking at the Metcalf Energy Center.

MR. HILL: Well, if you're looking --

MS. CORD: If you're saying --

MR. HILL: -- at the environment as a whole.

MS. CORD: Uh-huh. Well, I'm not. I'm asking you about the credits relating to this project. If some other project is doing something else at some other place and time, I don't know

how we can consider that right now. I think we should look at this project.

And so I'm going to ask again. Using these credits and taking them out of the bank and putting them into use, will mean there will be emissions released to the air.

MR. HILL: There will be emissions released to the air from the project. Yes, that's correct.

MS. CORD: Thank you.

This is a question for Mr. Ringer.

Did you hear the testimony from the professors from the Naval Postgraduate School, that the FDOC modeling, as it stands, would seriously underestimate public health impacts?

MR. RINGER: I'm not sure if I recall it. They said it would seriously underestimate public health impacts, or seriously underestimate the modeling itself. In other words, impacts -- impacts from the project.

MS. CORD: Do you remember them speaking specifically about public health impacts?

MR. RINGER: I don't recall whether they actually did talk about public health impacts. They may have.

MS. CORD: Okay. I'm looking now at your professional qualifications. Do you -- I don't think you mentioned this earlier. Do you have a Bachelor's degree in public health?

MR. RINGER: I have a Bachelor's degree in biology.

MS. CORD: I see. Do you have a Master's degree in public health?

MR. RINGER: No. A Master's degree in resource management.

MS. CORD: Do you have a Ph.D. in public health?

MR. RINGER: No.

MS. CORD: Do you have any degree in public health?

MR. RINGER: No.

MS. CORD: Then I have a question for Mr. Badr.

You said earlier you had no authority over permitting for Coyote Valley Research Park. Did you analyze the EIR for CVRP in totality, the whole EIR?

MR. BADR: I looked at it. I looked at the air quality section of that.

MS. CORD: Okay. And would you -- would

you say that the air quality section that you seem to have focused on talked about mostly auto emissions, automobile, worker auto emissions?

MR. BADR: In a big part it -- it does talk about traffic emissions, yes.

MS. CORD: Okay. Did you -- did you know that San Jose has a negative jobs per household ratio?

MR. BADR: No, I don't know that.

MS. CORD: Okay. So that people who live here generally travel somewhere else to work?

MR. BADR: If you say so, that's fine with me.

MS. CORD: Okay. And did you consider that many high tech Cisco employees might already actually live in San Jose? Might? I realize we don't know.

MR. BADR: Okay. I don't know.

MS. CORD: Okay. And obviously, people working at Cisco in three or four years from now are already somewhere. They're already born, they're on the plant, they may well live here in San Jose.

PRESIDING MEMBER LAURIE: Ms. Cord, I'm -- I'm going to ask you to explain the relevance

of --

MS. CORD: I'd be happy to. You were comparing the CVRP auto emissions to potential MEC emissions. Did you consider that placing a large employment center such as Cisco close to existing homes could actually provide an opportunity for reduced commute time?

MR. BADR: No, I didn't make that comparison. All what I did is I looked at the total emissions as has been presented in the EIR prepared for or by San Jose City, that the amount of emissions being generated on annual basis from the Metcalf project. The majority of the source of the emissions coming from the -- the CVRP project is from traffic and the diesel engines, or the engines associated -- generators or emergency generators they been employed.

MS. CORD: Okay. Well, we're talking about auto emissions. Did we -- did you earlier state that you felt auto emissions were a large portion of the EIR emissions data that you looked at for CVRP?

MR. BADR: The majority of the emissions are from traffic emissions.

MS. CORD: Okay. And -- would you agree

that placing workplaces farther away from worker housing would -- could contribute to longer commute time?

MR. RATLIFF: Objection. This is --

MS. CORD: Contributing to --

MR. RATLIFF: -- outside of the scope of the witness' testimony.

HEARING OFFICER FAY: It actually is, Ms. Cord. I think if you want to ask an ultimate question about the gross analysis of CVRP, it's one thing. But I'm not aware that Mr. Magdy testified at all on the auto emissions and whether relocating them outside the area would -- would have more or less emission impacts.

MS. CORD: Okay.

HEARING OFFICER FAY: So I'll sustain that objection.

MS. CORD: I have a question about some of the emission reduction credits. It's my understanding that carbon monoxide emissions from the proposed Metcalf Energy Center would be 736 tons per year?

MR. BADR: What's the number you said, again, please?

MS. CORD: Seven hundred and thirty-six

tons per year.

MR. BADR: Yes.

MS. CORD: Okay. And what emission reduction credit offsets were provided for the 736 tons of carbon monoxide?

MR. BADR: None.

MS. CORD: None. Okay. How about for the 59 -- first of all, would you agree that the ammonium -- the ammonia emissions from the proposed power plant would be 59 tons per year?

MR. BADR: You mean the ammonia slip from the project?

MS. CORD: Yes.

MR. BADR: That's correct.

MS. CORD: And of that 59 tons per year of ammonia, how much -- what emission reduction credits were provided?

MR. BADR: The ammonia, by itself, is not a criteria pollutant. But the ammonia release takes a few hours after that, maybe three, four hours, under certain circumstances will combine with the NOx in the air and create a secondary PM10, and I believe that's what you are talking about.

MS. CORD: Correct.

MR. BADR: But three or four hours, these emissions could be 15, 20 miles away, or -- it depends on the wind speed, could be a whole lot more or less.

MS. CORD: So if I lived in Gilroy would I be able to ask you this question and get an answer?

MR. BADR: You will receive some emissions in Gilroy, as -- as secondary PM10. How much is that, I don't know.

MS. CORD: And -- and -- but the question was, how many emission reduction credits were provided for the 59 tons of ammonia?

MR. BADR: Well, for the ammonia itself, there is none. Because it's not a criteria pollutant.

MS. CORD: Yeah. Thank you.

Nothing further. Well, from me. But from the panel.

MR. NELSON: This is for Mr. Badr.

CROSS EXAMINATION

BY MR. NELSON:

Q On page 40 of the FSA, you analyze the meteorological data; correct? Starting on page 40.

A Yes.

Q And you went through four -- those four bullet points of the reasons why the pollutants that come from the main stack, why the meteorological data would be appropriate for modeling those pollutants; correct?

A That's correct.

Q And do you consider each one of those four bullet points essential part of the analysis as to determining whether the meteorological data is representative of the site?

A Yes.

Q Okay.

MR. RATLIFF: Point of order, Mr. Fay. I -- pardon me, I'm sorry to interrupt. I should have asked this earlier, but I guess I didn't understand, or maybe I still don't understand. But is each Intervenor allowed to have multiple questioners of witnesses, or are they supposed to have one designated person who's asking the questions?

PRESIDING MEMBER LAURIE: Well, we --

HEARING OFFICER FAY: The Commissioner seems prepared to answer that.

PRESIDING MEMBER LAURIE: As long as --

as long as it is being handled in a proper, efficient fashion, I haven't objected to this. The folks have had to spread out their time and their expertise.

MR. RATLIFF: I understand. Okay. I just wanted to make sure I understood what the rules were.

MR. NELSON: We are a community group that has divided our expertise.

MR. RATLIFF: I appreciate that.

MR. NELSON: We're not experts.

HEARING OFFICER FAY: That's understandable. But I do think that when we've asked for time estimates, that what we meant was from the whole group, and so just keep in mind, the estimate I got for the Santa Teresa group was half an hour, and we're -- we're getting nigh on that right now. So I hope you don't have a --

MR. NELSON: We will try to hurry along.

HEARING OFFICER FAY: -- longer --

BY MR. NELSON:

Q So, did you perform the similar analysis for the cooling tower emissions stack?

A What do you mean by that?

Q Well, I mean the cooling towers are

another source of emissions in this project that have been modeled to the IST -- ISC3 model; correct?

A Yes.

Q And so would you agree that it would be important to determine whether the meteorological data from the IBM site was representative for that modeling?

A That's correct. And I believe, Mr. Fay, that Mr. Glen Long, since he is on the panel, he has more experience in this area, can answer --

Q Well, I would like --

A -- questions about the met data and the modeling more efficiently.

Q I would to continue with you, because you did do an analysis of the modeling for the -- you did do an analysis for the main stacks. And so I would like to hear, for the record, why you did not do a similar analysis for the cooling towers.

A The analysis was conducted for modeling the PM10 from cooling towers and the stacks, as well.

Q That wasn't the question. Why did you not perform a similar analysis of whether the

meteorological data for IBM was appropriate for modeling the cooling tower emissions?

A Let me understand your question, or try to understand your question. You want me to isolate cooling towers and model them by themselves --

Q No, that --

A -- using the met data?

Q That was not the question.

A Okay.

Q You performed an analysis of whether or not the IBM met data was appropriate for modeling the emissions from the main stacks. The question is, why did you not perform a similar analysis to determine if the IBM met data was appropriate for modeling the emissions from the cooling towers?

A It is. In my opinion.

Q Well, I -- I asked the question, why did you not perform an analysis in your testimony?

A Because I did the analysis for the whole project, and cooling tower is part of that project.

Q Okay. But would you agree that the cooling tower emissions have a different ratio of terrain height to stack plume height?

HEARING OFFICER FAY: Than what?

BY MR. NELSON:

Q Than what he has analyzed for the main stacks?

A They are much shorter, if that's what you mean.

Q Okay. And so, just from a general perception point of view, would you agree that a shorter plume might be impacted by terrain, rather than a higher plume?

A Than what?

Q Would you agree that a plume that does not rise as high as the main stacks might be impacted by terrain, or that the meteorological data might have -- might not be appropriate?

A I believe you are making the assumptions that cooling tower plumes do not rise.

Q Well, do they rise higher or lower?

A Than what?

Q Than the main stack plume.

A At this point I would like to turn to Glen Long to answer that question.

Q Well, I mean, in your -- you're sponsoring testimony that --

A I sponsored testimony to do the whole

project, as a whole.

Q Okay.

A And you are trying to take that project in pieces, and you are trying to ask if I did modeling or analysis on different size, different terrains, and different heights of these stacks. And my -- my answer to that, that we did look at the whole project as a whole, and including the diesel generator, as well, if you want.

Q So -- so --

A Which is even shorter than the cooling towers.

Q So what I'm hearing, though, you're saying that you look at the big picture of the air modeling, and you do not look into the details of the air modeling?

A That's not correct. We look at the details, and we looked at -- in the modeling, you have to tell the model what the stack height on each source is, so you did take that in consideration. So that final impact point, or maximum concentration, is taking in consideration all the stack heights. So --

Q Okay. But --

A -- we did look at that stack heights,

regardless.

Q But would you agree that if the meteorological data was not representative of the onsite data, that it could have -- it could determine or change the maximum impact point for the cooling tower emissions?

A Well, that's a hypothetical.

Q Yeah, it's hypothetical.

A I'm not so sure I want to answer hypotheticals.

HEARING OFFICER FAY: Do you agree with the statement, or can you answer yes or no?

MR. BADR: The answer -- I believe I would like to understand more what do you mean by your question, or --

MR. NELSON: Okay. I mean, I will give you an overview of what I'm trying to get at.

HEARING OFFICER FAY: Yeah. That would help.

MR. NELSON: We -- as a layperson --

HEARING OFFICER FAY: I have a feeling this has been belabored a bit.

MR. NELSON: Well, but, I mean, I'm not getting, let's just say cooperation to answer these quickly. And so I guess from a person who

will be living in the area, I am not convinced from your analysis in the FSA that you have done a proper analysis of knowing whether the meteorological data, which is a very important input to the ISC SD3 model, I am not convinced that you've analyzed whether that meteorological data is appropriate for modeling the cooling towers.

And where this is all leading is that I have analyzed the output files for the PM10 24-hour ISC SD3 output, and as far as I can tell, the cooling towers have the highest localized impact, in terms of local impact for PM10, on a 24-hour averaging basis.

So even though the emission rate is not as high as the main stacks, the plume does not travel as high, and so therefore its impact on the local surrounding area is higher than anything else that is emitted, in terms of PM10, from this project. And I have the document, I have the last summary page from the ISC SD3 model run, and if I look at the cooling tower modeled by itself, the highest value is 8.05195 micrograms per cubic meter, and everything else is almost half that --

HEARING OFFICER FAY: And what is the

question?

MR. NELSON: -- proposed. I was explaining where this questioning is going.

HEARING OFFICER FAY: Okay. And is there a question?

MR. NELSON: I can get to a question. You told me to tell you where this is going, and --

HEARING OFFICER FAY: Okay. Now I understand. Please ask the question.

BY MR. NELSON:

Q So, Mr. Magdy, do you understand my concerns that I've just enumerated?

A I understand your concern.

Q And so do you think it is important, then, to know if the meteorological data is appropriate for modeling the cooling towers?

A And also important for the whole project.

Q Okay. And so can we let the record show that you did not analyze the meteorological data specifically for the cooling tower modeling?

HEARING OFFICER FAY: I -- I think you've established that, that he -- he looked at the project as a whole.

MR. BADR: We did look at the project as a whole, and one of the main reasons for that is that 90 percent, or more than 90 percent of the emissions associated with this project is coming out from that big stacks, and not necessarily from the cooling tower or even the diesel engine, in this case.

Q Okay. Mr. Magdy, can I present --

A May I finish my answer? Perhaps he is talking about the maximum point of impact, or if he modeled the cooling tower by themselves, and I have problems with that, because if you do have a power plant, with any size you need to have a turbine or a combustion turbine to be able to cool it. So you -- there won't be any developer coming in before the Bay Area Air Quality Management District or the Energy Commission proposing to put cooling towers by themselves out in nowhere, and don't have a turbine next to it.

PRESIDING MEMBER LAURIE: Okay. Let me interrupt. The question has been asked. The question has been answered. You did not do the analysis of the cooling towers dependently.

MR. BADR: That's correct.

PRESIDING MEMBER LAURIE: That's your

answer. And please move on.

MR. NELSON: Okay. Thank you.

BY MR. NELSON:

Q I just gave you a paper. It's from the ISC SD3 modeling run for PM10 24-hour averaging. And could you confirm that there's a cooling tower group, CT. Did you analyze these files, I would assume?

A Yes.

Q Okay. And so --

MR. RATLIFF: Could we --

BY MR. NELSON:

Q -- you're familiar with that? Excuse me?

MR. HARRIS: Could we get a copy of that, as well?

BY MR. NELSON:

Q So you're familiar with the shorthand terminology for cooling tower, no cooling tower, gen set, HR, SRG2, HR -- SRG1. And would you confirm that for CT, that that has the highest localized impact, compared to all the other? Or at least nearly the highest? I think there's one other that is highest.

MR. RATLIFF: Could I ask what the

document is that you are --

MR. NELSON: It's the Calpine's ISC SD3 model run for PM10 24-hour --

MR. RATLIFF: It's Calpine's run, and it's already in evidence. Is that correct?

MR. NELSON: Yes.

MR. RATLIFF: Okay.

HEARING OFFICER FAY: Is this part of the evidentiary record?

MR. NELSON: Yes.

MR. BADR: Yes.

BY MR. NELSON:

Q Okay. So you would agree that the cooling towers have a high localized impact, even though their emission rates are lower than the main stack.

A Yes.

Q Okay. So -- because yesterday, I asked Mr. Rubenstein whether -- these similar questions, and he said the emissions from the cooling tower are not important. And would you agree with that statement?

MR. HARRIS: I'm going to object as a mischaracterization of Mr. Rubenstein's testimony.

MR. NELSON: All right. I'll move on.

HEARING OFFICER FAY: We'll sustain that. Okay. No problem.

MR. NELSON: Let's see. This is a question, I guess, for Bay Area Air Quality Management District. How far away do you normally see down wash, in terms of local impact from a project site?

MR. LONG: The down wash algorithm is based upon what's called good engineering practice stack height. So that if a stack is above a formula in height, away from a structure, then down wash isn't considered at all. So that in this particular case, the stack height here is below what's called good engineering practice stack height.

The -- it's my recollection that the sphere of influence of a building is five -- I think it's five building heights.

MR. NELSON: Okay. So I have heard statements, and maybe I didn't hear correctly, but I've been hearing that all the localized impacts surrounding the site are because of building down wash. Is that a correct --

MR. LONG: That, and the -- and the terrain. In combination with the terrain.

MR. NELSON: Okay. So for every pollutant, if I see a high localized impact, that would all be because of -- like, for example, Figure E1 in the FDOC, which is the map of the surrounding area.

MR. LONG: You're referring to this map?

MR. NELSON: Yes. So is it your testimony that every one of those points that shows a impact, maximum impact for each pollutant, is from down wash?

MR. LONG: I think what -- what I've testified, and my testimony shows, is that the down wash in -- in the area near the -- the impact -- maximum impacts near the project are due to down wash, while the CO eight hour and CO one hour are a combination of down wash and plume impaction on terrain.

MR. NELSON: Okay. So not solely from down wash.

MR. LONG: I would say four out of the six --

MR. NELSON: What about PM10 24 hour and annual. Is that from building down wash?

MR. LONG: Yes.

MR. NELSON: And what about CO 8 hour?

MR. LONG: That's from a combination.

MR. NELSON: What about CO one hour?

MR. LONG: Combination.

MR. NELSON: Combination. Did you perform any analysis similar to what Mr. Magdy did for the meteorological data, and whether it's appropriate to use for both the cooling tower emissions and the emissions from the main stack?

MR. LONG: We did, when we reviewed the project to begin with, to determine the appropriateness of met data, we looked at the project as a whole, and a separate analysis was not done for the cooling tower.

MR. NELSON: So at this point in time, you do not have a position or an opinion as to whether the met data from the IBM is appropriate for modeling the cooling tower?

MR. LONG: No, I -- I still believe it is appropriate, and I also believe that that was showed -- shown by my testimony earlier, saying that I used the Metcalf Energy -- or the Metcalf data from PG&E, and that I also used the worst case 54 screen 3 stability in one case as to show that the met data was appropriate.

MR. NELSON: So -- so your -- your

conclusion -- let me see if I understand -- is because you ran the screen 3 model and analyzed the --

MR. LONG: No, that's not -- I mean, I did that in addition, but that did not -- that just continued to support my previous statement.

MR. NELSON: Okay. I'm just trying to come to how you arrived at the conclusion that the met data was appropriate for the cooling tower emission analysis. Could you just quickly enumerate your -- what you analyzed --

MR. LONG: Sure. Sure. It wasn't just me. It was -- there's a staff of five meteorologists at the Bay Area Air Quality Management District. We have a program that the staff meteorologists look at facilities, look at the siting, where they're going to be located, see what met data is appropriate, and then in a group decide whether that data is appropriate.

MR. NELSON: And then do you have a formal procedure within the organization for doing this process?

MR. LONG: Formal, there's not a check list, no.

MR. NELSON: Okay. Was this -- was this

analysis entered into the record for this proceeding at all?

MR. LONG: It was entered into the record through the modeling protocol and us signing off on the protocol that the data was representative.

MR. NELSON: Okay. So by nature of you approving the FDOC, you're saying that that is an approval of everything.

MR. LONG: That's correct.

MR. NELSON: Okay. And so is it fair, then, to ask how they came to these conclusions, or get an understanding of how they came to these conclusions?

MR. LONG: Sure, it's fair to ask.

MR. NELSON: I mean, are you familiar with how they came to their conclusion?

MR. LONG: I -- I know some of the information that they used in making their decision, but I don't know all of their decision making.

MR. NELSON: Okay. But you understand my concern that the accuracy of the cooling tower, because it has such a high localized impact, that if you did not have -- I mean, because the way I

see it, there's a hill in front of the cooling towers. Correct?

MR. LONG: There -- there is a hill to the northwest of the --

MR. NELSON: Okay. But, I mean, from a layperson's point of view, it just seems to me that having a hill in front of the cooling towers could possibly change the air patterns in that area, comparing it to the IBM met data.

MR. LONG: Right, and -- and I think what -- what, in my testimony, I have shown to address those concerns by using these 54 cases that -- that are the worst possible cases, even if they -- the chances are they would never -- a lot of those cases would never occur at this facility.

MR. NELSON: And those 54 cases are the screen 3 cases.

MR. LONG: That's correct.

MR. NELSON: Okay. And the inputs to screen 3 are what, just wind direction and speed?

MR. LONG: No. You have to input both terrain, the wind -- all the emission characteristics, the stability, the wind direction, and wind speed, ambient temperature -- I may be leaving something out.

MR. NELSON: Okay. Let me quickly just look through here.

This is for Bay Area Air Quality Management District. Is there any fallout type particulate from this project?

MR. HILL: No, we don't expect so.

MR. NELSON: Okay. But some power plants in the Bay Area do have fallout type particulates?

MR. HILL: Not natural gas-fired.

MR. NELSON: Okay, because I thought I read in the EIR for the PG&E divestment that there was still a car washing program for, I believe, Moss Landing and Potrero.

MR. HILL: Moss Landing isn't in the Bay Area.

MR. NELSON: Okay. But that's a natural gas power plant?

MR. HILL: I think it fires natural gas, but it is also capable of firing fuel oil.

MR. NELSON: Okay. So as far as you know, we can expect no fallout type particulate from the Metcalf Energy Center?

MR. HILL: No. As was earlier -- the very fine combustion particulates are so fine that

they act mostly pretty much as a gas.

MR. NELSON: But if you park the car, let's just say, at the property line, if you came back in a week would there be any particles on that car?

MR. HILL: No more than there would be in the absence of the facility.

MR. NELSON: Okay.

HEARING OFFICER FAY: I'll just note that CVRP told us half an hour, it's been 45 minutes now, so I'd like you to wrap up within five minutes --

MR. NELSON: CVRP --

HEARING OFFICER FAY: -- please.

MR. NELSON: It's not --

HEARING OFFICER FAY: I mean, I'm sorry, Santa Teresa.

MR. MITCHELL: Yeah, I want to make a comment to that. Last night, we were not asked about a combined panel of the air district and CEC Staff. I believe we were asked about how long it would be for the CEC Staff and how long it would be for the air district. And I believe those two added up to an hour and a half.

HEARING OFFICER FAY: That's not what my

notes show, and Staff --

MR. MITCHELL: There's no way we would've agreed to 30 minutes for the combined panel.

HEARING OFFICER FAY: I know. I'm not going to argue that.

MR. MITCHELL: And yesterday we didn't know it was going to be a combined panel.

HEARING OFFICER FAY: And I have made, allowing for Dr. Lim's controversial testimony, I've allowed for some extra time. So I hope you can wrap it up in about five minutes.

MR. MITCHELL: I'm sure we can't, and as I mentioned, that is a completely --

HEARING OFFICER FAY: But that's not what you said last night.

MR. MITCHELL: No. What I'm telling you is I did not tell you a half-hour for a combined panel of the air district and the CEC Staff.

PRESIDING MEMBER LAURIE: Okay. We -- we're not going to have an argument over this. How much time are you anticipating for your -- for your questions?

MR. MITCHELL: I would guess a half an hour.

PRESIDING MEMBER LAURIE: That -- that's not acceptable. We will give you 15 minutes. So you can take a minute and prioritize.

MR. MITCHELL: I find that unacceptable.

PRESIDING MEMBER LAURIE: Well, that's -- that's --

MR. MITCHELL: Why was I asked last night for time estimates if they're going to be ignored tonight?

PRESIDING MEMBER LAURIE: Sir, that's really the Committee. You can ask questions or you can not ask questions.

MR. MITCHELL: Let me ask a clarifying question, then. When you asked for my time estimates, did you ask me for a time estimate of the combined panel of the air district and the CEC Staff?

HEARING OFFICER FAY: Yes, I did. I said the CEC Staff panel. How much time would you need.

MR. MITCHELL: And you asked a separate question about the air district.

HEARING OFFICER FAY: No, I did not. I did not ask a separate question for the air district testimony. I asked one question.

PRESIDING MEMBER LAURIE: The point being is that your organization is being given an hour for cross examination. And that should be sufficient. So I -- go ahead and take a minute and prioritize your questioning.

MS. CORD: Okay. Can I just ask one question. When Mr. Valkosky was the Hearing Officer --

PRESIDING MEMBER LAURIE: I'm sorry?

MS. CORD: Mr. Valkosky.

PRESIDING MEMBER LAURIE: Yes.

MS. CORD: Back at Baldwin School on November 30th, I specifically asked him what we were being asked to give time estimates for, and he said they were simply estimates, we would not be held to them, they were intended as ballpark figures for scheduling purposes only.

PRESIDING MEMBER LAURIE: That's true.

MS. CORD: We were never told that we would be cut off in our --

PRESIDING MEMBER LAURIE: First -- first, the Hearing Officer doesn't run these meetings. I do. And --

MS. CORD: I'm --

PRESIDING MEMBER LAURIE: -- and I'm

advising that the estimate, yes, it is a guideline. A half-hour was given, you're being given an hour. Given the nature of the proceedings today, that should be sufficient. So take your time, prioritize, and you can half 15 minutes. And that's -- that's the ruling of the Committee. Everybody is being restricted to answering -- to asking their questions, and that includes you.

HEARING OFFICER FAY: And I just want to clarify, when -- when Mr. Valkosky was asking those estimates, that was for setting up the hearings. And that's how he arrived at three days. What I asked last night was hopefully a little more exact on everybody's part, their estimate, so that we could see just how we were going to use the three days. And I'm trying to keep people to the commitment that they made. And most --

MS. CORD: Well --

HEARING OFFICER FAY: -- most people have held to the commitment they made.

MR. NELSON: Just one more question for Mr. Long, Dr. Long.

What was the -- when you did your 53

cases, whatever, using screen 3, what was the maximum PM10 24-hour impact, localized impact?

MR. LONG: The 54 cases using 36 different wind directions, the -- and I do not have with me the location of that maximum, so I can't tell you whether it was on the hill or not.

MR. NELSON: Okay.

MR. LONG: The maximum 24-hour impact was 24 micrograms per cubic meter.

MR. NELSON: Twenty-four -- so that is almost three times what we're seeing in the modeling done by Calpine.

MR. LONG: That's the conservative nature of using the screen.

MR. NELSON: Okay. Just for the record, that's three times what we've seen in the modeling submitted by Calpine.

MR. LONG: That's correct.

MR. NELSON: Okay. And that is also 50 percent of the California State PM10 24-hour limit?

MR. LONG: That's correct.

MR. NELSON: And you do not know which location that occurred at?

MR. LONG: No, I do -- I did not make

note of the location of that maximum.

MR. NELSON: Do you know the altitude?

MR. LONG: No, I don't. Because of all the modeling runs I didn't keep track of that specific output.

MR. NELSON: Well, would that concern you that if that were the actual impact?

MR. LONG: At the screening level, no.

MR. NELSON: Okay. But --

MR. LONG: If that were a refined level out put, I would be concerned. But at the screening level, no.

MR. NELSON: All right. Thank you.

CROSS EXAMINATION

MR. MITCHELL: Okay. I want to ask a question about PM10 emissions. Were secondary PM10 emissions accounted for in the emission totals?

MR. BADR: If you are referring to the 91.3 tons, the answer is no.

MR. MITCHELL: And why weren't they?

MR. BADR: Because those are direct emissions coming from the project. This is what the project will emit on annual basis.

MR. MITCHELL: And so in a sense, you

ignored secondary PM10 as far as the emission totals were concerned.

MR. BADR: Yes. And the reason is they are extremely difficult to quantify. They can happen in few hours after they've been emitted. Some of them will happen right off the stack, and some of them, or the majority of them, will happen a few hours after they've been emitted. And it depends on the wind directions that will be at that location of them going to be, and the amount is extremely difficult to count, as I said.

MR. MITCHELL: So because it's difficult to calculate, they were just left out. Is that fair to say? Is that your testimony?

MR. BADR: Well, to quantify and also to know the nature of them, yes.

MR. MITCHELL: I'm not going to go over the offsets, those were pretty much asked by Molli.

MR. BADR: I would like --

MR. MITCHELL: The --

MR. BADR: -- I would like to add something on the secondary.

HEARING OFFICER FAY: Magdy --

MR. MITCHELL: I have a question, if I

could go on, since my time is extremely limited.

Dr. Long, I'd like to ask a little bit about the -- and Mr. Ringer, I don't know who wants to answer this. But I'd like to know what -- how the modeling was done for the public health risk assessment, in terms of what exit velocities and other conditions were used in the modeling for start-up conditions. Whichever one of you wants to answer.

MR. LONG: I didn't do a public health risk assessment modeling, so I think --

MR. MITCHELL: Okay, so, Mr. Ringer.

MR. RINGER: The modeling that formed the basis for the health risk assessment was -- was from the air quality, so I did not specifically look at the stack gas parameters.

MR. MITCHELL: Well, I'm referring to the toxic air contaminants, and --

MR. RINGER: Okay.

MR. MITCHELL: -- were startup conditions included in that risk assessment?

MR. RINGER: No.

MR. MITCHELL: And why weren't they?

MR. RINGER: There's no data on startup emissions for toxic air contaminants.

MR. MITCHELL: No data for toxic air contaminants under startup conditions. Okay. I guess we'll just let that stand.

I'd also like about a three minute warning, please.

HEARING OFFICER FAY: Okay. Three minute, you say?

MR. MITCHELL: Yes. Dr. Long, you testified that the down wash produced the worst case emissions? Worst case impacts from the project?

MR. LONG: I think I testified that the down wash was the worst case for the 24-hour in the annual PM10, the annual NO2, the one-hour NO2, and then the combination with plume impact for the CO one-hour and eight-hour.

MR. MITCHELL: Okay. And I thought I heard you say that not only was that the maximum accounted for by this model, but that's the maximum you could conceive of being impacted by the project. Is that a fair assessment of what you were trying to say, or did I -- or maybe you want to clarify that.

MR. LONG: If I could rephrase, I think I -- I testified that these estimates are

conservative.

MR. MITCHELL: Right. But -- but I thought I heard you say that you couldn't conceive of a case that would be worse than that worst case scenario that was modeled.

MR. LONG: I think what I said was that the combination of using the IBM data, the Metcalf data, and the screening data, that I -- the impacts would not be above what I -- what was presented in the -- the analysis.

MR. MITCHELL: Okay. Well, would you agree that various accumulation factors were not included with the model used in the modeling?

MR. LONG: Yes.

MR. MITCHELL: And you heard testimony about the different types, recirculation, stationary, terrain, upper lid, reflection type --

MR. LONG: Yes.

MR. MITCHELL: -- accumulation factors. So did -- so the accumulation wasn't accounted for at all. My question is, how do you know that if accumulation was accounted for, concentrations wouldn't in fact be higher than the modeled result?

MR. LONG: When -- you can look at the

modeling results and look at the -- what a more significant impact the down wash has than any of the other impacts. So that, for example, the down wash for NO2 causes an impact of 188 micrograms per cubic meter. The fumigation impact is only 13, roughly a factor of 10 or more below that. So I feel that the down wash, the fact that the -- the down wash occurs very localized, close to the stack, within a couple of hundred meters, that those impacts from this facility would be conservative.

MR. MITCHELL: And those impacts couldn't be amplified if accumulation were factored into the model?

MR. LONG: I don't believe that as that plume moved up and down the valley, that a mass would be created and that the concentrations would get worse as a result of the dispersion from this facility.

MR. MITCHELL: We weren't just talking about accumulation from up and down. We're talking about reflection, we're talking about the impact of the hillside.

MR. LONG: Right. And I -- and as my testimony showed, the maximum impact did not

change as the mixing height changed. The impacts changed, but the maximum didn't change. So that the -- when the mixing height was changed, reflection was taken into account, the plume, if the plume was below the mixing height, then the receptor would see the effect of that mixing height.

MR. MITCHELL: Okay. I think we heard testimony earlier that would question that. But let me go on. In the San Jose Mercury on February 16th, there was an article that quoted you and saying even if the predictions are off by a factor of ten, the pollution levels will still be very low. Did you make that quote, Dr. Long?

MR. LONG: That quote was -- was taken out of context. I was talking about a particular pollutant.

MR. MITCHELL: Okay. So it wasn't -- okay. So which pollutant were you talking about?

MR. LONG: I was talking about the annual NO2.

MR. MITCHELL: Okay. And why did you pick the annual NO2 versus any of the other --

MR. LONG: It -- it was among many -- it was part of a longer discussion.

MR. MITCHELL: Okay. Because I just wanted to --

MR. LONG: The reporter chose to -- to pick that.

MR. MITCHELL: Oh, the reporter picked that.

MR. LONG: Yes. I didn't the article.

MR. MITCHELL: Okay. Because, for example, NO2 one-hour would've been ten times the 188 micrograms per minute cubed would be 1880, which is 400 percent of the standard.

MR. LONG: I agree.

MR. MITCHELL: Okay. Thank you.

MR. NELSON: Did I hear Steve Hill mention that the CO emission limit does not apply to startup?

MR. HILL: The PPM limit does not apply to startup. There is a CO limit on startup.

MR. NELSON: There's a CO limit on startup?

MR. HILL: Yeah. It's a mass limit.

MR. NELSON: So it's a mass per --

MR. HILL: Hour.

MR. NELSON: -- per hour?

MR. HILL: Yes.

MR. NELSON: That they have to stay below?

MR. HILL: Yes.

MR. NELSON: And how is CO accounted for, Mr. Badr, in the compliance conditions for measurement? Mr. Badr.

MR. BADR: I'm sorry.

MR. NELSON: The CO conditions, how are those measured or verified as far as monitoring those?

MR. BADR: The CMs will detect the -- the CO levels on --

MR. NELSON: So it's --

MR. BADR: -- the operations.

MR. NELSON: So that would be measured through startup and integrated in some fashion, so you end up with a total mass? Including startup?

MR. BADR: Daily emissions will capture the startups. Air Quality 24, you have a level per day amount of emissions associated with CO. That's 7,891.1 pounds per hour -- per day. That's including all the assumptions associated with the startup for the two turbines.

MR. NELSON: But I'm just asking how would that be verified? And I think I heard you

say it would be verified by continuous monitoring?

MR. BADR: During the operations, yes.

MR. NELSON: Okay. And that continuous monitoring would measure every -- how many minutes, how many -- once an hour, twice an hour?

MR. BADR: No, it's reported more frequent than that, but the average will come -- if you're talking about PPM or on pounds per hour, or -- yes, there will be rolling average of pounds per hour.

MR. NELSON: Okay. I'm just asking how often a sample would be taken in the continuous monitor. Is it -- is it truly a continuous drop, and it's analyzed continuously, or is it analyzed every ten minutes, or every half-hour?

MR. BADR: No, it's analyzed -- it's connected to the computer system, so it would report the concentration of the CO on every -- perhaps -- I'm not so sure if it's every minute, and then it will be averaged over the 60 minutes and give you a rolling average. Rolling average means at minute one --

MR. NELSON: Right. Not --

MR. BADR: -- to minute 60, and then from minute two to minute 62, or 61, and so forth.

So at any given hour you choose, it should meet whatever limits. Also, there is other condition, AQ-21, I believe that has to do with the startup, limiting the CO emissions from a startup, carbon monoxide at 2514 pounds.

MR. NELSON: Right.

MR. BADR: Per startup. So --

MR. NELSON: Okay.

MR. BADR: -- any way you look at it, it's --

MR. NELSON: Got it.

MR. BADR: -- the CO emission is being captured on per startup or on daily basis.

MR. NELSON: Thank you. Okay, I wanted that clarified.

The -- the -- I wanted to ask a question, I guess this is of Steve Hill. Does the air district consider impacts any differently if background concentrations are already above limiting standards in the area?

MR. HILL: We evaluate under PSD, we're looking for an increment to see if that increment is significant.

MR. NELSON: And --

HEARING OFFICER FAY: Mr. Mitchell, it's

your three-minute warning.

MR. MITCHELL: Thank you.

MR. NELSON: Okay. And did you consider this project significant?

MR. HILL: We determined that the incremental impact of this facility was not significant.

MR. NELSON: And what's the threshold for that? Was that -- PM10, you're clearly over the limit, so --

MR. HILL: Right.

MR. NELSON: -- is that the hundred ton threshold?

MR. HILL: Could you rephrase the question? I'm not sure whether you're talking about impacts or --

MR. NELSON: For PM10, what would -- at what point would you consider the impact significant?

MR. LONG: The project did have a significant -- significant PM10 impact. And as a result, a PSD increment consumption analysis was performed. That -- the increment total for the project in background, since 1975, I think it was, came to 9.3 micrograms per cubic meter, and the

increment that is allowed is 30 micrograms per cubic meter.

MR. NELSON: Okay. So we could have up to 30 and the project would go forward. So it could have almost three times the amount of emissions that --

MR. LONG: That's correct.

MR. NELSON: -- according to regulations. Even in an already impacted area.

MR. LONG: That's correct.

MR. NELSON: I'm going to ask one other series of questions. We talked earlier about the fact that the air district had placed a letter into the San Jose Mercury which appears -- is that correct, that the air district got that letter placed?

MR. HILL: I have no idea.

MR. NELSON: Okay. My reading of it is that it's -- it basically says that the air district is very much encouraging central power plants. We also heard Dr. Lim's testimony that again seems to be advocating central power plants. I want to ask a question of Mr. Hill. Has the air district been objective in reviewing this application?

MR. HILL: Yes, it has.

MR. NELSON: Because that's -- that's not the perception.

MR. HILL: You asked about the fact, not the perception.

MR. NELSON: I'm asking because of the perception. The -- a similar related question is for the PDOC and the FDOC, how many public hearings were held?

MR. HILL: I don't know how many public hearings the CEC has held.

MR. NELSON: No, the air district. How many hearings has --

MR. HILL: The air district hasn't held any. This is the public process for reviewing these documents.

MR. NELSON: So is there an opportunity to change the FDOC at this point?

MR. HILL: Not at this point. It's the final.

MR. NELSON: So, okay. But my point -- my question was, at what point in your process was there an opportunity for public hearing and people to come present --

MR. HILL: There was substantial

opportunity for public comment on the PDOC. There was a public comment period when public comment could have been received.

MR. NELSON: But no public hearing was held.

MR. HILL: No public hearing. That's correct.

MR. NELSON: Okay.

HEARING OFFICER FAY: That's -- that's it. The time is up. And we want to move to the next questioner.

I want to ask if CARE is here? CARE left. Okay.

Mr. Williams, do you have any cross examination?

MR. WILLIAMS: Yes, sir, I have about 15 minutes. I had requested as much as an hour in our previous meeting, but I'll try to make it short.

HEARING OFFICER FAY: Thank you.

CROSS EXAMINATION

MR. WILLIAMS: My first question is to the panel. How many of you are familiar, or have seen estimates of the effluent discharge for a power plant operating over, say, a one month

period or a one year period, and whether the effluent increases or decreases over a steady state period of operation?

Which of you can comment on that point? Are any of you familiar with how much effluent is produced?

MR. HILL: You're talking about degradation over time?

MR. WILLIAMS: No, I'm talking about how much the startup and shutdown transients either increase or decrease pollution over a period of, say, one week, or in the period of one year, where you do the 400 hot startups and 100 cold startups per year.

MR. HILL: I think the analysis in the FDOC covers that.

MR. WILLIAMS: Do you believe that it's less than the steady state operation of the power plant?

MR. HILL: I'm not sure I understand the question.

MR. WILLIAMS: Well, how much effluent is produced, let's take one example, PM10, per year, if the plant operates on the startup and shutdown cycle?

MR. HILL: It's -- it's dependent upon how long, how much time the facility is in which mode.

MR. WILLIAMS: I understand that. Would it be 20 percent more, 30 percent more?

MR. HILL: It's dependent on how much time it is in whichever mode it's in. The -- the question, as asked, doesn't have an answer.

MR. WILLIAMS: So you'd be willing to accept a -- can any of you make an engineering estimate?

MR. HILL: The question as asked does not have an answer. It's indeterminate. You haven't given enough factors to be able to give you an answer.

MR. WILLIAMS: All right. Because of the shortness of time, I'm not going to belabor that point. I could give you enough details, and I'd be willing to provide at a separate time my own estimate.

My own estimate is that the effluents would be increased by a factor of about 100 percent.

Okay. I need to go back to the testimony of the Morgan Hill meteorologist. Could

I see a show of hands, how many of you are members of the Meteorological Society? How many of the experts at the table? Are any of you members of the Meteorological Society?

MR. HILL: Currently?

MR. WILLIAMS: Yes.

Let the record show that none are members. I'm surprised.

I'd like to pursue -- your answer seems at odds with the facts in evidence, so I want to explore why you justify, why you believe the model is conservative when the professors in the lecture indicate three major areas of non-conservatism. I'm concerned that perhaps because of the accent of the speaker, or his quickness of presentation, you did not understand his testimony. So could one of you review, please, what are the two main reasons they believe the ISC 3 model is non-conservative?

MR. LONG: I could -- I could address part of that, I guess. There was concern that it does not address recirculation. It does not address -- what was it, mixing height with terrain. I can't remember what the other ones were. They -- there was also the issue of it

being a steady state versus a time dependent model.

MR. WILLIAMS: Yes, and there was also something to do with three dimensional flow field --

MR. LONG: Correct.

MR. WILLIAMS: -- versus -- okay. Now, hypothetically, at least, is it possible that recirculation would make your model results non-conservative?

MR. LONG: Hypothetically, I would need much more data to answer that question.

MR. WILLIAMS: Can you conceive of a hypothetical case, can any of you conceive of a hypothetical case where --

HEARING OFFICER FAY: Mr. Williams, we're not going to ask the panel to speculate.

MR. WILLIAMS: We've allowed that in previous testimony, sir.

HEARING OFFICER FAY: I'm -- we're not allowing speculation.

MR. WILLIAMS: Well, do any of you recall the experimental evidence that the professors cited to say that your rebuttal testimony was incorrect? What was wrong with the

Table 2 in your rebuttal testimony?

MR. LONG: My Table 2?

MR. WILLIAMS: Maybe it's Table 1. Forgive me.

HEARING OFFICER FAY: Do -- do you mean the Staff rebuttal testimony?

MR. WILLIAMS: Yes.

MR. RATLIFF: I believe there is only a Table 1.

MR. WILLIAMS: The -- the table that shows the variation of those inversion --

MR. LONG: Okay. Yeah, they -- they claimed, it's my understanding the claim was that the model does not show a -- a reflection of the -- or it doesn't show that concentrations change when the mixing height changes.

MR. WILLIAMS: Yes, and they cited experience in the LA Basin.

MR. LONG: Right. And they mischaracterized my testimony, too. My testimony was that the maximum impact didn't change, not the -- the -- the concentration at -- on other receptors. But the maximum didn't change as a result of the change in the mixing height.

MR. WILLIAMS: Okay. Next I'd like to

move to the case of the Alviso plant and the Gilroy plant. Are any of you familiar with the Alviso plant and the Gilroy plant? Alviso is a 50 megawatt approximately, and Gilroy is approximately 200 megawatts.

MR. LONG: No, I'm not familiar.

MR. WILLIAMS: None of you are familiar with the Alviso plant, either?

MR. RATLIFF: I believe that Gilroy plant is not 200 megawatts. I think it's --

MR. WILLIAMS: It's 120. Yeah, somebody here whispered 120. Well, for -- if a plant, if this plant were to be sited where the 50 megawatt Alviso gas turbine plant is, would not the PM10 and carbon monoxide and other effluents be available as trade-offs to offset the pollutants from the Metcalf plant?

MR. HILL: Could you repeat the question, please? I -- I didn't understand it.

MR. WILLIAMS: I'm asking if -- if this plant were at the site of the Alviso plant, if you were shutting down and repowering, would not the existing pollution at that facility be available as an offset credit?

MR. HILL: The answer is not

necessarily. No.

MR. WILLIAMS: Because?

MR. HILL: Because the owners of those credits would have possession of them, and may wish to sell them elsewhere.

MR. WILLIAMS: Now, I'd -- I'd like to suggest to you that this is precisely the situation. We have now exhausted the bank of spurious credits, and now is the time to insist that instead of trading for spurious credits, that you shut down polluting facilities and replace in kind the PM10 and NOx that comes from those more polluting facilities. Now, don't you have the authority to insist on no trading?

MR. HILL: No.

MR. WILLIAMS: Does the CEC have the authority to insist on no trading?

MR. HILL: No.

MR. WILLIAMS: Do you realize that the owner that you're speaking to owns both those facilities?

MR. HILL: No. As I said, I wasn't familiar with the facility.

MR. WILLIAMS: I thought you were an expert on the Bay Area air quality.

MR. HILL: I'm not omniscient.
MR. WILLIAMS: You're not --
MR. HILL: Omniscient. I don't know everything.
MR. WILLIAMS: Oh, I see.
MR. HILL: And I will --
MR. WILLIAMS: Omniscient. I -- I thought you said you were not an emission, and I didn't know what you meant by that.
MR. BADR: But what guarantee you that the new owner of these facilities you mentioned are not going to leave the existing facility as is, and expand? I mean, you're making a hypothetical situation, and --
MR. WILLIAMS: Magdy, I --
MR. BADR: -- they have too many ways to --
MR. WILLIAMS: -- I'm suggesting that if you would insist on no trading, my next question is, could you give me the date and perhaps a copy by fax in the next few days of the EPA guidance that -- that remands on the --
MR. HILL: Sure. Look at the California Clean Air Act, 1990 amendments, Section -- and the -- and the Section 52 of the -- 40 CFR Section 52,

and that will talk about the emission reduction.

MR. WILLIAMS: Well, earlier today Molli Dent of -- was asking questions. The date of the letter was September 23rd, 1999.

MR. HILL: Oh, I'm sorry. You're talking about the inter-pollutant trading issue.

MR. WILLIAMS: Yes, the inter-pollutant trading issue. And then you said that the guidance in this letter had been remanded, or changed. So could you give me the date of -- and a copy of the letter that changes that guidance?

MR. HILL: You can see it in the -- in 40 -- in the Code of Federal -- in the Federal Register. Their -- their action on our -- our May 17th revisions. And I don't -- I'm afraid I don't have the reference for that.

MR. WILLIAMS: May 17 of what year?

MR. HILL: Of 2000.

MR. WILLIAMS: Okay. The Federal Register. Well, I'll try to find that, but if you could give me a little assistance I would appreciate it.

MR. HILL: Okay.

MR. WILLIAMS: Wouldn't you concede, though, that we're precisely at the situation that

the ERCs were intended for, where we would shut down older more polluting plants to bring a new larger plant online?

MR. HILL: Yes, and we've already done that. We've already shut down older more polluting plants. Our system is set up so that we shut down the plants first, so we can quantify the reduction --

MR. WILLIAMS: Well, you haven't shut down the Alviso plant, and we haven't shut down the Gilroy plant.

MR. HILL: But we've shut down --

MR. WILLIAMS: And I would argue that these are both plants that are essentially --

HEARING OFFICER FAY: Okay. It's not a time to argue, Mr. Williams. Just ask questions. You have five minutes remaining.

MR. WILLIAMS: Okay. I'd like to direct your attention to Table 9 of the ISC modeling results on page 44. Just -- just for the record, what is your basis in law for not enforcing either the California regulatory limit for PM10 of 50 on 24-hour, 30 on annual, the federal standard? You're exceeding these limits by several hundred percent. What -- what is the legal basis for not

enforcing the California regulation?

MR. RATLIFF: Objection. This is a question calling for a legal conclusion. If it's to be answered at all, it should be answered by counsel for the district, but it will not be evidence, in any case.

MR. WILLIAMS: Yeah. Since we do have the counsel for the district, may I ask counsel for the district that question.

(Inaudible asides.)

MR. WILLIAMS: I can't hear his name accurately.

(Pause.)

MR. KWONG: If I understand the question correctly, you're -- you're asking the question --

PRESIDING MEMBER LAURIE: Mr. Kwong.

MR. KWONG: Yes.

PRESIDING MEMBER LAURIE: One moment, sir.

I'm not going to have the lawyer testify.

MR. KWONG: Thank you.

MR. WILLIAMS: Can't he just give me an answer, a reference --

PRESIDING MEMBER LAURIE: He's not --

he's --

MR. WILLIAMS: -- to the case?

MR. KWONG: I'm not sworn.

PRESIDING MEMBER LAURIE: He's -- off record, he can. But the mere fact that the lawyer is here does not mean that he's going to testify as a witness.

Sir, if you can provide him that information, fine. If you want to ask the question of the witness, and the witness can't answer, it's apparent that he can't, then you move on.

MR. WILLIAMS: Yeah. Well, let me -- let's just say what is the basis for lack of enforcement of a air quality standard?

MR. RATLIFF: Same objection.

PRESIDING MEMBER LAURIE: Well --

MR. WILLIAMS: No, I'm asking the --

PRESIDING MEMBER LAURIE: Just a minute. In this case, I want a foundation that the standards -- ask foundation questions regarding whether or not the standards are being met. If the standards are not being met, then a follow-up question as to the reasoning for not meeting the standards would be acceptable.

MR. WILLIAMS: Okay. Well, let me direct your attention, then, to Table 9, and can you see in the final column the indication that certain standards are being slightly exceeded, some are slightly approached, and some are even exceeded?

MR. HILL: Yes.

MR. WILLIAMS: Which -- in which case is the standard exceeded?

MR. HILL: The -- let's see, we're looking at the -- these numbers here.

MR. WILLIAMS: Directing your attention to 24-hour PM10.

MR. HILL: Okay. So you're looking at -- you're looking at the last column there?

MR. WILLIAMS: Yeah. I'm looking at the two previous columns --

MR. HILL: All right. Yes. The state does 24-hour -- yeah, state standard.

MR. WILLIAMS: Now, is this routinely done on all of your applications?

MR. HILL: Yes.

MR. WILLIAMS: And what is the basis for doing that?

MR. HILL: There's -- there's a couple

of reasons. One is that the state standard is not achievable.

MR. WILLIAMS: Okay. If you say so. I'd like to pursue one other thing. Two other things. The second to the last thing. Directing your attention to page 80 of the FSA, it is Appendix A, and it's a copy of the district's best available control technology guideline. The one that is in the FSA is dated August 24th, 1998. Has the BACT, best available control technology guideline been upgraded or updated since that date?

MR. HILL: I -- I believe it has. Yes.

MR. WILLIAMS: What -- I believe it would be appropriate for the record to reflect the latest upgrade.

MR. HILL: The latest upgrade is not -- it's not relevant to the district's decision, although it may be relevant to the CEC's consideration.

MR. WILLIAMS: So your saying that after the FDOC was issued, the BACT was upgraded. Is that -- is --

MR. HILL: I don't recall what the date is for the -- for the change in BACT guidelines.

HEARING OFFICER FAY: Mr. Williams, the time is up. We have to get to the next questioner.

MR. WILLIAMS: If I can have one more question I would appreciate it.

HEARING OFFICER FAY: All right. Take that last question.

MR. WILLIAMS: My understanding is that SCONOX has been approved as best available control technology in several EPA regions, and is the basis for several power plant applications in California. Why is SCONOX not best available control technology?

MR. HILL: Your understanding is incorrect. And we do not in the Bay Area specify control technology. We specify control technology levels, and allow the Applicant to determine how they're going to meet those levels.

HEARING OFFICER FAY: Okay. The next party that we have a report from yesterday was Mr. Scholz. He said he had 15 minutes of cross examination.

MR. WADE: Excuse me. I just wanted to make a comment, if I could. I was not asked yesterday for a time estimate. I think it was

during the period of maybe five minutes that I was out of the room, unless you carried over some estimate from a previous scheduling hearing.

HEARING OFFICER FAY: No. I -- I did have your name down and there was no number by it, so I assume I asked your name and I got no response.

MR. WADE: I may have been gazing, or something. I don't recall being asked. Could I amend that -- that estimate --

HEARING OFFICER FAY: Can you take five minutes and ask your questions in that amount of time?

MR. WADE: No, I -- I would like to have more if I could, please.

HEARING OFFICER FAY: Well, what do you think you need?

MR. WADE: I think I could probably do it in 15 minutes.

HEARING OFFICER FAY: Okay.

(Laughter.)

HEARING OFFICER FAY: Okay. The Chair has ruled -- Mr. Wade, the Chair has ruled you can have ten minutes. And Mr. Garbett, ten minutes. And Mr. Scholz, we committed 15 minutes to you,

and so those will be the --

MR. SCHOLZ: Can you give Mr. Wade ten more minutes if I choose not to ask any questions?

HEARING OFFICER FAY: I certainly will.

MR. SCHOLZ: Thank you. I will --

HEARING OFFICER FAY: You'll concede your time?

MR. SCHOLZ: I'll concede my time to Mr. Wade, since I have to leave for a family engagement.

HEARING OFFICER FAY: Okay. All right. Mr. Wade.

MR. WADE: Thank you, Scott. Thank you very much.

HEARING OFFICER FAY: You just inherited some time.

MR. WADE: Well, I'm -- okay. Thank you, Mr. Scholz. And I guess I'm feeling pretty wealthy now, so I'll take my time.

(Laughter.)

MR. WADE: My first line of questions is for Dr. Long.

CROSS EXAMINATION

BY MR. WADE:

Q Yesterday, the Applicant characterized

his -- their modeling results by saying that the plant would not produce any detectable effects. Would you agree with that characterization?

A No, I -- I don't agree that that was the testimony. Or -- unless you choose to elaborate. I'm not sure exactly --

Q I see. Okay. My -- my recollection of the testimony was that there would be no detectable effects from -- from the power plant.

A I -- I think what -- what the question was was whether you would be able to monitor the impact, whether monitoring would actually show the impact from this facility. Is that what you're asking?

Q Well, there was a long line of questions followed up, and I guess I'd like to have your opinion on -- on that.

A My -- my opinion would also be that you -- you could -- would not be able to monitor the impact from this facility.

Q And would that be due to difficulties associated with measurement, rather than an indication of the -- necessarily the -- the lack of impact?

A It's a combination of both, and it's a

combination -- one major aspect is the stochastic nature of the atmosphere and the turbulence, and you -- I could go into what's called ensemble averaging and the way that the model predicts concentrations, that even in -- in laboratories it's very difficult to control turbulence and try and measure the results of turbulence. And in a real world situation like this, you would not be able to find the impact from this facility.

Q Thank you. I -- I think we understand that -- that characterization.

Would you agree with the characterization that was given yesterday that allowing mass transfer through the hillside would be conservative? Now, this is with regard to the -- the way the IFC model handles the complex terrain by placing receptors along the contours of the -- of the hillsides, but not conserving mass, but allowing the mass to actually move through the -- through the receptors, through the hillsides.

A I don't think it does.

Q You don't think it --

A It -- the plume will follow -- the plume will come within ten meters of the -- of the ground, and will follow the hillside in IFC, never

getting closer than ten meters. But it does not go -- the plume does not go through the hill.

Q Is that right. So the -- so you're saying that the -- the geographical attributes of the valley are -- actually contain the pollutants in -- in the IFC model?

A No, I -- I'm saying that if you put a receptor on a hillside, put receptors up the hillside, that the model will predict concentrations based upon the plume going over the hill, not going through the hill.

Q Okay. So if I understand what you're saying, the IFC model causes the plume to follow the contour of the hill.

A That's correct.

Q Okay. So then I guess I -- I didn't understand the testimony yesterday, and I -- maybe I shouldn't ask you to -- to explain it. It sounds like there -- there was a statement yesterday that -- that deposition on the hillside would be conservatively predicted by the IFC model, because of the fact that there would be more mixing in real life than there is predicted in the IFC model. Would you care to comment on that statement?

A I -- I think that terrain causes dispersion and turbulence, and the meteorology that's fed into the model does not reflect that turbulence, so that it's a -- the model, it's not a feedback mechanism, so that the terrain does not offer feedback into the meteorology.

Q Uh-huh. Okay. I think I understand that. Thank you.

Okay. Regarding the comments that were made by the professors from Monterey Post -- Postgraduate School. You -- there were comments made that the -- quoting from the EPA guidelines, that there are certain conditions under which no model could be relied upon. Are you familiar with that section of the EPA Appendix --

A Yes.

Q -- W, I think it is.

A Yes.

Q My question to you is, have you ever encountered a situation in your career where no model was applicable?

A Yes.

Q Can you describe the -- the conditions there?

A Yes. And I -- I wasn't working at the

district at the time, so I can't speak as a district representative for it. But the district did accept the work that was done for it. And that's when PG&E was proposing to put in a cogeneration facility on -- I think it was Jessie Street or Stevenson, just south of Market in San Francisco. And the stack was going to be below the height of a neighboring building, so that in conjunction with the Bay Area district, a protocol was worked out to look at both the effect of that neighboring building and also the impact of the plume from this cogeneration facility upon the Ramada Renaissance and the Hilton Hotel just to the north of Market Street.

Q And were those protocols EPA approved, on the list of EPA approved, approached?

A The -- there wasn't -- there was no model to be used for that, so that what was agreed upon was a wind tunnel study.

MR. WADE: I understand. Okay. Thank you. That's -- that's all I need to know on that subject. Thank you.

Since I have so little time I think I'm going to have to curtail my questions for Dr. Long. Thank you. And move to Dr. Lim.

CROSS EXAMINATION

BY MR. WADE:

Q I understand that, according to your testimony, Dr. Lim, that you were one of the creators of Regulation 9, Rule 11, of the air district's guidelines for reducing nitrogen oxides and other pollutants from power plants. Could you very briefly describe what that rule causes to happen?

A Yes. That rule controls nitrogen oxide emissions from large central power plants in the Bay Area. These are the power plants that were originally owned by Pacific Gas and Electric. There are four facilities in the Bay Area, 20 -- in the past, recent history, 23 boilers. The rule requires that the emissions from these plants be reduced over time, commencing in 1995, to a final compliance date of 2005.

Q Okay. Thank you. I also see that you have provided expert testimony to the PUC and CEC and the CARB regarding AB 1890, which is the electric utility restructuring and deregulation legislature. Would you say that you are in general an advocate of deregulation?

A First of all, just a minor correction.

I believe I said expert commentary. I don't think I said testimony.

Q Oh, I'm sorry. My mistake.

A No, my position was not of advocacy or opposition to restructuring or deregulation, but to raise concerns about the potential air quality impacts of deregulation and restructuring. Because part of the legislature was presumably to promote competition and reduce costs to the consumer, and I was in favor of certainly that.

Q Okay. But it sounds like you said that there were some concerns associated with deregulation. Have you seen some of those concerns bear out?

A Yes, but probably not for the reasons I envisioned. I think a lot of people did not forecast our -- the current situation.

Q Okay, thank you for that. We've heard in some detail your position on diesel generators. And I think I'm -- I understand your -- your testimony. Are you in favor of all power plants that meet the permitting guidelines for the air district?

A No. I'm not in a position of promoting any specific plant. But if it can be demonstrated

that there is a need for new electric generation for purposes of not only supply, but of reliable supply, and that's a judgment that's going -- has to be assessment done by other powers that be, such as the Energy Commission, PUC, then the central power plant would be the more desirable from an air quality protection point of view. Yes.

Q Okay. So -- so your position is fairly general.

A Yes.

Q It was not addressed to a specific location or specific power plant.

A Yes. Given the choice of, say, some distributed generation option versus a clean central power plant, seeing most cost effective and protective of the environment to require major controls on a central power plant that meets the latest modern control technology.

MR. WADE: Okay. Thank you. That's all I have for you.

If I could move, then, to Mr. Ringer.

CROSS EXAMINATION

BY MR. WADE:

Q You stated earlier that the significance

level of one was not a -- I think you said bright line. And I understood you to say that if -- if your analysis showed a significance level of less than one, it would not necessarily imply that the project was not a health risk. I think you said it would not be okay. Is that -- do you recall that line of testimony that you provided?

A I don't -- if I said that, I'm not sure. What I meant to say was if it was -- the hazard index was less than one, then we would not consider it significant. And if it's more than one, it doesn't automatically mean that it is significant.

Q Oh, perhaps I misunderstood you. I did hear Mr. Hill say that less than one was not significant, but I -- I thought I heard you say that a significance level of less than one would not necessarily apply, that the power plant, or a project was -- was not a risk. Are -- are you disagreeing with me, or would you agree that you gave that testimony?

A Well, I think I just clarified what I meant to say, whether I said it or not.

Q Okay. All right. I accept that. In your health risk assessment did you look at

synergistic effects?

A No.

Q So in particular, you did not, by obvious inference, consider the effect of particulate and formaldehyde. There -- there are studies that have shown that absorption of formaldehyde is -- is greater in the presence of particulate material. Are you familiar with those studies?

A Not in particular.

Q Okay. Are you familiar with the recent studies of the effect of PM10 on mortality in cities in the United States?

A Yes.

Q Are you familiar with the study by Jonathan Summay from Johns Hopkins University Medical School, published in the New England Journal of Medicine in January of 2000? It's docketed.

A I'm somewhat familiar with those studies, in general.

Q You say you're -- you're familiar with the subject in general, but you're --

A That -- those -- there are a number of studies that have come out in the past few years

on particulate matter. Less than ten microns and mortality rates.

Q Uh-huh. The particular study that I've referred to indicates that there is a proportional effect of -- of PM10 on mortality in cities to the degree of .51 percent increase in mortality for every ten micrograms per cubic meter of particulate increase. Would you care to agree or disagree with that, or would you like to look at the article to confirm that statement?

A I'll take your word for it. I don't remember the exact number, but I do remember that there was an association made, and that sounds -- that does sound plausible.

Q Okay. In light of the -- this information that you think is plausible, and in light of the fact that the power plant is predicted to increase the local PM10 by almost exactly ten micrograms per cubic meter, would you infer that there may be a proportional increase in mortality associated with the power plant?

A I might be able to make that -- I might be able to agree with that if it weren't for the offsets, and the fact that the district does have a program to compensate for increases in pollution

such as this. So in other words, I believe that the offsets are designed to compensate for the effects of the increased PM10 from this plant.

Q I think I understand what the offsets are intended to do. We've also seen estimates of the impacts of the power plant by numerous modelers which show that the maximum impacts occur within a very short distance from the power plant. I think you -- you've seen those; is that right?

A Yes.

Q Would you, as we all have, infer from that that the impact is a fairly localized one with regard to PM10?

A I'd say the models -- the model results are as you describe them. Given the fact that there are over-predictions and that they are just model results, I don't think you can say necessarily that the impacts will be exactly where the models say. In reality, impacts occur continuously, and depending on the meteorological conditions in different places and different times.

Q Sure. I guess I understand that -- that we can't very well disagree with the model and then use the model as evidence that -- that we're

going to be impacted. But nor can you use the -- the approach of suggesting that the model is only accurate when it supports your view, but inaccurate when it doesn't support your view.

A I didn't say the model was accurate. I said it was over-predictive. That's -- that's not accurate.

Q Would you agree that the -- that the general area in which the maxima occur is correct? And I mean by general, say the fact that they occur within a mile or two of the power plant. This is PM10 we're talking about. Would you agree that the prediction of that phenomenon is reasonable?

A Yes, I'm sure it's -- it generally describes the impacts that would take place. I'm not prepared to say that the offsets will exactly offset each impact hour by hour, or whatever. There -- it's already been discussed and testified to that they're somewhat regional, and the offsets are somewhat regional. I don't think anybody has suggested that you can exactly offset every impact. In general, the whole program is designed to lower the particulate matter counts over time, and I think they've been doing that.

Q Okay.

HEARING OFFICER FAY: Just a couple of minutes left, Mr. Wade.

MR. WADE: Thank you. I -- I think that's all I need to ask of Mr. Ringer. Thank you. And I'll move quickly to Steve Hill.

CROSS EXAMINATION

BY MR. WADE:

Q I can't remember whether it was Mr. Kwong or you that testified that there is a mission of the air district to preserve public health. Would you agree with that -- that general mission?

A It's -- it's one of our goals, yes.

Q Okay. There's a -- there's a state health limit for PM10 that's promulgated by the EPA, but not required by the Clean Air Act, and therefore not enforced by the air district. Are you familiar with that -- that limit that I'm referring to?

A No.

Q Fifty micrograms per cubic --

A No. I don't know of any limit that matches the description you just gave me.

Q Okay. I may -- this -- my colleagues

tell me that this is a California EPA limit.

A There's a -- there's a state limit for PM10, yes.

Q That's a 50 micrograms per cubic meter?

A Yes.

Q And it's not enforced by the air district?

A The -- the limits, those ambient limits aren't enforced. They're targets.

Q I see.

HEARING OFFICER FAY: Time's up, Mr. Wade.

I understood Mr. Scholz to concede you ten minutes; was that correct? Take -- take the last five minutes.

MR. WADE: Thank you, Scott. Thanks very much.

HEARING OFFICER FAY: Okay. Go ahead.

BY MR. WADE:

Q Okay. So the question is, you're familiar with this limit, and you said it's not a limit, it's a target.

A It's -- it's a standard. It's a health based standard, and it's a goal towards which the -- we would like to go.

Q We would like you to go there, too. And I'm curious, what -- what exactly are you doing to try to go there when you don't require or you don't effect a permitting guidelines based on that limit?

A We don't --

Q On that standard.

A We don't yet have a program for seeking to attain the PM10 standards. As you know, the EPA just won a tremendous victory in the Supreme Court on this issue, and we expect programs to develop as a result of that -- that victory.

Q So you're waiting for the -- the California Clean Air Act to be amended to require you to -- to use that as a standard? Is that what you're -- you're saying?

A We expect that the -- the efforts that are going to need to be made in order to work towards the federal standard will also bring us closer to the state standard. But it's important to know that the state standard is a health based standard, it's a target, and it's unachievable simply by virtue of the background levels are such, just from the -- all the activities that people do, it's not an achievable -- it's not an

achievable standard. So what it works as -- as a goal in the distance that we move -- try to move towards. But it's not an achievable standard.

Q That's -- that's interesting. I'm sorry you feel that way, since you're charged with making that happen.

A Well, it's -- it's not a matter of feeling that way. That's a physical fact that it's not attainable.

Q Is it a physical fact or is it a economic fact?

A It's a physical fact.

Q Really. So you mean to say that if we were to stop driving our cars and stop generating electricity we would --

A I -- I -- I'm not entirely sure of this, but I strongly suspect that if we removed all the people from the Bay Area, the Bay Area would still be in excess of this just from the -- the natural sources.

MR. WADE: Wow. Okay, I -- I guess I'm really not qualified to debate that subject. I find it surprising. And on that note, I will leave it to someone else to follow up.

HEARING OFFICER FAY: Great. Thank you.

Mr. Garbett, you have ten minutes.

MR. GARBETT: Yes, William Garbett, on behalf of the public.

Dr. Lim.

CROSS EXAMINATION

BY MR. GARBETT:

Q Dr. Lim, you have spoken of diesel powered emergency generators or backup generators that are being pressed into regular use. You spoke of that earlier.

A Yes.

Q Would there be a net benefit on using these on a regular use --

A I'm sorry. I'm sorry, there's been a noise, I didn't catch that.

Q Okay. Would there be a net benefit of using these diesel powered generators on a regular basis if you could eliminate all transmission losses by simply being right on the property that's using the particular electricity? Might there be a trade-off at some point?

A Are you saying that having these generators located directly at the facility and therefore having no line losses could compensate for the excess emissions they produce?

Q There might be some trade-off point. It may not be practical, but --

A No, I don't believe so, because the emissions rates on these engines are so high that even if -- giving them the best benefit of the doubt, that high efficiency and no loss would still not compensate anywhere near their emission load.

Q Are some of these emergency generators being pressed into regular use owned by PG&E that are actually generators with a transformer bank to go and stand by, sometimes for weeks, months, and years, because they won't replace a transformer or other maintenance facility?

A I don't know what PG&E's schedule is, but I would not be surprised if they did own some backup generators. It's prevalent in practically all commercial, industrial facilities, and office buildings.

Q Would it surprise you to see there were at least 50 right here in the Bay Area?

A Fifty backup generators?

Q Of PG&E. For instance, a power transformer blows out in the neighborhood so they bring up their van with a generator to go and

replace it.

A I don't know the number that PG&E has.

Q I see. It's a significantly larger number, and it has been increasing in recent years. A few years back they had virtually zero of these, so it is an ever increasing number.

With these diesel generators, they do have a motor, and this motor is set. Is that -- would that generator be similar, the diesel, to that being used by the Metcalf Center for their fire engine?

A The Metcalf emergency fire engine is, I believe, around 300 horsepower, so there -- it's smaller than the average size backup generator.

Q Yes. Could that be mitigated very easily by putting an exhaust filter on it, similar to what the trucking industry uses on comparable engines of comparable size?

A Using the right filter system would reduce the emissions from that engine, yes.

Q Do you think Staff should have that as one of their conditions of operation?

A The engine there has a -- has a calculated significance level of health impact of less than one in a million increased cancer risk,

so that is considered not significant. So it's not a requirement that this particular engine have such a filter. I believe the engine is sufficiently modern that it has actually reduced particulate emissions, and as a result of that, and its small size, have a -- result in a risk screening assessment of less than one.

Q Dr. Lim, that figure of less than one in a million is very good for the general population around the area, but what about worker safety of those actually onsite in close proximity; what would be the risk factor there? Would it be increased?

A It's possible it could be slightly higher, but it also could be lower than that, because the point of maximum impact may not be on the property site itself. And the assessment did identify the maximum point of impact to the maximum exposed individual, and that was the number that was used in the assessment.

MR. GARBETT: Thank you.

For the Staff, there are transmission lines that are going to be connected to the Hetch-Hetchy from this. Those transmission lines, basically they have said there would be, quote, no

new towers, but in the visual presentation we noticed two 74 foot H-frame towers that were going to be used on the Calpine Metcalf Energy site. With those lines connecting to insulators, does the Staff believe there might be, for instance, arcing or other things take place in damp or night weather, where dew proximity?

MR. RINGER: I think that subject is dealt with in Transmission Line Safety and Nuisance.

MR. GARBETT: Okay. With that, could there not be ozone generated from this arcing, or are those things that should be addressed in the Air Quality?

MR. RATLIFF: I believe the witness is saying that the issue of arcing -- electrical arcing is actually covered under Transmission Line Safety and Nuisance, which is a different area of testimony, which I believe has already been presented.

MR. GARBETT: But my question was, that's already been presented, and the information is there that there are things like this, but I am particularly concerned with any generation of ozone that might happen under certain weather

conditions.

MR. HILL: From the perspective of the air district, no.

MR. GARBETT: Okay. This would be what you'd call a background level, then.

MR. RINGER: Well, ozone -- ozone generated that way has a very short life.

MR. GARBETT: And it can be insignificant amounts.

In the project itself, in the final document that was prepared by the Staff, we have no mentions, even though it was brought out in the hearings for well over a year, about viruses, preons, and other sorts of pathogens, and it was completely excluded in the Final Staff Assessment. Is there a reason why these have been excluded, since in, for instance, legal newspapers of general circulation have many stories, for instance, of virus transmissions and preons such as Mad Cow Disease -- and other factors, for instance, that are air-borne.

MR. RINGER: Let me direct you to page 93 of the final Staff Assessment, Disinfected Tertiary Recycled Water, where I describe the water. And on page 94, following, I talk about

several studies that have looked at bacteria and virus levels in such water.

MR. GARBETT: Yes. Is there any mention of preons there?

MR. RINGER: You'll have to enlighten me on what a preon is.

MR. GARBETT: I suggest you read legal newspapers of general circulation that have many stories on preons. As a matter of fact, there are some that have been found in the administrative record already before the CEC.

HEARING OFFICER FAY: Apparently the witness doesn't -- is not familiar with it.

MR. GARBETT: Okay. He's not familiar, but I would suspect that after a year of requesting this before the Preliminary Staff Assessment and the Final Staff Assessment was made, he would've made some attempt to actually bring forth and address the issues that the public has brought forth to the Commission. Okay.

If there are pathogens, for instance, contained within the PM10 emissions, and being primarily of a size generated by the plant in the PM2.5 or below, which the majority of the emissions are, in the presence of these pathogens

and acrolein and other free radicals generated by the combustion product, would not the lungs of people be very sensitive receptors being that the cross between the blood supply and the atmosphere is almost direct at that level of the lung passages?

MR. RINGER: I don't believe that there will be any bacteria or viruses emitted by the cooling tower in amounts that are worth considering. If you will, again, refer to page 94 of the Final Staff Assessment, it talks about levels of such pathogens in the cooling water, and I don't believe that there will be any of any level worth considering.

MR. GARBETT: Are you --

HEARING OFFICER FAY: Excuse me, Mr. Garbett. Your time is up.

And that concludes the cross examination of the Staff panel. I thank the panel, and with the exception of Dr. -- well, unless -- Mr. Ratliff, unless you have redirect.

MR. RATLIFF: I do.

HEARING OFFICER FAY: You do.

MR. RATLIFF: And I'll try to be brief.

HEARING OFFICER FAY: All right.

MR. RATLIFF: I realize how chagrined everyone will be that I do, but I do. And -- and I would address -- I'm only going to address three witnesses, of my witnesses, and I will keep my questions hopefully short, and I -- I trust in their ability to be concise and yet informative in their answers.

REDIRECT EXAMINATION

BY MR. RATLIFF:

Q Mr. Hill, you discussed the issue of offsets, and I wish you would take a moment to describe why offsets result in a reduction in criteria air pollutants over time.

A Right. The -- the offset program in the Bay Area has two major effects. One is, I alluded to earlier, the no net increase program, where the -- the net effect of increases and decreases from industrial sources within the Bay Area is -- is always slightly improving. When we have offsets, we always require a greater reduction than the allowable increase. We have a pool of offsets that's shrinking as they're used, and -- and gets replenished as -- as sources get shut down. But the net effect of this is -- is a steady decrease in the overall amount of pollution emitted by the

-- the stationary sources.

The second effect is actually a very important one for us, in that the offsets tend to drive technology, and -- and encourage facilities, because the offsets are expensive, they encourage facilities to take extraordinary measures to advance the technology to reduce their emissions, to minimize the amount of offsets they generate.

There's been some discussion here about best available control technology, and whether or not it's being applied here. The fact that there is a debate, the fact that there are new technologies that are being developed to reduce these emissions, that's being driven by the requirement for offsets.

Q Thank you. And when someone banks an offset to get an ERC, is there a discounting of the amount that is actually banked?

A There are two discounts that occur. One is that when the credit goes in to the bank, we evaluate the actual emissions, we quantify the actual emissions, and then we reduce it by any future effective rules that apply to that source. So if, for example, there's a hundred ton source that is subject to rule that if it kept operating

would be reduced to 80 tons, 80 tons is the maximum amount that can be banked.

Then, when it's taken from the bank and used in a project like this, there is an offset ratio, a discount, a haircut, if you will, of the emissions of 15 percent that, at least for -- for the ozone precursors, that reduces the use of that remaining amount, or reduces the amount of increases associated with it, so that -- so that there is a net reduction. And that's what we use to ensure that there's a net air quality benefit from the -- from the overall transaction.

Q We also had questions about PM10 and the district, and how the district is addressing it. Is the district addressing PM10 programmatically?

A Yes. We have the PSD program, which deals with increases. And we are -- we have regulations that apply to individual sources. We are expecting to develop a much broader PM10 reduction program in response to the recent changes in the federal standards.

Q Are you -- is there any discernible trend in terms of the ambient background PM10 in the Bay Area over the last 15 years?

A I can't answer that question. Glen, do

you have --

MR. LONG: I can't answer that completely. I can provide some insight that the district at one point was unclassified for their attainment of PM10 standard because there were some exceedences at the Fourth Street monitoring station in San Jose. The data -- and that was all the way back in 1990, 1991, I think it was. Since that time there has not been a -- an exceedence recorded at that site, and because of the new fine particulate standard being considered, that re-designation has not taken place. So that it's still being investigated.

MR. RATLIFF: Thank you.

BY MR. RATLIFF:

Q And, Mr. Long, an additional question. You were earlier asked about the federal guidelines for the -- the federal EPA guidelines for air quality models. And you were asked if -- particularly about the requirement that -- or the suggestion in those guidelines that there may be instances where no model should be used. Is the situation here one of those instances?

A No.

Q And why not?

A Because I think the -- the EPA took into consideration these kind of issues when they wrote their guidance. Their guidance, as I said, was last modified in 1999. EPA continues to -- to look at their guidance and to look at their adequacy. As I also testified, there's a whole chapter on issues dealing with modeling sources in complex terrain, and this is the -- the recommended procedure as set forth in the guidance.

MR. RATLIFF: Thank you.

MR. LONG: Sure.

BY MR. RATLIFF:

Q Finally, Mr. Lim, you were cross examined earlier tonight regarding -- well, actually, a number of things, but certainly about the diesel engines at the CVRP campus. Now, when we discussed CVRP and the EIR for CVRP, it wasn't our intent in those discussions to single out CVRP. Is that correct?

A That's correct. We were just using an example of the type of diesel engines we were concerned about, and I believe we -- you selected -- asked me if that was a specific example that would be potentially in the local area.

Q I know personally my interest was triggered by the comparison. Is -- health risk assessment is a lot about comparisons, isn't it?

A Yes.

Q Now, the -- the EIR for CVRP indicated that CVRP was going to use diesel engines; is that correct? At least that was the original proposal?

A I --

MR. RATLIFF: Well, I think that foundation was laid earlier.

The objection we're getting is that the witness -- I had not laid a foundation that the witness is familiar with the EIR. I believe that foundation has been laid in prior questioning. I would --

HEARING OFFICER FAY: By -- by Mr. Beers.

MR. BEERS: I mean, I had the pages of the EIR, and I'd be happy to make them part of the record. It speaks for itself.

HEARING OFFICER FAY: I -- I think the degree to which Dr. Lim is and is not familiar with at least the parts that Mr. Beers reviewed, it's been established.

MR. RATLIFF: Yes. And -- and the

questions I have are, again, to make a general point with regard to diesel engines, and I think that this EIR is somewhat instructive. If we, you know, if it's necessary to -- to make this volume of the EIR part of the record, then I would ask the Committee to take official notice of it. It would be entirely appropriate for them to do so. But in any case, the questions I have basically are of a nature where I'm using CVRP as an example.

HEARING OFFICER FAY: All right. And the EIR was prepared by who?

MR. RATLIFF: The City of San Jose.

HEARING OFFICER FAY: All right. I -- we will take official notice of that, and --

MS. DENT: I would like to ask that the official notice be limited to the portions of the EIR that were testified to here today. I don't think the whole EIR is in evidence, and I don't think that anybody's asked for it to be in evidence.

HEARING OFFICER FAY: Well, is that --

MS. DENT: But I --

HEARING OFFICER FAY: -- is that the extent of your request, Mr. Ratliff?

MR. RATLIFF: Yes.

HEARING OFFICER FAY: Okay. So can you --

PRESIDING MEMBER LAURIE: Well, in -- in fact, Mr. Fay, and all -- I don't know if we have to rule on this now, but there have been references to the Coyote Valley project, and it is a public document. I see no harm in taking the entirety of the document as official notice.

MS. DENT: I'm going to object to that on the grounds of relevance. I don't see how that entire document has any relevance to this proceeding at all, and I'm --

PRESIDING MEMBER LAURIE: Your objection is noted, Ms. Dent.

BY MR. RATLIFF:

Q Now, the -- the discussion in the -- are you familiar with the discussion in the EIR of the diesel engines, Mr. Lim -- Dr. Lim, I should say. I apologize. I have not -- I apologize generically to -- to anyone who I -- all of the doctors tonight who I failed to address as doctor.

A Not a problem.

Q Did -- have you looked at the section of the EIR which discusses the diesel backup

generators?

A Yes.

Q And did that discussion -- did it initially discuss the diesel backup proposed?

A My understanding of that section, as I read it, was that the backup generators would be diesel fuel fired. I believe that was the proposal. I note that the -- the EIR suggested there might be other alternatives, but it's my understanding that diesel fuel was the first proposal.

Q And -- and was one of those alternatives a less polluting diesel alternative?

A There are other less polluting alternatives proposed on the list, yes.

Q And -- and we heard that there were other alternatives, as well, propane and natural gas among them, I believe. Is that correct?

A Yes.

Q In your experience, what typically gets installed as a backup generator?

A The vast majority of the installed database are diesel fuel fired engines. And, in fact, the vast majority of the new proposals in front of the air district, as far as permit

applications, are also diesel fuel fired. And in many cases, applicants are surprised that we ask them to -- make a finding to consider other alternatives first.

Q Can you name any reasons why typically diesels get installed instead of other types of backup generation technologies?

A I think certainly one is of cost and availability. These diesel gen sets are readily available commercially, and has historically been the first choice.

MR. RATLIFF: Thank you. I have no other questions.

HEARING OFFICER FAY: Okay. What parties intend recross within the scope of the redirect? Mr. Williams. All right. Proceed.

RECROSS EXAMINATION

MR. WILLIAMS: With respect to the energy resource credits, Dr. Lim, wouldn't you agree it would be better to shut down some of these old diesel generators and to pay money into a bank for the volatile organic compounds from the shutdown -- wouldn't it better protection for the Bay Area environment to take the particulate from the diesel generator, and the volatile organic

compounds?

In other words, you should insist on no cross-trading. Do you agree?

DR. LIM: I'm not sure you -- I understand the question about no cross-trading. Certainly reducing emissions from all sources, including the older diesel engines, that would be desirable.

MR. WILLIAMS: Well, let me ask Mr. Long that same question. Would you agree that it would be better to shut down these small 49 megawatt power plants that don't meet existing air quality standards, than to proceed with trading volatile organic compounds for PM10?

MR. LONG: I can't answer that. I have not done an analysis comparing the two.

MR. WILLIAMS: Mr. Hill. Same question.

MR. HILL: No.

MR. WILLIAMS: Thank you. I appreciate the public spirit of our agencies here.

Mr. Magdy Badr. Do you understand the thrust of my question? Wouldn't we be better off to get rid of obsolete power plants than to trade volatile organic compounds for PM10?

MR. RATLIFF: Commissioner, I have to

object because I don't know what it means when we ask wouldn't it be better to get rid of such plants. That isn't one of the possible avenues of action before this agency.

MR. WILLIAMS: It's not precisely a hypothetical question. You could refuse to allow inter-pollutant trading.

HEARING OFFICER FAY: Yeah, I -- I'm going to sustain the objection, Mr. Williams. Do you have any other questions within the scope of the redirect?

MR. WILLIAMS: The redirect was pretty limited, so I pass at this point.

HEARING OFFICER FAY: All right. And Mr. Garbett.

RECROSS EXAMINATION

MR. GARBETT: The one question that I have on the redirect is pollution credits are being used to offset the significance of a Calpine Metcalf power plant. If the Calpine Metcalf power plant would close for some reason, would they be allowed to bank any credits that they have on the basis of their plant be recirculated once again, forever and forever, in the same fashion?

MR. HILL: Yes. They would be able to

bank quantifiable emission reductions. If there were a standard that went into place after that date, they would be allowed to bank a level that's less than what they were actually emitting. And then, when those credits were used there would be a 15 percent emission reduction.

MR. GARBETT: This is for the Staff. Is there any possibility, for instance, that these credits would not be allowed to be banked, but would be extinguished upon the closure policy in the Final Staff Assessment.

MR. HILL: Not under our regulations.

MR. BADR: I'm not so sure I understood the closure of the project part --

MR. GARBETT: In the FSA they have a closure of a plant. Could a condition be there that all air credits be extinguished when the plant goes to closure, and no banking be allowed of the credits?

MR. BADR: I don't see why the reason that could be. Obviously, they are -- at that point, they are a source they are emitting, and they have to follow the Bay Area Air Quality Management District guidelines on how to -- going to use their emissions at this time.

MR. GARBETT: Thank you. That's all.

HEARING OFFICER FAY: All right. That concludes the presentation of the Staff panel and the panel is excused, with the exception of Dr. Lim, who we ask to be available on March 14th. And we will begin tomorrow at 2:00 o'clock here, with CVRP's presentation of Mr. Radis' direct testimony.

MR. WILLIAMS: Mr. Fay, one particular question.

HEARING OFFICER FAY: Yes, Mr. Williams.

MR. WILLIAMS: It strikes me that if we don't get the Fish and Wildlife report pretty darn quick, that we are going to have to delay the proceedings. I think it's inappropriate to submit our summary testimony without having even seen the Fish and Wildlife report.

HEARING OFFICER FAY: Okay. Thank you for that.

(Inaudible asides.)

HEARING OFFICER FAY: Dick Ratliff. Mr. Harris has reminded me you haven't moved your -- your documents.

MR. RATLIFF: I so move.

HEARING OFFICER FAY: Any objection to

receiving the Staff testimony and BAAQMD testimony?

MR. HARRIS: I assume that's with the exception of Dr. Lim's testimony.

HEARING OFFICER FAY: With the exception of Dr. Lim's testimony. Objections reserved on that.

I hear no objection. So moved.

(Thereupon the testimony of CEC Staff and Bay Area Air Quality Management District was received into evidence.)

MR. RATLIFF: Thank you, Jeff.

(Thereupon the hearing was adjourned at 11:55 p.m.)

CERTIFICATE OF REPORTER

I, JAMES A. RAMOS, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Evidentiary Hearing; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said Hearing, nor in any way interested in the outcome of said Hearing.

IN WITNESS WHEREOF, I have hereunto set my hand this 7th day of March, 2001.

JAMES A. RAMOS