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UNITED STATES NUCLEAR REGULATORY COMMISSION
HEARING: DIABLO CANYON SUBPART K PROCEEDING, ORAL ARGUMENTS

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TUESDAY
July 1, 2008
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The Commission convened at 9:00 a.m., the Honorable Dale E. Klein, Chairman
presiding.

- NUCLEAR REGULATORY COMMISSION
- DALE E. KLEIN, CHAIRMAN
- GREGORY B. JACZKO, COMMISSIONER
- PETER B. LYONS, COMMISSIONER
- KRISTINE L. SVINICKI, COMMISSIONER

1 PARTICIPANTS:

2 LISA CLARK, Esq., NRC Office of General Counsel

3 DAVID REPKA, Pacific Gas & Electric - Attorney, Winston & Strawn

4 DIANE CURRAN, Esq., San Luis Obispo Mothers for Peace

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CHAIRMAN KLEIN: Good morning. Pursuant to 10 CFR Part 2 Subpart K we're here to conduct an oral argument in a proceeding to license an independent spent fuel storage installation at Pacific Gas and Electric's Diablo Canyon site.

The case is before us on remand from the United States Circuit Court of Appeals for the Ninth District. That court held that the National Environmental Policy Act, NEPA, does not permit the NRC to categorically exclude consideration of the environmental effects of a nuclear terrorist from NEPA statements.

As we have noted previously, the Ninth Circuit explicitly said in its decision it did not constrain the NRC's consideration of the merits on remand or circumscribe the procedures to be employed.

At the outset, I want to notice that aside from the fulfillment of NEPA standards the NRC has had a long security regulations and program acting under its authority to protect public health and safety and common defense and security under the Atomic Energy Act.

And after the terrorist events of September 11th, 2001, the NRC enhanced these programs in many areas such as guard force size, physical barriers, access control and response strategies.

In regard to the requirements of NEPA we fully recognize our legal duty to abide by the Ninth Circuit's ruling. So after the remand, we directed the NRC staff to supplement its environmental assessment and include a terrorism analysis.

1 Among other things, we stated that we expected the NRC staff, to the
2 extent practicable, to base its supplemental environmental analysis on information
3 available in Agency records and consider in particular the Commission's design
4 basis threat for power plant sites, information on the independent spent fuel
5 installation design, and mitigation and security arrangements bearing unlikely
6 consequences.

7 All of that consistent with the requirements of NEPA, the Ninth Circuit's
8 decision and the regulations for the protection of sensitive and safeguards
9 information.

10 The staff completed its supplemental environmental assessment. The
11 intervener, the San Luis Obispo Mothers for Peace, was dissatisfied with the
12 staff's supplement and filed five contentions challenging it.

13 The Commission admitted two of these contentions for hearing. One
14 contention we admitted concerned the staff's underlying NEPA documentation.
15 We referred that one to the presiding officer for the Atomic Safety and Licensing
16 Board Panel and he resolved it this past May. We appreciate his prompt decision.

17 The other contention we admitted questions whether the staff's
18 environmental assessment adequately considered land contamination and latent
19 human health effects that might ensue from the kind of terrorist attacks the staff
20 considered plausible. That is the sole contention before us today.

21 The Commission is not here to reconsider contentions that were not
22 admitted. As I said at the start, we're moving forward today under our Subpart K

1 oral argument procedures. Subpart K derives directly from the Nuclear Waste
2 Policy Act which in Section 134 directed us to establish an oral argument
3 procedure to resolve cases involving applications to license on-site spent fuel
4 storage facilities.

5 The Subpart K oral argument procedure is an alternative to our traditional
6 trial type adjudicatory process. But Subpart K does leave open the possibility of a
7 further judicatory hearing after oral arguments should such a hearing be necessary
8 to resolve a factual question with accuracy.

9 Any party may invoke Subpart K. PG&E and the NRC staff did so early on
10 in this case before the Ninth Circuit's remand decision and PG&E renewed its
11 request for a Subpart K proceeding after the remand.

12 This is a first time the Commission itself has conducted a Subpart K
13 proceeding, although licensing boards have done so on a couple of past
14 occasions.

15 The Subpart K oral argument means that the lawyers get to talk and they
16 also get to answer the questions we have. They no doubt will try to persuade us
17 that their arguments are logical, sound and based on the record and we're
18 interested in what they have to say.

19 As Subpart K provides, the parties have provided us with briefs and
20 affidavits laying out their views of the facts and law in advance of today's hearing.
21 We've read them and we're prepared to discuss them at this morning's oral
22 argument.

1 The oral argument is to be based on the existing record. We will not be
2 entertaining new information or exhibits, nor will we be hearing testimony from
3 witnesses.

4 This is an oral argument by lawyers, not an evidentiary hearing akin to a
5 courtroom trial. In a prior procedure order we set up the format for today's oral
6 arguments. The NRC staff council will go first and is given 15 minutes for
7 presentation.

8 Then my fellow Commissioners and I will in turn ask questions of Staff
9 Counsel in one or more rounds of questions. Then PG&E Counsel has five
10 minutes, which again will be followed by one or more rounds of questions.

11 At the conclusion of the questions for PG&E Council, The Commission will
12 take a short break. After the break, the counsel for San Luis Obispo Mothers for
13 Peace will be given 20 minutes. This will be followed by one or more rounds of
14 questions for their counsel.

15 Staff and PG&E may reserve time from their initial presentation for reply.
16 The staff is going first today because it has the burden under NEPA to sustain the
17 reasonableness of its environmental assessment and all parties are seeking a
18 decision by the Commission that there is no dispute of fact or law requiring a
19 further evidentiary hearing.

20 With all that background out of the way I think we're now ready to start. As
21 stated earlier the statements and questions will be addressed by the respective
22 lawyers. And I would ask all lawyers to introduce themselves and their colleagues

1 beginning with the NRC staff and then we'll get started with the staff's oral
2 argument.

3 MS. CLARK: Good morning. My name is Lisa Clark and I'm here
4 representing the NRC staff. With me today is Molly Barkman, my co-council.

5 CHAIRMAN KLEIN: Thank you. And PG&E?

6 MR. REPKA: My name is David Repka, counsel for PG&E. And this
7 is my associate, Tyson Smith.

8 CHAIRMAN KLEIN: San Luis?

9 MS. CURRAN: My name is Diane Curran. I'm appearing for San
10 Luis Obispo Mothers for Peace. With me today are our expert witness, Dr. Gordon
11 Thompson, Jane Swanson of the San Luis Obispo Mothers for Peace and Edwin
12 Lyman, our expert consultant.

13 CHAIRMAN KLEIN: Well, thank you for those introductions.
14 Ms. Clark, would you like to begin?

15 MS. CLARK: Yes, thank you. As you have already discussed there
16 is only one admitted contention which is currently before the Commission and that
17 relates to the environmental assessment that the staff prepared for the
18 Independent Spent Fuel Installation, or ISFSI, that is proposed for the Diablo
19 Canyon reactor site.

20 That contention alleges that the staff's environmental review was not
21 adequate because it failed to account for the consequences of latent health effects
22 and land contamination.

1 As I will explain today, we believe that our presentations in our written
2 filings demonstrate that the staff's environmental assessment is sufficient to
3 comply -- we believe that our environmental assessment is adequate to comply
4 with the legal requirements of NEPA.

5 Our Environmental Assessment described our analysis of environmental
6 impacts and in fact included consideration of both land contamination and latent
7 health effects.

8 In conclusion, we believe that there is no need for any further adjudicatory
9 hearing in this proceeding and the Commission should resolve the contention in
10 favor of the staff.

11 The staff's environmental assessment was guided by the legal
12 requirements of the National Environmental Policy Act or NEPA, Commission
13 guidance that was provided to the staff with regard to its environmental review of
14 terrorism for Diablo Canyon and the staff's consideration of the risk of
15 environmental consequences.

16 NEPA requires that the staff take a hard look at the environmental
17 consequences of the terrorist attack and that the staff inform the public of its
18 review. The staff informs the public of the results of its environmental assessment
19 in two types of environmental documents.

20 If the staff determines that there are no significant environmental impacts,
21 the staff issues an environmental assessment and a finding of no significant
22 impact.

1 An environmental assessment is designed to be a brief document that
2 contains a summary of the staff's analysis and the basis for its finding of no
3 significant impact.

4 If on the other hand significant impacts are identified, those impacts are
5 subject to a more comprehensive review which is then documented in the
6 environmental impact statement.

7 As you noted, we received guidance from the Commission as to the manner
8 in which we should conduct our environmental assessment. Specifically, we were
9 advised to complete our environmental review within 90 days and to rely on
10 information that is available in Agency records to the extent practicable.

11 Further, the Commission advised the staff that it was appropriate to rely on
12 qualitative rather than quantitative considerations and to disclose as much
13 information to the public as possible while still protecting national security
14 information.

15 In assessing the environmental impacts of terrorism, the staff considered
16 the risk of environmental consequences. And in this manner the staff was
17 following the practice that's used in assessing the impacts of accidents.

18 Accidents like terrorist attacks are uncertain events with consequences that
19 are outside of normal operating conditions.

20 In looking at risk, the staff accounted therefore for the probability of an
21 attack as well as the potential consequences.

22 In assessing the probability of a terrorist attack, the staff considered the

1 enhanced security requirements that have been required since 9/11 and are
2 designed with the objective of preventing terrorist attacks, of insuring that attacks
3 are promptly detected and enhancing response capabilities.

4 Our security assessments are supported by our ongoing threat assessment
5 which is our analysis of intelligence information regarding the capabilities of
6 adversaries. Based on the current threat environment, the staff believes that the
7 probability that an attack will be attempted on the Diablo Canyon ISFSI is low.

8 Finally, the staff took into account the protective features of the HI-STORM
9 100 casks which will be used at the Diablo Canyon site. These casks have been
10 certified for general use by the NRC based on the fact that they have been
11 designed to meet strict requirements that are designed to ensure that these casks
12 can withstand severe accidents and severe natural phenomenon.

13 For example, these casks must be designed to withstand the impacts of
14 missiles driven by tornado force winds -- let me clarify when I say missiles I mean
15 things like automobiles that might be lifted and, for example, an automobile
16 traveling at 126 miles per hour.

17 Based on all of these factors, the enhanced security requirements, our
18 ongoing threat assessments and the protective nature of these casks, the staff
19 believes that the probability that a terrorist attack will be attempted, will be
20 successfully accomplished, and will result in any significant radioactive release is
21 very low.

22 Notwithstanding that finding, the staff also looked at the potential

1 magnitude of the consequences of a terrorist attack. And for that purpose the staff
2 calculated the dose to the nearest resident to the Diablo Canyon site for the
3 credible threat scenario that would have the greatest potential consequences.

4 And that calculation determined that the dose to the nearest resident would
5 be less than 5 rem. This dose, which is at this level, would not be expected to
6 cause any discernible health effects of any kind.

7 Based on our consideration of this very low probability that a terrorist attack
8 could be successful in releasing radiation from the casks and this assessment of
9 the potential magnitude of the release the staff concluded that there is no
10 significant risk of environmental consequences from a terrorist attack on the Diablo
11 Canyon ISFSI. And it's on that basis that we reached our finding of no significant
12 impact and issued our environmental assessment.

13 This analysis, which is explained in our environmental assessment,
14 demonstrates that the staff took the requisite hard look at the environmental
15 consequences of terrorism and on that basis we believe the Commission should
16 resolve this contention in favor of the staff.

17 That concludes my presentation.

18 CHAIRMAN KLEIN: Thank you. As I stated earlier, we will have
19 several rounds of questions. I drew the short straw so I get to start first and then
20 we'll go with Commissioner Jaczko, Commissioner Lyons and then Commissioner
21 Svinicki and then we will follow up with additional rounds if needed.

22 As I understand it, you're seeking a decision based on the merits and the

1 record as submitted; is that correct?

2 MS. CLARK: That's correct.

3 CHAIRMAN KLEIN: Is there any additional information you need to
4 submit to your knowledge?

5 MS. CLARK: No, I believe the record is complete at this point and
6 justifies the resolution of the contention in favor of the staff.

7 CHAIRMAN KLEIN: You had commented a little bit in your opening
8 statement about the environmental assessment compared to an environmental
9 impact statement. Would you elaborate a little bit more on the difference between
10 those two?

11 MS. CLARK: Yes. An environmental assessment as I said before is
12 designed to be a brief document that has a concise summary of the reasons for
13 the decision to support the finding of no significant impact.

14 The CEQ or the Council on Environmental Quality provides some guidance
15 on this suggesting that environmental assessment would typically be 10 to 15
16 pages in length.

17 An environmental impact statement is a much more comprehensive
18 document. Ordinarily, you would see a very comprehensive and detailed analysis
19 of all the potential environmental consequences and these can run, of course, on
20 the order of several hundred thousands of pages.

21 CHAIRMAN KLEIN: Thank you. In the staff brief on page 10, you
22 referenced the Second Circuit case where the City of New York vs. the

1 Department of Transportation. In this concern, radioactive waste transport through
2 the City of New York and the consideration of potential high consequences from a
3 low probability event.

4 Your brief indicated that the Court upheld DOT's calculation of risk, which
5 estimated possible consequences of a serious accident and discounted them on
6 the improbability of them occurring.

7 In that case, the Court also deferred DOT's decision not to address risk of
8 sabotage as too far afield. However, in your case you went ahead and looked at
9 low probability.

10 Could you talk a little bit about your reasoning about the Court's
11 methodology as it applies to this case?

12 MS. CLARK: If you can give me one moment, I'll refresh my
13 recollection of the case.

14 Yes, that case I think directly supports the approach that we've taken here
15 in which you look at the overall risk which accounts for the probability of an event
16 as well as the potential consequences.

17 And that's the approach that the staff has traditionally taken in assessing
18 consequences of events like accidents.

19 CHAIRMAN KLEIN: So, now that you have performed an analysis
20 that included the risk of terrorism then you believe that that is even more
21 applicable?

22 MS. CLARK: Yes, I believe so.

1 CHAIRMAN KLEIN: In the EA supplement, you had made the
2 comment that there was no risk of adverse environmental consequences and I
3 assume that's based on the 5 rem?

4 MS. CLARK: Yes, but also it's based on the low probability. So,
5 fundamentally our analysis is based first on the very low probability that a terrorist
6 attack would be successful in causing any significant release of radiation.

7 And then we also looked at the magnitude of potential consequences. And
8 those factors considered together led us to conclude that there is a very low risk of
9 any significant consequences whatsoever.

10 CHAIRMAN KLEIN: On your 5 rem at the site boundary just for
11 clarification was that a yearly or lifetime?

12 MS. CLARK: First, I should clarify that the 5 rem dose was
13 calculated for the nearest resident to the site. So, that resident is located on the
14 owner controlled area but is outside the site boundary. It's approximately one and
15 a half miles from the proposed ISFSI site.

16 CHAIRMAN KLEIN: Was that a lifetime exposure, the 5 rem?

17 MS. CLARK: Let me just check so I make sure I give you the correct
18 answer. Yes. It's a 50-year committed dose.

19 CHAIRMAN KLEIN: Thank you. And so based on that assessment,
20 was that your argument for why there was no significant latent health effects?

21 MS. CLARK: There would be no significant latent health effects at
22 that dose; correct.

1 CHAIRMAN KLEIN: As you go through and you did that analysis, I
2 assume your background documents justified all those calculations; is that
3 correct?

4 MS. CLARK: Yes.

5 CHAIRMAN KLEIN: And I assume that when you did those
6 calculations that it did include the probability of a terrorist attack? Or did you just
7 go through and assume what would happen?

8 MS. CLARK: That calculation was performed based on the
9 assumption that the terrorist attack is successfully completed. So, we did not
10 account for any mitigation by virtue of security measures.

11 We assume that the attack would be attempted, successfully completed
12 and that was for the scenario for which there would be the greatest potential
13 consequences.

14 CHAIRMAN KLEIN: Okay. Thanks. In the San Luis Obispo
15 Mothers for Peace position, they felt that your environmental assessment was
16 flawed because it did not include the economic cost of land contamination. Could
17 you comment on that?

18 MS. CLARK: Yes. We determined based on, as again, the overall
19 risk, based on the very low probability that there would be a significant release and
20 the potential consequences to offsite individuals that there would not be a
21 significant risk of environmental consequences.

22 And it's based on that determination that we determined and found that

1 there would be no significant impact. Because we reached our FONSI finding, we
2 did not do any additional analysis of impacts.

3 The type of analyses that one might see in an environmental impact
4 statement for example, calculating costs of cleanup from land contamination is the
5 kind of analysis that we would do after we make a determination that there are
6 significant impacts and therefore a full-blown environmental impact statement is
7 required.

8 CHAIRMAN KLEIN: Thanks. How did your dose estimate for the
9 staff for a supplemental terrorism analysis compare with the licensing dose of 5
10 rem at the controlled area boundary?

11 MS. CLARK: Well, at the controlled area boundary for design basis
12 accidents, the applicant is required to show that the dose would not exceed 5 rem
13 and our calculation for the offsite dose to the nearest resident would also satisfy
14 that same dose standard in that it would be less than 5 rem.

15 CHAIRMAN KLEIN: Okay. In your security analysis that you
16 basically went through, was based on intelligence estimate and threat
17 assessments; is that correct?

18 MS. CLARK: That's correct.

19 CHAIRMAN KLEIN: In one of the analysis you went through a
20 source term analysis for your postulated accident. Could you talk a little bit about
21 how you came up with your source term analysis?

22 MS. CLARK: I'm afraid that I cannot discuss source terms in a public

1 meeting. I think that all the specific information regarding source terms would be
2 protected.

3 CHAIRMAN KLEIN: Okay. When you looked at the 5 rem over a 50
4 year period could you talk a little bit about how that dose compares with radiation
5 workers; the limits that they can normally receive?

6 MS. CLARK: This is a very low dose. A 5 rem dose would satisfy all
7 of our regulatory requirements for worker doses. And in fact one would not expect
8 that at such a low dose that there would be any discernible health effects.

9 CHAIRMAN KLEIN: Okay. So, I assume when you reference all
10 those activities you included EPA, FDA regulations in terms of your decision that
11 there were no adverse environmental impacts?

12 MS. CLARK: Yes. I believe that -- our understanding is that at the 5
13 rem dose all -- the current thinking in health physics is that there would not be any
14 health effects of any kind including latent health effects at that dose.

15 CHAIRMAN KLEIN: Thank you. Commissioner Jaczko?

16 COMMISSIONER JACZKO: Maybe we can explore -- you spent a
17 lot of time in your statement talking about the role that risk played in coming to the
18 conclusion that there's no significant impact or the fact that you had a low
19 probability. Were there then scenarios that had lower probability and had higher
20 consequence that were excluded from the staff's consideration?

21 MS. CLARK: We came to the conclusion that there was low
22 probability for all potential scenarios that we considered. So, that was based on a

1 comprehensive assessment of all potential credible threat scenarios.

2 COMMISSIONER JACZKO: So, the scenario that the staff
3 considered then, was it the lowest probability scenario?

4 MS. CLARK: We selected the scenario that had the greatest
5 potential consequences without any regard to the probability of that particular one
6 as in relation to any other scenario.

7 COMMISSIONER JACZKO: So, risk played a role, but then it didn't
8 play a role, I guess is what you're saying?

9 MS. CLARK: Right. Risk played an overall role in basis that
10 fundamentally our FONSI is based on this low probability. But when we were
11 looking at the potential magnitude of consequences we made a conservative
12 determination by selecting the scenario with the greatest potential consequences
13 and not accounting for any mitigation.

14 COMMISSIONER JACZKO: So, if that scenario that you considered
15 had a higher probability would the staff have then said that there was not a
16 Finding of No Significant Impact?

17 MS. CLARK: We did not analyze probability in the context of any
18 specific scenario. We considered it generically across the spectrum of the
19 plausible credible threat scenarios.

20 COMMISSIONER JACZKO: Okay. So, I guess I still am not clear
21 what exactly the role of the risk played. What I heard was that 5 rem was
22 essentially what you came to for a conclusion when you looked at the scenario

1 that created the greatest consequences.

2 MS. CLARK: Correct.

3 COMMISSIONER JACZKO: So, is the decision for the Finding of No
4 Significant Impact based on the fact that the finding was 5 rem to the 50-year
5 committed dose to the nearest living individual or that all scenarios for terrorist
6 attacks had low probability of occurring?

7 MS. CLARK: It really was a combination of both because we believe
8 that when you're talking about events which are uncertain and outside of normal
9 operation you really should consider both factors.

10 COMMISSIONER JACZKO: So, it's possible then that there is an
11 event that could give you 5 rem and if it were a higher probability, from a NEPA
12 standpoint the staff would say that that could have a finding -- that that could
13 require an environmental impact statement?

14 MS. CLARK: I would say that aside from probability if you had a
15 dose of 5 rem that would not be a significant impact in the context of health
16 consequences to the public.

17 COMMISSIONER JACZKO: So, the risk really -- the probability
18 really doesn't matter then? That's really what you're saying?

19 MS. CLARK: I would say that if you were looking only at a 5 rem
20 dose that you could probably make that determination without regard to
21 probability.

22 COMMISSIONER JACZKO: Why didn't the staff do that then?

1 MS. CLARK: Well, we only took as what you might say a snapshot
2 in doing our 5 rem dose. We did look at the nearest resident who we believe
3 would be the maximally exposed member of the public, but we did not do a more
4 comprehensive dose analysis to look at other impacts.

5 And one of the reasons that we didn't think that was necessary was
6 because we knew that there was this low probability. So, when those two factors
7 were combined, we didn't believe there was any need to do further analysis in
8 order to reach our Finding of No Significant Impact.

9 COMMISSIONER JACZKO: So -- and I guess it's important in my
10 mind to go back to the contention that we have here. The contention is really
11 about whether or not we looked at all the consequences and all the factors.

12 So, it seems that as you indicated on the one hand the staff seems to be
13 arguing that 5 rem is the threshold and below that there's no issues. But then I
14 guess what I just heard you say was that there is the possibility that with -- if the
15 event had a higher probability that the staff might have done additional analysis to
16 review some of these other factors.

17 How is that not something that would be consistent with the contention in
18 looking at other factors beyond what the staff considered?

19 MS. CLARK: Well, that explains low probability is really the
20 foundation for the reason that it's not necessary for the staff to account for factors
21 like the expense of cleaning up land contamination.

22 If any release occurs, there will be some degree of land contamination and

1 conceivably the staff could undertake an analysis to determine what the range of
2 costs might be involved in doing that cleanup.

3 And with NEPA the matter is always a question of where does your analysis
4 need to stop because you could analyze everything forever if you were required to
5 look at absolutely every possible aspect of every possible environmental impact.

6 COMMISSIONER JACZKO: Maybe you could stop right there. I
7 only have four more minutes with this round of questions. So, what you're telling
8 me right now did the staff look at land contamination as a factor?

9 MS. CLARK: It did, but we did not analyze it in that kind of detail
10 because --

11 COMMISSIONER JACZKO: I'm sorry. What does it mean to look at
12 it but not analyze it in that kind of detail?

13 MS. CLARK: We considered land contamination because that is an
14 environmental impact and that is our obligation to do that under NEPA.

15 COMMISSIONER JACZKO: Can you point to me in the EA where
16 you did that and where in the reference documents you have that analysis?

17 MS. CLARK: We did not explicitly do an analysis of land
18 contamination. And the reason we did not analyze it was because of the low
19 probability that there would be any significant release and absent --

20 COMMISSIONER JACZKO: I'm sorry. So, you considered it, but
21 you didn't analyze it?

22 MS. CLARK: Correct.

1 COMMISSIONER JACZKO: Again, can you clarify to me what that
2 means?

3 MS. CLARK: That means that we know that there's a very low
4 probability that there will be a significant release of radiation from the casks.
5 Because of that, we know that there is not going to be a significant amount of land
6 contamination and that we believed was sufficient to complete our NEPA analysis.

7 COMMISSIONER JACZKO: Again, can you point to me where in the
8 EA you have data that an analysis that supports that there's no -- I think the
9 phrase used now is "significant impact" from land contamination?

10 MS. CLARK: That is based on the factors I discussed earlier; the
11 enhanced security measures, our knowledge of the threat environment and the
12 protective nature of the casks that will be used at the facility.

13 COMMISSIONER JACZKO: So, that tells you there's no significant
14 land contamination?

15 MS. CLARK: That tells you that even if a terrorist attack is attempted
16 that it is very unlikely that it would be successfully completed and result in any
17 significant release from the cask. Absent a significant release from the cask, there
18 cannot be any significant amount of land contamination.

19 COMMISSIONER JACZKO: And that is well documented in the EA.
20 So, again, you can point to me where in the EA that analysis is completed?

21 MS. CLARK: The discussion of probability is essentially where --

22 COMMISSIONER JACZKO: The discussion of the three factors and

1 why -- essentially, you're talking about the magnitude of the release. So the
2 magnitude of the release is of such a magnitude that the land contamination will
3 be minimal. That analysis the staff did.

4 MS. CLARK: That was a consideration that the staff did.

5 COMMISSIONER JACZKO: Did they do that analysis? Can you
6 show me a plot that shows the material deposition --

7 MS. CLARK: There's no quantitative analysis of land contamination
8 that we did. We based it on our assessment of the probability that there could be
9 a significant release.

10 COMMISSIONER JACZKO: Is that a difficult task for the staff to do
11 to complete that kind of an analysis?

12 MS. CLARK: Well, the actual analysis, if one were to project the
13 land contamination that could result and then calculate, for example, the economic
14 costs of cleanup, that requires using a code and actually it's the MACCS code
15 which I understand we would have to contract out. I don't believe the staff has the
16 capability to do that.

17 COMMISSIONER JACZKO: Has the staff ever used the MACCS
18 code?

19 MS. CLARK: Oh, it does. And it does do that analysis. It does do
20 that analysis when an environmental impact statement, when we believe that there
21 will be significant environmental impacts, the staff will, at its discretion, go ahead
22 and do that analysis. But that is a time-consuming -- it is an extensive analysis

1 that's done.

2 COMMISSIONER JACZKO: What kind of time are we talking about?

3 MS. CLARK: Let me check with my staff on that. Well, when part of
4 the time is involved in obtaining a contract, they think it would take months.

5 COMMISSIONER JACZKO: Months? Okay. Well, I'm out of time
6 for this round, but I guess I would perhaps follow up in the next round with some
7 additional questions. Thank you.

8 CHAIRMAN KLEIN: Commissioner Lyons?

9 COMMISSIONER LYONS: The San Luis Obispo Mothers for Peace
10 criticized the use of the hot spot code in the estimation of doses. Would you
11 comment on the applicability of the hot spot code in this particular application?

12 MS. CLARK: To the extent that I can, I know that the hot spot code
13 is widely accepted for conducting this type of analysis. It is not the most
14 sophisticated code that can be used, but the staff believes that it did provide a
15 reliable estimation of dose for this circumstance.

16 Unfortunately, I don't know personally the specifics of the code, so I'm not
17 certain how detailed I can make my answer.

18 COMMISSIONER LYONS: Do you know if in their view they would
19 view the hotspot code as providing a bounding -- an upper bound?

20 MS. CLARK: Let me check.

21 COMMISSIONER LYONS: An upper bound of the dose?

22 MS. CLARK: The staff tells me that they believe the hot spot code

1 would provide between a reasonable estimate and an upper bounding type of
2 estimate. They also point out that using any type of code for an airborne release
3 necessarily requires that there are a lot of uncertainties because one cannot know
4 the meteorological conditions that will exist at the time the release occurs.

5 They did use conservative assumptions in setting the meteorological
6 conditions, assumed that the nearest resident was directly downwind from the
7 Diablo Canyon ISFSI.

8 COMMISSIONER LYONS: Thank you. Perhaps this question was
9 asked in a slightly different way, but let me ask. Is the staff's analysis of terrorism
10 issues informed by information from the intelligence community?

11 MS. CLARK: Yes, it is.

12 COMMISSIONER LYONS: And in the staff's analysis and evaluation
13 of plausible scenarios does the staff include consideration of defensive and/or
14 mitigative measures that could be taken or would be taken by the licensee and
15 local, state and national authorities to limit the impact of any potential terrorist
16 action?

17 MS. CLARK: My understanding is that credibility was assessed
18 based on the staff's knowledge of threat information, which is intelligence
19 information which informs us of the capabilities of adversaries.

20 So, it's primarily based on what we know about our potential adversaries,
21 the kinds of weapons that they might use and that kind of information. And it's on
22 that basis that we determined that certain threat scenarios were remote and

1 speculative.

2 We only eliminated from our consideration threat scenarios that we
3 determined were remote and speculative and therefore would not be reasonably
4 foreseeable.

5 COMMISSIONER LYONS: Thank you. In the concerns of the San
6 Luis Obispo Mothers for Peace there are at least suggestions that the staff was for
7 some reason unable to consider the possibility of a zirconium fire.

8 Can you tell me is the staff familiar with the general concept of a zirconium
9 fire and has the staff considered zirconium fires in other completely separate
10 analyses that they have undertaken?

11 I'm not suggesting analyses relative to spent fuel casks, but other analyses
12 based on other threat scenarios?

13 MS. CLARK: Certainly, the staff is well aware of issues concerning
14 these types of fires. And I know that this issue has been raised in relation to spent
15 fuel pools.

16 The staff has been aware of Dr. Thompson's affidavits since the time we
17 issued our draft environmental assessment.

18 While we cannot specifically discuss the details of his threat scenario, I can
19 tell you that it does not alter the staff's conclusion that there would not be any
20 significant environmental consequences from a terrorist attack.

21 COMMISSIONER LYONS: When the staff calculated their upper
22 bound of dose of 5 rem it's my understanding that they considered a four day

1 exposure in addition to a 50 year committed dose.

2 Can you comment on how four days would compare to a conservative
3 estimate of evacuation times? In other words, is four days what we are
4 anticipating in this case for an evacuation time?

5 MS. CLARK: No, the staff's dose calculation assumed that the
6 individual would be exposed to radiation from inhalation and also from radiation
7 that has been deposited on the ground and assumes that the individual will be in
8 the same place for four days.

9 This is certainly not a realistic scenario if one assumes that a terrorist attack
10 actually occurs; that somebody will stay on the owner controlled site for four days
11 --

12 COMMISSIONER LYONS: So, the four days --

13 MS. CLARK: -- if the evacuation is recommended. But yes, our
14 dose did account for dose from land contamination over a period of four days.

15 COMMISSIONER LYONS: What I was really asking is then four
16 days is a very conservative upper limit to the amount of time that an individual
17 might choose to stay in the vicinity?

18 MS. CLARK: Yes, it is. Particularly in view of the fact that this
19 individual resides on land that is owned and controlled by the licensee.

20 COMMISSIONER LYONS: Thank you. Those are the questions I
21 have for now, sir.

22 CHAIRMAN KLEIN: Commissioner Svinicki?

1 COMMISSIONER SVINICKI: Thank you, Mr. Chairman. Ms. Clark,
2 if I return to the two elements of the contention as admitted by the Commission,
3 the contention talks about whether or not the environmental assessment ignored
4 environmental effects on the surrounding land and failed to consider nonfatal
5 health effects, for example, latent cancers from a hypothetical terrorist attack.

6 If we turn to each of those elements individually did the staff in preparation
7 of the environmental assessment consider environmental effects on the
8 surrounding land? And if so, how?

9 MS. CLARK: The staff in conducting its environmental reviews
10 always considers the impacts on health effects to members of the public and also
11 the impacts on land contamination.

12 The extent of the staff's consideration depends on the particular factors
13 relating to the events, whether they be accidents or terrorist events and the
14 particular site.

15 In this case because the staff determined that there's a very low probability
16 that there will be any significant release from the casks in the event of a terrorist
17 attack, the staff concluded that there would not be any significant impacts from
18 land contamination.

19 COMMISSIONER SVINICKI: In terms of its calculational approach
20 to dose, I do notice that staff's filing references the calculated radiological dose to
21 the maximally exposed member of the public offsite included the contribution
22 to dose from four days of exposure to contaminated land.

1 Were there considerations of the effect of contaminated land to dose
2 beyond that statement I just read?

3 MS. CLARK: That was the extent of the staff's evaluation in terms of
4 a quantitative assessment of the dose to land contamination.

5 COMMISSIONER SVINICKI: Okay. And if we return to the second
6 element of whether or not the environmental assessment failed to consider
7 nonfatal health effects, for example, latent cancers from a hypothetical terrorist
8 attack, does staff assert that it did consider nonfatal health effects?

9 MS. CLARK: It considered nonfatal health effects, yes, and
10 specifically for the dose that it calculated the staff concluded that at that low dose
11 level there would not be any discernible health effects of any kind from a dose of
12 less than 5 rem.

13 COMMISSIONER SVINICKI: In response to Commissioner Jaczko
14 you used a term or a description of staff's approach as a snapshot in doing the 5
15 rem dose. I'm corrected that the staff used the term snapshot, but you referenced
16 it here.

17 Is it your position that the requisite hard look that is required under NEPA is
18 satisfied even with that snapshot approach?

19 MS. CLARK: Yes. And this is because we really are looking at the
20 overall risk. And fundamentally risk is a function not only of the consequences, but
21 of the probability.

22 And in this case, the staff believes there is a very low probability that a

1 terrorist attack could result in any significant radiological release.

2 COMMISSIONER SVINICKI: If we could turn to the notion of
3 probability and the staff's approach to probability for a moment, you referenced in
4 your opening statement that the staff was considering Commission discussion of
5 the appropriateness of using a qualitative approach to probability if a quantitative
6 approach was not appropriate or was not possible.

7 Can you describe in a bit more detail how staff took that Commission
8 instruction or commentary on the use of a qualitative approach to probability?
9 How was that factored into staff's analysis and preparation of the EA? If a
10 probability cannot be quantified how did staff assess probabilities qualitatively?

11 MS. CLARK: The staff believes that it is possible to come to an
12 assessment of probability that is reliable even if it's qualitative in nature.

13 We are, of course, accustomed here to assigning numbers to probability,
14 but the staff believes that even if we are relying only on qualitative considerations
15 we can nevertheless reliably assess the probability of an event such as a terrorist
16 attack.

17 COMMISSIONER SVINICKI: Would it be fair to say that one of the
18 methods for qualitatively determining probability by staff would have been the use
19 of expert judgment?

20 MS. CLARK: Absolutely.

21 COMMISSIONER SVINICKI: Did the staff distinguish between the
22 probability of an attack and the probability of a successful attack in calculating

1 dose and other analysis that it conducted for the environmental assessment? And
2 if so, how did it go about distinguishing between those two?

3 MS. CLARK: Staff determined the probability that an attack may be
4 attempted based on its knowledge of threat information and its knowledge of
5 security measures that are in place.

6 There are, of course, security measures that are specifically designed to
7 prevent terrorist attacks from happening in the first place. Even, however, if an
8 attack is attempted, the staff then accounted for security measures that are in
9 place to promptly detect an attack and insure that there is a prompt response.

10 And furthermore, the staff accounted for the fact that even if an attack is
11 attempted and say it is even successfully accomplished notwithstanding the
12 security enhancements that these HI-STORM 100 casks provide a very robust
13 protection to the spent fuel.

14 And when all those factors are considered together the staff concluded that
15 the overall probability of a release would be very low.

16 COMMISSIONER SVINICKI: How would you respond to an
17 assertion that the NEPA hard look requires staff to consider land contamination in
18 and of itself not as it just contributes to human dose? How do you respond to that
19 assertion? Is it your view that the NEPA hard look does not require that?

20 MS. CLARK: We agree that the NEPA hard look requires the
21 consideration of land contamination. It is an environmental impact and the staff is
22 required to consider that in its NEPA review. And the staff did account for land

1 contamination aside from its contribution to dose.

2 However, because we believe that there's a very low probability that there
3 could be any significant land contamination from a radiological release we do not
4 believe any further quantitative type analysis was necessary. And it was on that
5 low probability finding that we based our Finding of No Significant Impact.

6 COMMISSIONER SVINICKI: Is it your view that there's a difference
7 between a dose that is acceptable under the Atomic Energy Act safety standards
8 and one that is considered not significant under NEPA?

9 MS. CLARK: The staff does not apply any particular dose threshold
10 in its analysis of environmental impacts; however, we do know that the dose that
11 we calculated here, which is below 5 rem, that that would not be expected to
12 cause any health effects and therefore – or discernible health effects I should say
13 and therefore that would not be in itself a significant dose.

14 COMMISSIONER SVINICKI: I believe in response to an earlier
15 question about was it a lifetime dose that was calculated at less than 5 rem the
16 answer was that it was a 50-year dose. Can you give me the basis of having
17 chosen the 50-year dose? Is there some standard for that?

18 MS. CLARK: I believe there is. Let me check with my staff. I'm told
19 that the NRC regulations normally have the staff consider a 50-year committed
20 effective dose.

21 COMMISSIONER SVINICKI: Okay. Thank you, Mr. Chairman.

22 CHAIRMAN KLEIN: I just have a summary comment and question.

1 As we looked at Contention 2 as admitted, it was whether the staff's environmental
2 assessment adequately considered land contamination and latent human health
3 effects that might ensue from the kind of terrorist attacks that the staff considered
4 plausible. That is the contention.

5 Obviously, you have submitted a lot of written documentation. Do you
6 believe your analysis is sufficient for us to make a judgment on that contention?

7 MS. CLARK: Yes. We believe that based on our written
8 submissions the admitted contention should be resolved in favor of the staff
9 because we have demonstrated that we have taken the requisite hard look under
10 NEPA at the consequences of a terrorist attack.

11 CHAIRMAN KLEIN: Thank you. Commissioner Jaczko?

12 COMMISSIONER JACZKO: A couple more questions. I wanted to
13 follow-up on a point that Commissioner Lyons had raised about the scenario
14 considered by the interveners in this case.

15 I think you indicated that that scenario does not alter the conclusions of the
16 staff of finding of no significant impact. And again, I know this is something you're
17 reluctant to discuss. So, I'll try and stay, I think, around the right framework for
18 this.

19 There's two factors that you've indicated are relevant for the staffs' finding
20 of no significant impact: probability of occurrence and consequences.

21 For the zirconium fire can you tell me whether or not it was the probability
22 considerations or the consequence that led to the staff not believing that that

1 would not alter the findings? Or a combination of both, I guess could be one of
2 those possibilities.

3 MS. CLARK: I would say that for considering specific scenarios,
4 threat scenarios, the staff again did not analyze any specific scenario for
5 probability.

6 What the staff looks at is whether the scenario is credible and that is based
7 on our analysis of threat information which informs us what the capabilities of our
8 adversaries have. And, of course, our analysis of the nature of the release and
9 how it will behave in the environment.

10 So, I would say in analyzing, if presented with a threat scenario those are
11 the factors that we would look at. Is this credible based on our knowledge of
12 intelligence information? And is the source term something that we agree with?

13 COMMISSIONER JACZKO: So, I guess for this particular case --
14 and I would categorize source term as the consequences and I guess credibility
15 towards the probability side. Again, those two factors in different words. So, in
16 this particular case which was it? Both? Did the staff analyze this scenario at all?

17 MS. CLARK: I'm afraid I can't answer those questions.

18 COMMISSIONER JACZKO: Can you explain to me why you can't
19 answer that?

20 MS. CLARK: Because I cannot discuss anything that concerns what
21 scenarios the staff considers credible and I cannot discuss anything that concerns
22 source terms.

1 COMMISSIONER JACZKO: Okay. Well, I guess at some point, I
2 think, probably as the staff is aware, the Commission has been -- in its order did
3 indicate that the Commission would be looking at all these things. We'll have to
4 figure out a forum and a way, then, for that information to get transmitted to the
5 Commission.

6 MS. CLARK: Absolutely.

7 COMMISSIONER JACZKO: That is something that the Commission
8 has said we want to look at. I want to go back again if I could just to some of
9 these issues with land contamination. Maybe I can better understand some of the
10 thinking and the analysis of the staff.

11 Apparently, as I think you've articulated, the idea with the land
12 contamination is that the staff looked at the probability of the successful -- of the
13 likelihood of a successful terrorist attack with a significant release. And that
14 probability is low.

15 So, for that reason the staff only looked at land contamination in a very high
16 level way, I guess is what I understand. When the staff calculated the ground
17 shine, which is one of the factors that led to the 5 rem does, how did the staff
18 determine what the ground shine was?

19 MS. CLARK: Let me see if I can get an answer from my staff. I'm
20 told that the hot spot code has a feature that accounts for the dose from the
21 contribution from ground shine. And so the staff applied that portion of the hot
22 spot code.

1 COMMISSIONER JACZKO: So, it wasn't that the staff didn't
2 necessarily model the material deposition directly? It's part of a feature of the
3 code that it tells you ground shine, but it doesn't necessarily tell you anything
4 about -- it tells you ground shine -- the effect of ground shine -- not necessarily
5 what you would expect to see from effects on other elements of the environment
6 from that particular material deposition?

7 MS. CLARK: That's correct.

8 COMMISSIONER JACZKO: I want to go back to this issue of an
9 important point, I think, that the staff raises this idea that the probability was low
10 enough that the staff didn't need to consider or that led to the finding of no
11 significant impact in this particular case.

12 Again, can you point me in the EA to a specific discussion or a specific
13 reference where the staff talks about that as a standard that the Commission has
14 or that there is a particular probability threshold that the Commission uses in that
15 case somewhere that you can point me to?

16 MS. CLARK: I don't believe there is a specific reference to any
17 threshold that the staff referred to. And I believe as a general matter that when we
18 perform environmental reviews it really is done on a case by case basis.

19 COMMISSIONER JACZKO: In this case, where is that analysis in
20 this particular case?

21 MS. CLARK: You would find the discussion of probability in our
22 discussion of the enhanced security requirements -- the protective features of the

1 cask.

2 COMMISSIONER JACZKO: Point to me in the EA where that is.

3 MS. CLARK: Just a minute.

4 COMMISSIONER JACZKO: Maybe I can beat you to it.

5 MS. CLARK: In general, it begins --

6 COMMISSIONER JACZKO: Which page are you on?

7 MS. CLARK: Section 3.0. I'm on page 4. And section 3.0 is entitled

8 NRC Security Requirements for Independent Spent Fuel Storage Installations.

9 COMMISSIONER JACZKO: I'm sorry. So, I'm looking at the EA
10 Section 3.0?

11 MS. CLARK: Yes.

12 COMMISSIONER JACZKO: This is the final EA? Okay. And
13 maybe you can give me the reference and I can always confirm that later.

14 MS. CLARK: It begins on Section 3.0; 3.1 -- Section 3.1 discusses
15 specific security considerations and it discusses --

16 COMMISSIONER JACZKO: Hold on.

17 MS. CLARK: I'm sorry.

18 COMMISSIONER JACZKO: Okay. Thank you. Now I have it.
19 Thank you. Okay. I'm sorry.

20 MS. CLARK: Okay. And then Section 3.2 discusses requirements
21 for ISFSIs. In that section we state that NRC security requirements are directed at
22 assuring terrorists cannot successfully carry out an attack against an ISFSI.

1 COMMISSIONER JACZKO: I guess what I'm looking for is
2 information that tells me that low probability and here you haven't told me what the
3 probability is, you told me you can't calculate it, but something that says for a low
4 probability that means no significant impact.

5 MS. CLARK: I direct you to page 6 under Section 4.0. At the bottom
6 of page 6 it states that "the probability of such an attack is believed to be low."

7 COMMISSIONER JACZKO: That's a statement not an analysis.

8 MS. CLARK: Yes.

9 COMMISSIONER JACZKO: Can you show me an analysis where the staff
10 provides an analysis that says that this probability is below threshold. For
11 instance, in another guidance documents particularly with aircraft impacts, under
12 staff guidance, if the probability in an accident context, in the accident of an aircraft
13 impact if that is below probability of one times 10 to the minus six then in the
14 Atomic Energy Act space and the safety space the staff is not required to do an
15 analysis of what that aircraft impact is.

16 Can you point to me an analysis where we have in this EA made a similar
17 discussion about that there is a threshold level for probability for which it is
18 automatically a finding of no significant impact?

19 MS. CLARK: The staff has not made that analysis and this is
20 primarily because we don't believe that the probability of a terrorist attack can be
21 quantified in any way.

22 COMMISSIONER JACZKO: But it's low?

1 MS. CLARK: It's very low.

2 COMMISSIONER JACZKO: How can you talk about a probability
3 that's very low that you can't quantify? I don't know what that means.

4 MS. CLARK: Well, when we're relying on qualitative considerations
5 we're basically coming to an informed judgment as to the overall probability of an
6 event.

7 COMMISSIONER JACZKO: So, you can calculate the overall
8 probability of the event?

9 MS. CLARK: Well, the ultimate conclusion is the probability that a
10 terrorist attack will be attempted, successfully completed and results in a
11 significant release of radiation. And the staff believes that as a qualitative matter
12 the probability of that can be accomplished is very low.

13 COMMISSIONER JACZKO: But you can't tell me what it is?

14 MS. CLARK: No.

15 COMMISSIONER JACZKO: Is it less than one in a million?

16 MS. CLARK: I don't think we could even try to equate it to a
17 quantitative --

18 COMMISSIONER JACZKO: How can you tell me it's very low then?

19 MS. CLARK: Well, that's based on our informed expert judgment.

20 COMMISSIONER JACZKO: Probability -- tell me what a probability
21 is that's not a number?

22 MS. CLARK: I'm sorry. I guess it's when you're talking in qualitative

1 terms and you have --

2 COMMISSIONER JACZKO: You're talking about a likelihood then,
3 not really a probability?

4 MS. CLARK: I'm not sure. My staff I know is --

5 COMMISSIONER JACZKO: The EA says probability.

6 MS. CLARK: I know my staff is much more comfortable talking
7 about probability as opposed to likelihood. I don't pretend to really be clear as to
8 the distinction between those two myself. But they do talk in terms of probability.
9 Again, we don't believe this --

10 COMMISSIONER JACZKO: But they can't quantify the probability?

11 MS. CLARK: They cannot. They don't believe this can be
12 quantified. And so, it would --

13 COMMISSIONER JACZKO: How can they calculate a probability?
14 I'm confused by if you can't quantify it, how can you tell me it's low as a
15 probability?

16 MS. CLARK: Well, you have to use your judgment. The staff, of
17 course, is extremely familiar in dealing with probability in quantitative terms.

18 So, it's not, I don't think, a stretch for the staff to say we know how to deal
19 with probability. We evaluate it all the time. We know the thresholds that we
20 require in safety space.

21 COMMISSIONER JACZKO: You just told me you can't evaluate it
22 here.

1 MS. CLARK: Right. But we're very comfortable and we understand
2 how to deal with probability. We understand how to evaluate it in quantitative
3 terms.

4 This is going to take us outside of that familiar space, but I think that the
5 staff's judgment based on their experience dealing with probability is such that
6 they can say, "Well, I can't give you a number. I do believe that this is very low."

7 COMMISSIONER JACZKO: So, we are down to the staff's decision
8 being based on a belief that this isn't probably going to happen -- isn't likely to
9 happen?

10 MS. CLARK: It's based on their expert judgment. It's based on
11 qualitative assessment of probability because it's just not possible to come to the
12 kind of quantitative numbers that we are accustomed to using for nuclear facilities.

13 COMMISSIONER JACZKO: Okay. I don't have any more questions
14 at this point. I appreciate the answers.

15 COMMISSIONER LYONS: I've no further questions, Mr. Chairman.

16 CHAIRMAN KLEIN: Commissioner Svinicki?

17 COMMISSIONER SVINICKI: Thank you. Ms. Clark, if I return as a
18 follow-up to my earlier question regarding the staff's use of probability qualitatively,
19 is it your view that NEPA case law supports the staff's approach of determining
20 and using probability in a qualitative fashion?

21 MS. CLARK: Yes.

22 COMMISSIONER SVINICKI: And just for a comparative, how do the

1 dose consequences in the EA of the less than 5 rem compare to the doses
2 associated with design basis accidents at the proposed Diablo Canyon ISFSI?

3 MS. CLARK: Under the Commission's regulations the design basis
4 accidents cannot result in a dose beyond 5 rem. So -- and, of course, our analysis
5 was that the dose to the nearest resident would be less than that limit.

6 COMMISSIONER SVINICKI: And just to follow up to the questions
7 of Commissioner Jaczko you responded that staff is comfortable in dealing with
8 probabilities quantitatively and that's something familiar to them and that this EA
9 analysis took them somewhat outside of that comfortable space.

10 But I think you were also beginning to answer that this is not unheard of or
11 unusual for staff to have to assess probabilities qualitatively in other licensing
12 actions or in safety analysis. This is not an entirely unique circumstance is there
13 use of probabilities qualitatively in this case?

14 MS. CLARK: Yes, I would agree with that.

15 COMMISSIONER SVINICKI: Thank you. Thank you, Mr. Chairman.

16 CHAIRMAN KLEIN: Thank you very much for the presentation.

17 We'll now move to hear from PG&E.

18 COMMISSIONER JACZKO: Mr. Chairman, can I ask just one
19 follow-up question?

20 CHAIRMAN KLEIN: Just one quick one.

21 COMMISSIONER JACZKO: In other circumstances where staff has
22 done qualitative looks at probability have they provided a number?

1 MS. CLARK: In qualitative? I think that by definition they don't
2 provide numbers for qualitative evaluations.

3 COMMISSIONER JACZKO: So, can you give me an example of a
4 situation where you have done a qualitative analysis of probability?

5 MS. CLARK: Perhaps I can check with my staff. One moment. One
6 example that I was provided was under Part 70 for our integrated safety analysis
7 that we are required to review, I understand that there are not necessarily
8 quantitative thresholds that the staff applies.

9 COMMISSIONER JACZKO: Did the staff reference that in the
10 reference documents for the development of the EA?

11 MS. CLARK: No, it did not.

12 COMMISSIONER JACZKO: Thank you. I don't have any other
13 questions.

14 CHAIRMAN KLEIN: Thank you. We'll now move on and hear from
15 PG&E. Thank you.

16 MR. REPKA: I'm David Repka. I'm counsel for PG&E. Behind me I
17 also want to introduce Mr. Gerald Strickland who is the project manager for the
18 Used Fuel Project at Diablo Canyon and Mr. Mark Mayer, who is a reactor
19 engineering supervisor responsible for accident analysis and dose consequence
20 analysis at Diablo Canyon.

21 They're the affiants in our written filing and with them is Mr. Terry Grable,
22 who is the NRC's licensing manager for the Used Fuel Project.

1 I wanted to reserve one minute for reply, so I have a very brief time and I'll
2 try to be as brief as possible.

3 Chairman Klein, as you've already observed a couple of times this morning
4 Contention 2 is a very limited issue related to land contamination and long-term
5 health consequences.

6 I think it's very clear from the written filings today that the Mothers for Peace
7 want to continue to raise the issue of a zircalloy fire, a terrorist-induced zircalloy
8 fire and the Commission has already ruled several times that the plausibility of that
9 scenario is not a contention that's before us.

10 We have not made any attempt to build a record on that point because it's
11 really outside the scope of the contention, but I do want to point out that the
12 scenarios that Mothers for Peace and Dr. Thompson have discussed related to
13 zircalloy fire in wet storage are very different as a technical matter from the
14 hypothesis of a zircalloy fire in dry cask storage where the dry cask storage is
15 storing fuel that's been aged and decay heat has been reduced over a period of
16 time. So, they are very different from a technical perspective.

17 Having said that I want to move on to what specifically is the issue in
18 Contention 2 and the issue of land contamination and long-term health effects and
19 summarize just a very few of the key points in our written filings.

20 First, as the staff has observed already the dry cask storage system to be
21 employed at Diablo Canyon is a very robust engineered structure supported by a
22 thorough licensing analysis. That's depicted visually in Exhibit 1 in our filing.

1 Second, as a generic matter a five 5 rem total effective dose standard,
2 which is very comparable to what the staff used to calculate for a dose in a
3 hypothetical terrorist scenario is actually a very common proxy for insignificant or
4 acceptable consequences and that implicitly includes long-term health effects and
5 land contamination effects of releases that would create that 5 rem dose.

6 That's embodied in NRC regulations such as the design basis safety
7 standard of 10 CFR 72.106(b). Indeed, as we've also pointed out Regulatory
8 Guide 8.29 does demonstrate that a 5 rem exposure equates to only a very small
9 increase in long-term health effects such as long term cancer risk.

10 Third, the staff's analysis does not credit any protective actions to mitigate
11 the consequences, but as a matter of fact mitigation actions are available and
12 could be provided that would further reduce the dose.

13 For example, evacuation and sheltering could reduce the dose consistent
14 with the EPA's protective action guidelines.

15 Fourth, it's very instructive to look at the site characteristics of the Diablo
16 Canyon site which are fairly unique in the nuclear industry. As shown in Figure 2
17 in our filing, this is an area of very low population density. Over half of the 10-mile
18 radius is over open water. The nearest offsite population centers are over 5 miles
19 away.

20 These factors certainly reduce total population dose projected in any
21 accident consequence analysis and would reduce any projected relocation cost or
22 land contamination costs.

1 As shown in Figure 4 of our written filing, the property surrounded by Diablo
2 Canyon owned by PG&E is also very large compared to other sites. It's a
3 760-acre site. It's the area shown in Figure 4 by the gray line, long rectangular
4 space along the coast.

5 That owner controlled area creates a buffer zone in which the licensee can
6 control the property to ensure that there will be no activities in the area following
7 an event that could lead to significant long-term health risks.

8 As the staff has pointed out several times their analysis of a dose to a
9 resident at 1.4 miles that resident is within the PG&E owner controlled area.

10 As also shown in Figure 4, the land within a 5-mile radius is largely
11 nonproductive land with use limited to some grazing and limited farming. The
12 farming is also on PG&E property. So, that's shown as the light green and aqua
13 areas in that drawing.

14 So, these factors again reduce possible health effects and reduce the
15 likelihood of any significant land contamination costs.

16 Even if we have the release on the order of what the staff has calculated,
17 land contamination and health effects would be negligible.

18 To summarize, the staff calculated the dose to the nearest resident at
19 1.5 miles. The staff pointed out in their EA and in their filing that using Diablo
20 Canyon specific meteorological data would reduce those doses even further below
21 5 rem.

22 Next, emergency protective actions would further reduced doses. And with

1 respect to Contention 2 the small early doses calculated at 1.5 miles would not
2 lead to any significant latent health affects or land contamination off site.

3 Also, the staff acknowledged that Diablo Canyon specific fuel
4 characteristics would reduce source terms and therefore the doses below what
5 they calculated.

6 So, what we have is a very conservative estimate of dose consequences
7 and given those releases the contention can be resolved with the finding that any
8 long-term health effects would be negligible and land contamination cost would be
9 negligible.

10 The staff has fully met the intent and purpose of NEPA and has met the
11 mandate of the Ninth Circuit Court of Appeals. The staff is certainly entitled under
12 NEPA case law to rule out scenarios that are remote and speculative and
13 Contention 2 can be resolved.

14 CHAIRMAN KLEIN: Thank you, Mr. Repka. You had indicated that
15 your casks are robust. Does that mean that no significant release is plausible?

16 MR. REPKA: They are robust and we do not believe that significant
17 releases are plausible. We don't have access to the staff's threat assessment and
18 intelligence assessment, so we don't know what they did on that particular point.

19 There is a safety analysis to meet 72.106(b) that assumes leakage from the
20 cask, but that's non-mechanistic. It's an assumption without an initiating event.
21 So, we think you could conclude that no release is plausible.

22 CHAIRMAN KLEIN: When you looked at the placement of the ISFSI

1 did you look at potential terrorist attacks in minimizing that when you looked at the
2 location?

3 MR. REPKA: In choosing the location on the site that was not
4 specifically a consideration that was made at the time. The site for the ISFSI was
5 selected in late 1990s and that wasn't a specific consideration.

6 However, the site is subject to NRC ISFSI security orders and has met all
7 NRC requirements for an ISFSI.

8 CHAIRMAN KLEIN: When you also looked at the location did you
9 look at potential land contamination if there was a release?

10 MR. REPKA: Again, I don't believe that was a specific issue that
11 was contemplated in siting the ISFSI, but certainly the reality is, is given the site
12 and the extent of property controlled by PG&E the potential for offsite land
13 contamination is certainly very minimal.

14 CHAIRMAN KLEIN: Is the NEPA inquiry over if we conclude the
15 potential doses are within regulatory limits?

16 MR. REPKA: I believe it is if you can find that a terrorist scenario is
17 a remote and speculative scenario and I believe that the staff is saying that in their
18 EA supplement. We don't have a lot of the specifics of what the basis for their
19 conclusions are given that it's security information, but we believe that to be the
20 case.

21 CHAIRMAN KLEIN: Based on the staff's calculations and of the
22 dose limits, do you believe that the land contamination and harm to human health

1 is minimal?

2 MR. REPKA: Yes.

3 CHAIRMAN KLEIN: I have no further questions. Commissioner
4 Jaczko?

5 COMMISSIONER JACZKO: How much of a factor did remote and
6 speculative play into staff's determination of no significant impact here?

7 MR. REPKA: Again, I can't speak to what the staff considered in
8 their analysis. I certainly can speak to what has been hypothesized by the
9 Mothers for Peace. I think we would be comfortable with characterizing those
10 scenarios as remote and speculative.

11 COMMISSIONER JACZKO: So, their scenario is remote and
12 speculative, but the staff's not necessarily? You also said that you believe given
13 the casks that no release is possible. Was that a correct statement?

14 MR. REPKA: That's correct.

15 COMMISSIONER JACZKO: The staff did consider a scenario in
16 which there was a release that they viewed to be plausible. So, you disagree with
17 the staff's interpretation that there is a plausible release scenario?

18 MR. REPKA: Yes. Again, I qualify and I would qualify my remarks
19 by saying that we are not familiar with the specific scenarios and don't have
20 access to the threat assessment information and intelligence information that the
21 staff presumably does.

22 However, given a qualitative sense of the relative attractiveness or lack

1 thereof of the target, the robustness of the structures, we certainly believe that
2 qualitatively you could justify a conclusion that an attack at that site is remote and
3 speculative.

4 COMMISSIONER JACZKO: One of the issues that I think certainly
5 the Ninth Circuit weighed in on was NRC's arguments about remote and
6 speculative. So, I don't know that that's necessarily a factor that people want to
7 rely on too much.

8 I guess this is in the supplement to your brief or actually I guess it's on the
9 actual brief on page 13. You talk about preventive actions that can be taken;
10 transfer dairy cows from -- this is page 13 at the top of it.

11 You talk about preventative actions that would also limit exposures, transfer
12 of dairy cows from fresh forage to uncontaminated stored feed and diversion of
13 whole milk potentially contaminated with short-lived radio nuclides.

14 Can you point to me somewhere in the EA where the staff references this
15 kind of a discussion and talks about these kind of preventive measures?

16 MR. REPKA: I think the staff in the EA says that they don't take
17 credit for any of those measures and I think what we're saying and what we're
18 adding to the record is that these things are possible and in fact planned for and
19 could further reduce doses.

20 COMMISSIONER JACZKO: Would it be your position that the EA
21 should be supplemented to include this type of information?

22 MR. REPKA: I'm not saying that that's necessary, but it certainly

1 could be based upon this information and the record of this proceeding being part
2 of the NEPA record of decision.

3 COMMISSIONER JACZKO: In your opinion if the Commission were
4 to supplement the EA what would be the best way to do that?

5 MR. REPKA: I think that the staff -- the Commission could
6 supplement the EA to simply point out some of the factors that we've pointed out
7 that further show the conservatism of the staff's analysis and show that the
8 potential for land contamination and long-term health effects is minimal even if you
9 assume the event.

10 COMMISSIONER JACZKO: I don't have any other questions at this
11 point. Thank you.

12 CHAIRMAN KLEIN: Commissioner Lyons?

13 COMMISSIONER LYONS: Does PG&E then concur with the staff's
14 view that doses below 5 rem do not result in significant health effects,
15 environmental impacts or economic losses?

16 MR. REPKA: Yes, we do and we believe that's supported by Reg
17 Guide 8.29 by the position of the Health Physics Society and other authorities.

18 COMMISSIONER LYONS: What forms of communication or
19 notification are available for nearby residents?

20 MR. REPKA: In terms of the emergency plan, there's the prompt
21 notification system, the siren system. Beyond that, what other kinds of special
22 notifications, I'm not familiar off the top of my head.

1 The nearest special populations like schools are all beyond 5 miles from the
2 site. So, it's not a particularly complicated emergency planning situation given the
3 size and the nature of the surrounding area.

4 I would just add to that I think there were some questions earlier about
5 evacuation and the feasibility and the relative time for that. The evacuation time
6 estimates for Diablo Canyon are for the 5 mile zone, for example, are on the order
7 of 2.75 hours as compared to the four days that the staff was assuming.

8 COMMISSIONER LYONS: That was precisely going to be my next
9 question as to how conservative in your view the four day estimate which staff
10 utilized might be and your statement was 2.75 hours estimate evacuation versus
11 four days actually used in the calculation?

12 MR. REPKA: That's correct and that would be for the 5-mile radius
13 sector in the E-Plan. I think if you pushed it to 6 miles, which would include the
14 town of Avila Beach, it goes to 3.25 hours. So, the four days is very conservative.
15 Again, it's not a very densely populated area.

16 COMMISSIONER LYONS: And the 5 rem calculation from the staff
17 not only was based on four days, but for which population was that calculation
18 done?

19 MR. REPKA: That calculation was for the nearest resident at 1.4
20 miles or 1.5 miles which is on PG&E property. So, that person would presumably
21 be evacuated.

22 COMMISSIONER LYONS: Thank you. Those are the questions I

1 had.

2 CHAIRMAN KLEIN: Commissioner Svinicki?

3 COMMISSIONER SVINICKI: Thank you. Mr. Repka, PG&E in its
4 filings asserts that NEPA does not require the staff to use a particular scientific
5 methodology. Referring specifically to page 10, the foot note states that "the NRC
6 has not traditionally discussed the environmental impacts of severe accidents in
7 quantitative terms."

8 And I believe you quote in your filing from NUREG 1437, which is the
9 generic environmental impact statement for license renewal, the following quote:
10 "NEPA does not require that we decide whether an environmental assessment is
11 based on the best scientific methodology available, nor does NEPA require us to
12 resolve disagreements among various scientists as to methodology."

13 NEPA does require however that the staff take a hard look at assessment
14 that I talked to the staff counsel about. In your view, does the staff's analysis
15 satisfy the NEPA hard look standard?

16 MR. REPKA: Absolutely. It does that by calculating a dose for a
17 presumed event and that's a perfectly acceptable metric as compared to the
18 metrics used in the NRC's regulations for safety analyses.

19 COMMISSIONER SVINICKI: Your filings also talk about the cask
20 design and its robustness. Can you describe for me what you believe to be the
21 nexus between the cask design and its robust nature and the contention as
22 admitted by the Commission?

1 MR. REPKA: I think the robust nature of the cask design really goes
2 to the presumption of the attack in the first place and the ultimate success of the
3 attack.

4 It's a factor that goes to the probability of a release not directly related to
5 what the release should be measured in or whether the contention being whether
6 the staff has to consider health effects or land contamination. So, it's not a direct
7 correlation, but it's certainly a factor that adds to the context of the analysis.

8 COMMISSIONER SVINICKI: In your experience in assessing the
9 record that's been built in this proceeding would you assert that the use of -- the
10 assessment of probabilities in a qualitative sense and a quantitative sense was
11 atypical or typical of the use of probability in a qualitative sense in nuclear
12 licensing matters?

13 MR. REPKA: I think in a traditional safety analysis context or a
14 severe accident analysis context the staff has tended to a more quantitative
15 analysis because those kind of events can be quantitatively analyzed, but as the
16 NRC has said throughout the history of this contention in this proceeding terrorist
17 attacks are not something that can be quantified.

18 And so, in this context I think it's perfectly acceptable and if you compare
19 what other agencies have done in their NEPA analyses of the terrorist scenario
20 issue like the Department of Energy or the Department of Defense a qualitative
21 assessment of probability or likelihood of events is not at all uncommon.

22 COMMISSIONER SVINICKI: I would ask you then the same

1 question that I asked the staff's counsel. In your view does NEPA case law
2 support the staff's approach of determining and using probability qualitatively for
3 the EA? Is that approach supported in NEPA case law?

4 MR. REPKA: Yes, we believe it is.

5 COMMISSIONER SVINICKI: In PG&E's filings they also assert that
6 a low early dose of 5 rem -- this is quoted -- "implicitly reflects that there would be
7 no significant land contamination or long-term human health effects."

8 Can you explain how that implicitly reflects that there would be --
9 specifically, I'm turning on the word "implicitly". How does that implicitly reflect
10 that?

11 MR. REPKA: Because the calculation of dose reflects the nature of
12 the release at least at some level you can conclude that a release that would
13 cause that kind of dose would also not cause long-term health effects or land
14 contamination. I think it allows you to assess in a backward direction what the
15 release being considered is.

16 COMMISSIONER SVINICKI: Does PG&E agree with the staff's
17 conclusion that health effects of a 5 rem dose are too small to be observed or are
18 nonexistent?

19 MR. REPKA: Yes, we agree with that.

20 COMMISSIONER SVINICKI: And returning to the mitigating
21 measures that Commissioner Jaczko referred us to earlier on the top of page 13, I
22 would ask the question whether or not the EA can be supplemented to include

1 consideration of those preventive actions.

2 In your view does the EA need to be supplemented in that manner in order
3 to satisfy the NEPA hard look requirement?

4 MR. REPKA: I don't believe it needs to be supplemented, but it
5 certainly can be.

6 COMMISSIONER SVINICKI: Okay. Thank you. Thank you,
7 Mr. Chairman.

8 CHAIRMAN KLEIN: Thank you very much. I don't believe there are
9 any further questions. We'll now take a five minute break and then hear from San
10 Luis Obispo Mothers for Peace. Thank you.

11 (Break taken)

12

13 CHAIRMAN KLEIN: I think it's now live. I've been advised that our
14 five minute break period is over, so we have to get back to work. Ms. Curran,
15 would you proceed?

16 MS. CURRAN: Yes, thank you. I wanted to just let you know I was
17 told that -- this is Dr. Gordon Thompson who's sitting very close behind me. I was
18 told he could not sit next to me, but he needs to be close enough to hit me in the
19 elbow if I misstate a technical issue because I am after all a lawyer. I am not a
20 physicist. So, I hope you'll indulge me if I need to consult him.

21 This case raises the question of whether in making a Finding of No
22 Significant Impact or FONSI with respect to the Diablo Canyon spent fuel storage

1 facility, the NRC reasonably ignored the significant and reasonably foreseeable
2 adverse environmental impacts of an attack on the facility in the form of
3 widespread radioactive contamination caused by the airborne release of cesium
4 from one or more spent fuel storage casks at the proposed facility.

5 It also raises the question of whether the NRC staff disregarded the impacts
6 of radioactive contamination by relying on hidden and irrational assumption that
7 radioactive releases that do not result in early fatalities are not plausible.

8 Under NRC procedures the Mothers for Peace carries the burden of going
9 forward with a challenge to the environmental assessment in this case, but the
10 NRC staff carries the burden of proof.

11 The NRC staff has the burden of proving that it took a hard look at the
12 environmental impacts of an attack on the spent fuel storage facility.

13 The evidence shows and in fact the NRC put on blinders to the impacts of
14 land contamination based on a policy that was applicable to a completely different
15 kind of facility and it had no logical application to a dry cask storage facility.

16 First, the Mothers for Peace met its burden of going forward. Mothers for
17 Peace's expert witness Dr. Thompson showed how the basic design features of a
18 dry spent fuel storage cask can be used to the advantage of an attacker. These
19 features -- there's three fundamental features.

20 One is that zircalloy cladding is susceptible to fire. As a matter of fact
21 zirconium has been used as a combustion agent.

22 Second, the same aspect of the cask design that allows convective cooling

1 of the spent fuel inside the cask also allows propagation of a fire, namely the
2 casks are bolted to the pad. It's very difficult to knock them over. And second, air
3 ducts allow strong drafts to be established.

4 Finally, cesium is a volatile substance. When it's boiled in a fire, it
5 vaporizes and when it condenses it condenses into extremely small particles that
6 can be carried on an air borne plume and deposited a great distance down wind.

7 Dr. Thompson also showed there are multiple means of starting and
8 propagating a fire in a spent fuel storage cask and that these means are available
9 to sub national groups.

10 The measures include means for removing the cask lid and measures for
11 penetrating the concrete over pack and the stainless steel canisters surrounding
12 the spent fuel assemblies.

13 While both the staff and PG&E claim that the spent fuel storage casks at
14 the Diablo Canyon facility are robust, it is clear that weapons are available that can
15 penetrate the cask and start a fire.

16 Table 2 of Dr. Thompson's second declaration, for example, shows that
17 U.S. Army shape charges are more than capable of penetrating concrete and
18 armor plating used in a Holtec spent fuel cask.

19 Finally, Mothers for Peace showed that the final environmental assessment
20 supplement issued in August 2007 completely fails to address the significant
21 environmental impacts of land contamination that could result from an attack on
22 the Diablo Canyon spent fuel storage facility.

1 And in fact, as indicated in the environmental assessment and as later
2 confirmed by other documents released into the record there was never any real
3 possibility that the staff was going to look at the impacts of land contamination
4 because very early on in its analysis the staff ruled out as unrealistic any types of
5 attacks that would result in impacts other than early fatalities.

6 And the document the staff relied on for that decision was SECY-04-0222,
7 which was approved by the Commission in an SRM. And SECY 04-0222 was
8 written for uranium processing facilities such as U.S. processing facilities and
9 research and test reactors, but it has been applied to independent spent fuel
10 storage facilities.

11 In its pleadings in this case and this case depends on what is in the
12 environmental assessment and what is in the pleadings, the staff does not provide
13 a shred of evidence -- not a shred -- that it considered the potential for an attack
14 causing a fire in the zircalloy cladding and the consequent large releases of
15 radioactive material to the environment.

16 Instead, the staff makes a number of misleading assertions that are
17 intended to create the appearance that the staff made a comprehensive evaluation
18 of the potential for a range of consequences from an attack.

19 First, the staff tries to create confusion over its reliance on SECY-04-0222.
20 For instance, the staff says, "The staff has never stated that threat scenarios
21 considered plausible were eliminated from consideration in developing the
22 supplemental EA based on a criterion involving 'early fatalities'." And that's in the

1 NRC staff response to San Luis Obispo Mothers for Peaces' request to
2 supplement the Subpart K presentation. That was dated May 12th, 2008.

3 The staff can make this assertion because it is clear that the staff used the
4 screening criteria in SECY-04-0222 to determine plausibility, which is basically
5 equivalent -- they use the word "realistic" -- which is equivalent to plausibility.

6 So, when the staff says it never stated that the threat scenarios considered
7 plausible were eliminated from consideration based on early fatalities, in
8 determining what was plausible it had eliminated those scenarios. So, it's a
9 self-fulfilling kind of a statement. It's completely circular.

10 Another similarly misleading statement is a statement by an affiant,
11 Elizabeth A. Thompson, who is responsible for the radiation dose calculations in
12 the EA supplement.

13 She said in an affidavit dated April 10, 2008, "In order to obtain a
14 conservative estimate of environmental impacts, I chose the type of plausible
15 attack that results in the largest release of radioactive material". The word
16 "plausible" here is key.

17 The staff had already narrowed the class of attacks it was going to look at
18 to attacks that didn't involve -- that did involve early fatalities, so it's not exactly
19 surprising that the staff found there were no significant consequences in terms of
20 land contamination.

21 The staff never says why it's reasonable to believe that attacks on dry
22 casks that cause significant land contamination are implausible or unrealistic, but

1 we believe it's reasonable to infer that the staff made a gross technical error in
2 applying the guidance of SECY-04-0222.

3 The SECY paper was intended to apply primarily to research and test
4 facilities. These are nuclear reactors. They have a much smaller inventory of fuel
5 than a commercial reactor, but that's still what they are.

6 And a significant portion of the inventory of research and test reactors
7 consists of short-lived isotopes such as iodines and telluriums that can cause early
8 fatalities if they are vaporized and released in an airborne plume.

9 And although the radioactive inventory of these research and test reactors
10 may be small, the exclusion zone is also very small, some of them are located in
11 cities. And thus the number of early fatalities caused by a radiation release from
12 one of these facilities could be significant.

13 Facilities that process uranium hexafluoride are similar in the sense that
14 uranium hexafluoride is both volatile and very hazardous and thus it may also
15 cause large numbers of early fatalities if it's released in an airborne plume.

16 Thus, while a security analysis for one of these facilities that disregards or
17 screens out impacts other than early fatalities would be incomplete because these
18 facilities also do contain cesium, which is a contaminant, it wouldn't be completely
19 irrational to narrow the scope of a security analysis to early fatalities for one of
20 those types of facilities, but that can't be said for a dry storage facility where
21 short-lived isotopes are present only in minute quantities.

22 If a fire were started in a dry cask it would be unlikely to cause any fatalities

1 or early fatalities through airborne release of short-lived isotopes. There just aren't
2 enough of them.

3 On the other hand, the main constituent of dry cask that has volatile
4 properties and can be boiled and released in large quantities in an airborne plume
5 is cesium. As shown in Dr. Thompson's report and his declaration, an airborne
6 release of cesium that has been heated to the boiling point and carried aloft in a
7 radioactive plume could have devastating environmental effects.

8 By robotically applying the consequence based screening criterion in
9 SECY-04-0222 to a dry storage facility without questioning the applicability of the
10 logic, the staff missed the fundamental point that any reasonably intelligent
11 attacker will take advantage of the design and characteristics of the facility in issue
12 and try to use those characteristics to cause the maximum damage to the
13 environment and to human health.

14 It's simply irrational to think that an attacker would rule out that kind of an
15 attack and it would focus on trying to release an extremely small amount of
16 isotopes that could cause early fatalities by basically puncturing a hole in the cask
17 and shaking it up.

18 You could do that. You could probably kill somebody who was standing
19 nearby, but it misses the point that that is not what someone who is planning an
20 attack on a nuclear facility thinks about. They think about how can I use this
21 design to do the most damage?

22 So, it's true that if you flew an airplane into a cask it would make a dramatic

1 visual impact, but the drama in terms of human health or environmental effects is
2 not there in that type of an attack. The drama would lie in an attack that can
3 actually release a significant portion of the contents of that cask to do the kind of
4 damage that that radioactive constituent would do. And in this case, cesium is a
5 contaminant.

6 And if cesium is released in a plume over the state of California, it's going to
7 go much further than a short distance from the plant. It's going to contaminate
8 thousands of square kilometers of land. It's going to make it uninhabitable. It's
9 going to make it unusable for farmland.

10 That presumably is the kind of effect that an attacker would be looking to
11 achieve. And that kind of effect was completely ignored in this environmental
12 assessment. There isn't one statement in the environmental assessment or in any
13 of the referenced documents indicating that the staff looked.

14 Now, you heard today the staff say, "Well, we did consider a zirconium fire,
15 but we can't talk to you about it." And suggesting that maybe they can tell you
16 privately.

17 Well, first of all, the record here shows that the Commission has made a
18 decision to release enough information about its reference documents when it
19 does a security assessment to at least inform the public of the outlines of what
20 was looked at.

21 For instance, the two major studies that the staff released that were
22 reference documents in this case were documents number 1 and 2 in the staff's --

1 when they released the Vaughn Index and the redacted referenced documents.

2 Reference 1 is a study of the results of a large airplane crash into a field of
3 Holtec HI-STORM casks. And Reference 2 is a Sandia study of a large explosive
4 charge blast next to a storage cask.

5 So, these studies identify what type of attack has been studied to see what
6 the release would be and what the impacts to human health would be. And, of
7 course, these particular kinds of attacks involved putting a hole in the cast and
8 shaking it up, which might release a small amount of radio nuclides that could
9 cause an early fatality, but we agree the impacts to public health would be
10 relatively small.

11 They'd only be significant if somebody was relatively nearby to the cask.
12 But neither one of these studies looked at what would happen if the fuel could be
13 ignited and there isn't any study that the staff has pointed to where they can say
14 we looked at this.

15 If the staff can say, "We looked at it. We rejected it based on technical
16 grounds. We've done experiments just like Sandia did with these airplane
17 crashes", that would be one thing. But it's been ignored, and it was ignored
18 apparently based on this SECY paper because if you can exclude attacks that
19 don't result in nonfatal impacts then that's taken off the table.

20 Now, I am making inferences here because we're deducing some of these
21 things from the reference documents, but we have statements in the record that
22 the staff considered, the staff consulted SECY-04-0222. We have statements in

1 the record that that SECY paper has been used with respect to independent spent
2 fuel storage facilities and we have the absurd, the truly absurd result that the NRC
3 staff is proposing to license a dry cask storage facility and saying that the potential
4 impacts of this facility are negligible.

5 It doesn't add up and the staff has the burden of proof here. It's not our
6 burden to prove this; that the staff didn't do its job. The staff has the burden of
7 proving that it did.

8 And if the staff is proposing to give you information about its studies of
9 zircalloy cladding and whether it can burn and whether a cask can be attacked in a
10 way to induce and propagate a fire, Mothers for Peace insists that we be privy to
11 that briefing because this is a licensing issue in which we are entitled to a hearing
12 on whether the issuance of the license is in compliance with the National
13 Environmental Policy Act.

14 The NRC has procedures in place for insuring that information is protected.
15 We are fully committed to protecting sensitive information, but what we are not
16 willing to do is to basically give up the ghost and say whatever the staff wants to
17 tell us we accept and we accept that the staff will have no accountability to the
18 public as to whether it has taken a truly hard look at the environmental impacts of
19 an attack on this facility.

20 In closing, I just want to say this is not an academic dispute. For the
21 Mothers for Peace, this is about whether the NRC is going to look at alternatives
22 for minimizing the impacts of an attack on this facility before it allows it to operate.

1 You've heard a number of times here this morning that the casks that are
2 going to be used at the Diablo Canyon facility are robust. It is true that these
3 casks are designed to protect against natural phenomena, against -- there was a
4 statement about a missile carried by a hurricane, but that's not the same as a
5 missile that is a weapon designed as a weapon. The kinds of missiles that are
6 available to sub national groups today.

7 It's in Dr. Thompson's report. They can do significant damage to these
8 casks. And there are alternative designs that are available. For instance, Holtec,
9 the same manufacturer that PG&E is purchasing its cask from, has a new cask,
10 the Holtec 100U cask design.

11 That cask is designed to be partially buried in the ground. Part of the cask
12 that is exposed is reinforced against an attack and it can even be replaced if the
13 threat -- the severity of the threat increases. It can be replaced with something
14 even more robust.

15 We're not trying to do an advertisement for the Holtec 100U, but we're
16 trying to tell you there are advances that have been made in the design of these
17 casks and we want to see the NRC take a hard look at whether or not it's
18 appropriate to require this kind of cask in order to protect the public, the residents
19 around this plant and across the state from what could be the devastating impacts
20 of an attack on this facility.

21 And so far we have not seen the kind of a study that would give us any kind
22 of assurance that the NRC staff has dealt with the spectrum, reasonable spectrum

1 of threats that are really posed to this facility.

2 And that concludes my presentation.

3 CHAIRMAN KLEIN: Thank you. I'll start with a few questions. Do
4 you agree that if a hypothetical terrorist attack yielded 5 rem or less that that would
5 be defined as small?

6 MS. CURRAN: Not necessarily because there could be land
7 contamination also associated with that release downwind of the site. So, if you're
8 talking about the person that -- the hypothetical person that was analyzed in the
9 environmental assessment that's not the only potential consequence of a release.
10 For example, the plume could pass completely over that person and touch
11 down, further down wind.

12 CHAIRMAN KLEIN: But if you assume a worst-case scenario of 5
13 rem are you saying that that is not considered a small dose, a 50-year?

14 MS. CURRAN: The dose of concern to the staff in the EA
15 supplement was the dose of -- inhalation dose plus four days of ground shine.
16 The dose of concern to the Mothers for Peace is a dose that could last for many,
17 many more years than that as a result of contamination of land.

18 CHAIRMAN KLEIN: But if you assume a 5 rem maximum dose, is
19 that considered significant in your view?

20 MS. CURRAN: Perhaps you could clarify 5 rem by what method and
21 to whom.

22 CHAIRMAN KLEIN: 5 rem, 50-year over 50 year period.

1 MS. CURRAN: 5 rem inhalation dose?

2 CHAIRMAN KLEIN: Either one. Either exposure or inhalation.

3 MS. CURRAN: The reactor safety study took ten years -- 10 rem
4 over a 30-year period as a criterion for abandonment of land. So, perhaps you
5 could compare it to that.

6 Though it's not necessarily -- I'm not going to concede that as small, but I
7 think it's missing -- that particular issue is really missing the major problem with
8 this case, which is the NRC staff's failure to consider much more severe potential
9 impacts.

10 CHAIRMAN KLEIN: If there is a calculation that results in a
11 maximum of 5 rem over a 50-year period do you believe that would result in
12 significant contamination at the 5 rem level of land contamination?

13 MS. CURRAN: A 5 rem dose -- a 5 rem external dose over 50 years
14 is not necessarily insignificant. If you're talking about an average dose, the
15 Chernobyl accident showed great variations in individual doses from what the
16 average dose was so that it's very difficult to say that it would --

17 CHAIRMAN KLEIN: This is a case for if the maximum is 5 is what
18 my question is.

19 MS. CURRAN: Well, given that is half of the reactor safety studies
20 criterion for land abandonment, we wouldn't concede that as insignificant.

21 CHAIRMAN KLEIN: So, you believe that if a maximum 5 rem dose
22 occurs that the potential land contamination is not insignificant?

1 MS. CURRAN: Correct.

2 CHAIRMAN KLEIN: In terms of -- is your case essentially based on
3 the fact that Dr. Thompson is assuming a zircalloy fire?

4 MS. CURRAN: Dr. Thompson isn't assuming a zircalloy fire, he has
5 determined that it's a realistic, possible event.

6 CHAIRMAN KLEIN: So, if there is not a zircalloy fire, would there
7 still be significant release?

8 MS. CURRAN: No.

9 CHAIRMAN KLEIN: Does Dr. Thompson have access to intelligence
10 information on threat assessments?

11 MS. CURRAN: No.

12 CHAIRMAN KLEIN: In terms of that then are a lot of your
13 assumptions speculative in terms of the potential for a zircalloy fire?

14 MS. CURRAN: They're not speculative, no. They're based on
15 scientific analysis which is provided in Dr. Thompson's declaration and studies that
16 he relies on are documented in his report and his declaration. It's not speculation
17 at all.

18 Just as it was not speculation when Dr. Thompson asserted that the
19 cladding in spent fuel pools could burn and the NRC rejected his -- at first rejected
20 his testimony on that and then agreed with it.

21 CHAIRMAN KLEIN: But in terms of a terrorist capability of creating a
22 zircalloy fire, how did Dr. Thompson come up with that potential scenario?

1 MS. CURRAN: Dr. Thompson, as one should do in an analysis of
2 this type, tried to understand what would an attacker try to do with a dry cask.
3 What would be the maximum damage that could be caused with a dry cask and
4 how would you do it?

5 And he analyzed the ways that you could do it and he showed that it's
6 possible to do. And that's documented in his report. And that's why you don't
7 have to be privy to national security information to make that type of analysis.

8 That's part of the point of this type of analysis is the attackers don't have
9 access to that information. They have their intelligence and they have publicly
10 available information. It's possible to get a great deal of information from just the
11 Internet.

12 CHAIRMAN KLEIN: Did the analysis include a time line and the
13 responsive capabilities of the Diablo security force?

14 MS. CURRAN: All of Dr. Thompson's analysis are presented in his
15 report. There is no other -- there are no assumptions that he made or no factors
16 he considers that are not presented in his report. He looked at the potential for a
17 zirconium fire.

18 Are the weapons available? Are they transportable? What damage will
19 they do? Can you ignite zirconium fuel? Can you propagate a fire? Those are
20 important and relevant questions to ask.

21 CHAIRMAN KLEIN: So, these are postulated threats as opposed to
22 a threat assessment?

1 MS. CURRAN: I don't know what the difference is.

2 CHAIRMAN KLEIN: I'll stop at this point and have the second round.

3 Commissioner Jaczko?

4 COMMISSIONER JACZKO: As you, I think, stated initially, the
5 burden here on the -- the proof rests with the staff. Do believe that the staff
6 demonstrated that the scenario that they considered in their environmental
7 assessment was sufficient to satisfy NEPA.

8 MS. CURRAN: No, not at all.

9 COMMISSIONER JACZKO: Do you think that the staff adequately
10 considered land contamination and latent health effects in their environmental
11 assessment?

12 MS. CURRAN: Not at all.

13 COMMISSIONER JACZKO: Does the staff in their environmental --
14 their supplement to the environmental assessment responded to a comment that
15 indicated -- I'll read it. "Several commenters indicated they felt the EA supplement
16 failed to address impacts to other than early fatalities.

17 The impacts that these commenters wanted to see addressed included land
18 contamination, illness, delayed fatalities, cleanup costs, doses to workers and
19 emergency responders, emergency evacuation, effects on the economy and
20 infrastructure."

21 I'm not sure if you're familiar with that comment, but my question is to the
22 response. If you're not familiar with the response I can read it, but if you are, my

1 question is do you believe that that response was sufficient to satisfy the NEPA
2 requirements to address this issue.

3 MS. CURRAN: Would you mind reading it?

4 COMMISSIONER JACZKO: The response? "As explained in the
5 EA supplement, the staff has determined" -- if I go too fast, slow me down --
6 "determined the probability of a successful terrorist attack, i.e. one which results in
7 a significant radiological event to be very low.

8 Specifically, actions taken since September 11th, 2001 both diminish the
9 probability of an attack occurring at nuclear facilities and enhance the response
10 capabilities if an attack were to occur.

11 Further, the probability of such an attack being effectively carried out and
12 leading to a significant radiological event is even lower. Based on this reasoning
13 and the staff's consequence analysis, the staff considers there to be no significant
14 environmental impacts from terrorist attacks against the Diablo Canyon ISFSI.

15 This approach" -- it goes on to more specifics. I can keep reading if you
16 want -- "This approach in which the staff assesses the significance of
17 environmental impacts based on the probability of occurrences is consistent with
18 the manner in which the NRC evaluates the impacts of accidents and
19 environmental analysis. .

20 To clear up some apparent confusion, the EA supplement did not consider
21 early fatalities as a measure of environmental impact. For the EA supplement, the
22 staff performed a dose assessment that used a source term derived from the

1 security assessment work, which was based on hypothetical release resulting from
2 a terrorist attack.

3 The staff also assumed national average meteorological conditions in
4 making an initial estimate of the dose at the location of the nearest resident. Then
5 the staff applied Diablo Canyon site specific dispersion parameters to generate a
6 dose estimate to the nearest resident that was more representative of the actual
7 conditions at the site.

8 The revised dose was used by the staff in assessing environmental impact.
9 The EA supplement has been revised to help clarify this point."

10 Do you believe that that answer satisfies the responsibilities under NEPA to
11 address the issues of land contamination or other health effects?

12 MS. CURRAN: No, I can explain a couple reasons. First of all, to
13 some extent the staff seems to be repeating an argument that the Ninth Circuit
14 rejected which was attacks are remote and speculative and therefore we don't
15 need to look at them. That was rejected by the Ninth Circuit. You just can't say
16 that without backing it up with something.

17 And second, we haven't seen the analysis in the environmental assessment
18 that the staff looked at the potential for an attack that would be designed to cause
19 widespread land contamination. The staff looked at --

20 COMMISSIONER JACZKO: Are you familiar with anything in the
21 Vaughn Index or the references that would lead you to indicate that there is such
22 an analysis?

1 MS. CURRAN: There's nothing there. The only thing that's in the
2 Vaughn -- the documents in the Vaughn Index are the two Sandia reports I
3 mentioned that involved a plane crash and an explosion next to the cask.

4 There was no consideration of what if an attacker tried to puncture this cask
5 or open the top and puncture it at the bottom and start a fire and take advantage of
6 that chimney effect in the cask and take advantage of the flammability of
7 zirconium; take advantage of the volatility of cesium and cause a dramatic impact
8 to the state of California.

9 I mean, this is the most obvious thing. The most obvious thing wasn't even
10 on the table. Not even remotely for somebody to say, "Well, we thought about that
11 and here's a couple of reasons why we rejected it."

12 The first time that the staff said anything about considering the potential for
13 a zirconium fire was in its response to our presentation when they said, "We
14 thought about it, but it's a secret and we can't tell you." And that just doesn't stack
15 up with -- if you look at the amount of information that has been released in this
16 case, the Commission has made a commitment and this is true in the design basis
17 threat rule, it's true in the stack of redacted documents, the Commission's made a
18 commitment to at least release enough information so the public has some
19 assurance that the most obvious threat scenarios or types -- this isn't even one
20 scenario, this is a whole type of threat, was look at and it's not there.

21 COMMISSIONER JACZKO: In the Commission's order and I forget
22 which particular order in all honesty, one of the orders in this case. The

1 Commission instructed the staff to ultimately provide information for the
2 Commission to make a determination that all the relevant threat scenarios were
3 considered and then to, outside of the adjudicatory process, make a determination
4 of the fact that the staff had considered all the relevant threat assessments.

5 In your view is that approach consistent with our responsibilities under the
6 Atomic Energy Act and under NEPA and under the Ninth Circuit?

7 MS. CURRAN: In the context of this adjudication the staff needed to
8 show that it considered the impacts of an attack on this facility. That was how the
9 Commission chose to respond to the Ninth Circuit's decision.

10 It could have done something else. It could have come up with another
11 rationale for legally saying on a legal basis we're never going to consider the
12 impacts of an attack, but the Commission decided we're going to do it.

13 And then the staff said, "Okay, here's our environmental assessment." So,
14 the whole agency committed to using this process, this NEPA process, which has
15 become an adjudicatory process since we requested a hearing to make this
16 determination.

17 So, no, it's not possible to do it outside the adjudication and then say to us,
18 "Well, we've taken care of it, but we're not going to discuss it at all with you."

19 COMMISSIONER JACZKO: In that same order and I think it was
20 CLI-08-01, the Commission also had in front of it a contention on various
21 scenarios. The Commission did not admit that contention. The issues about the
22 zirconium fire and other things have been raised in this context.

1 Can you explain to me why you believe those are issues that are relevant to
2 the contention that the Commission did accept which was that the NRC staff's
3 environmental assessment ignored environmental effects on the surrounding land
4 and failed to consider nonfatal health effects from a hypothetical terrorist attack.

5 MS. CURRAN: Well, a couple ways. First of all, earlier I was talking
6 about the SECY-04-0222. If this Contention 2 is just restricted to -- you didn't look
7 at the -- the staff didn't look at the consequences and we're not allowed to look at
8 how the consequences come about, we still have the problem that the staff applied
9 a criterion for excluding certain kinds of attacks and that criterion was based on
10 consequences. So, there's a kind of closed circle here.

11 COMMISSIONER JACZKO: Because they didn't consider the
12 consequences you think they may not have considered the right scenarios?

13 MS. CURRAN: They had a screening criterion at the very beginning
14 of their analysis that took accident -- attacks that weren't -- didn't involve early
15 fatalities out of consideration and that was consequence based. Our contention
16 says you didn't look at the consequences.

17 So, in that sense it's really hard to pull apart consequences from how they
18 occur. You have to give some thought to how the consequences could come
19 about. They don't come from nowhere.

20 In the staff's analysis, you can infer and you can tell from the Sandia
21 studies that the kind of consequences they looked at were what happens if you put
22 a hole in the cask and you shake it up. Then this is the kind of consequences you

1 get.

2 COMMISSIONER JACZKO: If the staff or the Commission were to
3 rule in your favor in this particular case what remedy do you think would be most
4 appropriate?

5 MS. CURRAN: The staff should be required to prepare an
6 environmental assessment -- environmental impact statement -- excuse me -- that
7 fully assesses the environmental impacts of an attack on the Diablo Canyon facility
8 and looks at the range of the types of attacks that could occur and looks at the
9 consequences that would flow from those types of attacks.

10 I know there was something in CLI-08-01 about how the Commission isn't
11 required to litigate every scenario that interveners can dream up. That's never
12 been what we're about. We're about a class of scenarios. We're about a type of
13 attack that has not been considered.

14 The main type of attack that one would think a person who was trying to do
15 damage to a dry storage facility would do. We're not interested in litigating do they
16 come by land or sea or do they come through the back door or front door? We're
17 talking about a much bigger picture issue here.

18 And we want the environmental impact statement to look at what are
19 mitigative measures that can be employed to reduce the likelihood of an attack
20 being successful. And they're there. They're available. We want a real
21 discussion of those measures.

22 COMMISSIONER JACZKO: Just one quick follow-up question. Do

1 you believe the Commission has procedures and rules in place to conduct that
2 discussion in a way that would not compromise national security?

3 MS. CURRAN: Yes. And as a matter fact the Mothers for Peace
4 participated in a hearing in 1979 on security issues and there was no problem with
5 that. The hearing was closed. The documents and the testimony were all
6 protected.

7 We're perfectly willing to participate in that type of proceeding. We think
8 security is important. But what we do not agree with is a totally secretive policy in
9 which the public is accorded no accountability for government actions. That's not
10 consistent with the law and it's not good policy.

11 COMMISSIONER JACZKO: Thank you.

12 CHAIRMAN KLEIN: Commissioner Lyons?

13 COMMISSIONER LYONS: Dr. Thompson postulates -- and that's
14 the precise word he uses -- a release of half the cesium enforcement fuel in
15 storage modules. He goes on to state that this 3 million curries and I quote, "is a
16 reasonable assumption for the purpose of assessing the radiological impacts of a
17 successful attack."

18 However, I was unable to find any quantitative evaluation in
19 Dr. Thompson's work of the validity of this number. Can you say anything about
20 the quantitative technical rationale for postulating such a release?

21 MS. CURRAN: The numbers Dr. Thompson used were reasonable
22 assumptions using basic principles of physics. With that being said, I think it's

1 important to point out that the Mothers for Peace does not have the resources that
2 the government has to do the kind of modeling and quantitative assessment that
3 would be appropriate in this instance and that is what we would look for in an
4 environmental impact statement.

5 COMMISSIONER LYONS: So, your position then is that a basic
6 principle of physics is that half the cesium in four modules will be released? That's
7 a basic principle of physics?

8 MS. CURRAN: Well, he applied basic principles of physics to make
9 that assumption. He was not able to do the kind of modeling that would allow a
10 precise estimate, but it's a reasonable estimate.

11 The assumption is contingent upon the initiation and propagation of a
12 sustained zircalloy fire in each of the four modules.

13 COMMISSIONER LYONS: My next question to some extent tie in
14 with your use of the word "sustained". Because I was also unable to find any
15 consideration in Dr. Thompson's work of the effects of site defenses on any
16 possible attack how that would impact the time lines; any consideration of the
17 responses that would be reasonably taken to such an attack; and any
18 consideration of the mitigating actions that would be logically taken in response to
19 such an attack.

20 And I'm wondering why there was no attempt to consider the defensive or
21 mitigative capabilities at the site in considering this particular attack scenario on
22 which, as I understand it, you are pinning your concerns?

1 MS. CURRAN: Well, you know, the environmental assessment
2 claimed to look at the worst effects of a plausible scenario. I don't see anything in
3 the environmental assessment about saying well, it wouldn't be as bad as it might
4 be because of defenses on the site.

5 The premise of the environmental assessment was we're going to look at
6 the worst type of attack and we're going to tell you what the consequences are.

7 So, what he did was consistent with that. In Dr. Thompson's report, there is
8 also a lengthy discussion of defenses and their limitations.

9 COMMISSIONER LYONS: I probably shouldn't pursue that.

10 MS. CURRAN: If you'd like me to find a page number I would be
11 glad to.

12 COMMISSIONER LYONS: I think I'll stop my questions there.

13 CHAIRMAN KLEIN: Commissioner Svinicki?

14 COMMISSIONER SVINICKI: Thank you. Ms. Curran, just to start
15 with a clarifying question. On page 25 of the Mothers for Peace filing there's a
16 footnote nine that says, "As discussed in the second Thompson declaration the
17 NRC's modeling of radioactive plumed dispersion for purposes of assessing
18 radiation dose was unacceptably simplistic and stylized."

19 Is that statement related to the deficiencies that the Mothers for Peace point
20 out in the hot spot code? Are those two related?

21 MS. CURRAN: Yes.

22 COMMISSIONER SVINICKI: So, on the specific deficiencies that

1 are alleged with respect to the use of the hot spot code is it the code itself is
2 inadequate or its application in this case was somehow used inappropriately?

3 MS. CURRAN: It's not an appropriate code for considering land
4 contamination.

5 COMMISSIONER SVINICKI: Okay. In the preparation of his
6 declarations or other work he had done, has Dr. Thompson used a different code
7 to show that the hot spot modeling was inadequate or inappropriate here as a
8 contrasting analysis?

9 MS. CURRAN: Dr. Thompson hasn't done modeling himself, but if
10 he were to do that he would use the MACCS code as the point of departure.

11 COMMISSIONER SVINICKI: So, he would assert that that's the
12 more appropriate code to be used in this case?

13 MS. CURRAN: Yes.

14 COMMISSIONER SVINICKI: Thank you. How would the Mothers
15 for Peace respond to PG&E's argument that the 5 rem dose demonstrates that
16 there are no significant impacts on the environment and that there's no legal
17 requirement for the staff to use a particular metric for assessing the consequences
18 of beyond design basis accidents or terrorist attacks?

19 MS. CURRAN: I'm not sure I understand the question.

20 COMMISSIONER SVINICKI: In terms of contention to what I've
21 drawn from the questioning that's occurred so far in the oral argument is that the
22 argument does not turn so much on the fact of the staff having ignored various

1 effects, but on the postulated scenario. So, it really goes outside the contention
2 that we're arguing.

3 Maybe you can correct me on this if I'm wrong, but in terms of staff's
4 derivation of the scenario as you understand it that they came to less than 5 rem
5 for the exposure.

6 If a similar analysis were undertaken is it there's a flaw in how that was
7 constructed or that the wrong scenarios were analyzed?

8 MS. CURRAN: I guess just more to the point it was the hidden
9 assumption that led to the -- the assumption about consequences led -- about
10 certain kind of consequences being not worthy of consideration led to the
11 assessments of an unreasonably limited set of scenarios.

12 COMMISSIONER SVINICKI: So, it does come to the point of what
13 was excluded from analysis not so much what was analyzed or how it was
14 analyzed, but it's deficient in terms of the holistic -- the entirety of what was
15 analyzed? Okay.

16 Would you posit that NEPA requires in this case staff to consider land
17 contamination in and of itself not just to the extent that it contributed to dose which
18 I think is what staff would represent that that is what they analyzed?

19 MS. CURRAN: Yes.

20 COMMISSIONER SVINICKI: Okay. So, I understand that the
21 purpose of NEPA or one of the purposes of NEPA in your view would be to
22 analyze impacts on human health regardless of -- to analyze impacts on the

1 general environment regardless of whether there was an impact on human health?

2 That's one of the purposes?

3 MS. CURRAN: For instance, if a large segment of the population
4 had to relocate, the economic impacts of that would be the kinds of impacts you
5 would expect to see addressed under NEPA.

6 COMMISSIONER SVINICKI: And to follow up on a question that
7 Chairman Klein had asked. In terms of -- I know that you made reference to all of
8 the supporting documents that are referred to in Dr. Thompson's declaration. I
9 think it's almost eight pages of documents.

10 Other than the documents in here, I think almost two pages of them are
11 Dr. Thompson's own prior reports. Is it possible in an easy way here and a timely
12 way to point me to specific studies upon which Dr. Thompson relied that relate to
13 the zirconium fire itself.

14 You indicated that igniting it and propagating it are all relevant and
15 important questions. What were the studies in these eight pages of studies on
16 which he would have relied? I assume he did not conduct any physical testing
17 himself, but correct me on that.

18 MS. CURRAN: That's right. Table 1 and its footnotes in
19 Thompson's second declaration provide some of those references. That
20 declaration is dated April 14th and it's attached -- its Exhibit 3 to the Mothers for
21 Peace's Subpart K presentation.

22 On page 16 of Dr. Thompson's April 14th declaration, he lists several Army

1 sources, two defense update sources. On page 17 there's two Fischer and
2 Grubelich sources. On the same page, Honnellio and Rydell; that's at the bottom
3 of page 17.

4 On page 18, Lange et al 2001; page 20 Powers et al 1994; on page 23
5 Walters 2003. Also, in each of the Thompson papers that are cited, there are
6 other reference documents that may not be included in this list.

7 COMMISSIONER SVINICKI: All of those page numbers refer to the
8 April declaration; is that correct?

9 MS. CURRAN: Yes.

10 COMMISSIONER SVINICKI: Okay. Thank you, Mr. Chairman.

11 CHAIRMAN KLEIN: I just have one clarifying question. Did I
12 understand you to say that you recommended that the Holtec 100 underground be
13 used at Diablo Canyon?

14 MS. CURRAN: It's an example of a mitigative measure that should
15 be considered; that type of mitigative measure.

16 CHAIRMAN KLEIN: Do you know whether the NRC has yet
17 approved that concept?

18 MS. CURRAN: Last time I looked, approval of that cask was
19 pending and I don't know whether it's been approved or not.

20 CHAIRMAN KLEIN: Thank you. Commissioner Jaczko?

21 COMMISSIONER JACZKO: There was some discussion about the
22 scenario that Dr. Thompson has developed and worked on. From a NEPA

1 perspective is it the responsibility of interveners to develop scenarios? Or the
2 responsibility of the staff?

3 MS. CURRAN: Well, I think it's the responsibility of staff to take a
4 hard look. So, in the context of something that involves protecting against an
5 attack, whether it's -- I'm not sure I would break it down to the word "scenarios"
6 because that sounds kind of narrow, but certainly types of attacks, general classes
7 of attacks one would expect to see that they had looked at those.

8 COMMISSIONER JACZKO: At this point do you believe that the
9 staff has sufficiently looked at those to provide a reasonable analysis of land
10 contamination and latent health effects.

11 MS. CURRAN: Not at all.

12 COMMISSIONER JACZKO: I think as you mentioned in regard to a
13 question that Commissioner Svinicki raised about what would be the appropriate
14 code to use to do a discussion of land contamination, I believe you responded that
15 the MACCS code would be the right code. Are you aware of whether or not the
16 staff can use the MACCS code in developing or doing an analysis for the EA?

17 MS. CURRAN: You asked if they did use it?

18 COMMISSIONER JACZKO: Are you aware if the staff used that
19 code?

20 MS. CURRAN: There's no reference to the MACCS code that we
21 know of.

22 COMMISSIONER JACZKO: You mentioned in considering issues

1 other than health effects you talked about relocation as an issue in the potential
2 economic impacts of relocation.

3 Are you aware of anything in the environmental assessment where the staff
4 did an analysis of the relocation of individuals in this particular environmental
5 assessment for the scenarios that they considered?

6 MS. CURRAN: No, that wouldn't be surprising because they didn't
7 think there would be any significant release.

8 COMMISSIONER JACZKO: Did the staff -- which I believe that in
9 the staff's analysis they did consider the relocation of one individual, but I'm not
10 familiar with anything that they did beyond that. I think those are all the questions I
11 have.

12 MS. CURRAN: Just to clarify if they did, we wouldn't consider that to
13 be acceptable because we believe that the consequences that should have been
14 examined would have been much more severe and would have involved
15 contamination of a large area with impacts on a large number of people, economic
16 impacts on agricultural land. A totally different exponentially different scale than
17 what was looked at in the environmental assessment.

18 COMMISSIONER JACZKO: You're not familiar with anything in the
19 environmental - or the references that does that kind of analysis?

20 MS. CURRAN: No.

21 COMMISSIONER JACZKO: Thank you.

22 CHAIRMAN KLEIN: Commissioner Lyons?

1 COMMISSIONER LYONS: I have no further questions.

2 CHAIRMAN KLEIN: Commissioner Svinicki? Thank you.

3 MS. CURRAN: Thank you.

4 CHAIRMAN KLEIN: Because the burden of proof is on the staff
5 does the staff want to make any final comments?

6 MS. CLARK: Yes. We have reserved five minutes of our time. I
7 wonder if we could request a very short break before we begin.

8 CHAIRMAN KLEIN: Due to the -- if you could -- maybe only two
9 minutes. We'd like to proceed as rapidly as possible.

10 Please proceed.

11 MS. CLARK: Thank you. In assessing the environmental
12 consequences of a terrorist attack on the Diablo Canyon ISFSI, the staff relied on
13 analyses that were performed for the purpose of insuring that sufficient security
14 measures are implemented at Diablo Canyon and at all other licensed spent fuel
15 storage facilities.

16 The Commission's regulations require that sufficient security measures be
17 in place to provide high assurance that there will not be an unreasonable risk to
18 public health and safety. The staff shares the interveners' concerns that this high
19 standard be rigorously applied.

20 To protect the security of our nuclear facilities the staff's efforts in attaining
21 this standard have included the development of security assessments which
22 analyzed the potential consequences of an attempted terrorist attack on spent fuel

1 storage casks.

2 These analyses were in turn used by the staff in assessing the
3 environmental consequences of an attack.

4 To address some of the arguments that have been raised in this proceeding
5 there are several points I would like to emphasize with regard to the security
6 assessments.

7 First of all, the staff did not apply a threshold of early fatalities in screening
8 out security scenarios. The only criterion that the staff used in order to eliminate
9 threat scenarios from consideration was the criterion of credibility.

10 And in assessing credibility, the staff used a standard of whether the
11 postulated scenario was remote and speculative.

12 Remote and speculative events are not reasonably foreseeable and are
13 outside the scope of what an agency is required to consider in its NEPA analysis.

14 The staff based its determination of credibility on analysis of intelligence
15 information which tells us what are the capabilities of our potential adversaries.

16 This analysis was done by an expert in the field. We have submitted an
17 affidavit by an individual who's internationally recognized as an expert in
18 intelligence analysis and has over 30 years of experience in this field.

19 In contrast, Dr. Thompson does not have any education, training or
20 experience in intelligence analysis, but most importantly he does not have access
21 to the intelligence information which is necessary to make an informed decision as
22 to the credibility of threat scenarios.

1 The staff also accounted for the security requirements which have been
2 imposed since 9/11. These security requirements which are designed to prevent
3 an attack from occurring ensure that an attack is promptly detected and that there
4 are enhanced response capabilities, also impede the ability of any attackers to
5 complete and successfully cause a release from these casks.

6 These analyses considered a very wide range of attack devices and
7 methods and applied a state of the art methodology in order to evaluate potential
8 radiological releases.

9 It is true that the staff has included in its references two documents that
10 specifically in their title specify types of terrorist scenarios that were considered.
11 One was a large airplane impact and the other one is a large explosive charge
12 blast.

13 However, the staff also included in its reference list an additional document
14 entitled "NRC Spent Fuel Source Term Guidance Document". That specific
15 guidance document contained a number of postulated threat scenarios.

16 Overall, the staff considered a wide range of threat scenarios and
17 eliminated from consideration of consequences only those that were deemed to be
18 remote and speculative.

19 The staff cannot disclose the specific information regarding the scenarios it
20 considered, nor the releases from those scenarios because to do so would
21 disclose information that must be protected in the interest of protecting our
22 national security.

1 However, as we said before and we will say again, we are cognizant of
2 Dr. Thompson's scenario and it has not altered our conclusion that there is no
3 significant risk of environmental consequences from a terrorist attack on the Diablo
4 Canyon ISFSI.

5 This concludes my reply. Do you have any additional questions?

6 CHAIRMAN KLEIN: Thank you. I have no additional questions.

7 Commissioner Jaczko?

8 COMMISSIONER JACZKO: I say I have several. Does the
9 Commission have procedures in place to conduct a proceeding like this in a way
10 that protects national security information?

11 MS. CLARK: The Commission does have provisions in place under
12 which closed hearings can be conducted.

13 COMMISSIONER JACZKO: Has the Commission ever used those
14 proceedings or those procedures and conducted hearings in a closed setting?

15 MS. CLARK: I believe so, yes.

16 COMMISSIONER JACZKO: You mentioned that there was not a
17 threshold or a screening of early fatalities that the only criterion was the criteria of
18 credibility and the standard was remote and speculative.

19 Am I to understand that as a replacement for the low probability statement
20 or is low probability a different standard that was also applied?

21 MS. CLARK: We only considered consequences for those scenarios
22 that we deemed were credible. So for environmental impacts, we do not consider

1 consequences of scenarios which were remote and speculative.

2 COMMISSIONER JACZKO: So previously, you talked about low
3 probability being a factor as well as a consequence in the determination. So, low
4 probability now should be replaced by remote and speculative?

5 MS. CLARK: No. Those are separate and it's important to keep
6 those separate.

7 COMMISSIONER JACZKO: Okay. Can you explain to me how
8 they're used separately?

9 MS. CLARK: Okay. For the universe of potential threat scenarios
10 the staff determined that we need only consider consequences of those that are
11 credible; meaning they were not remote and speculative.

12 Then looking at that universe of credible threat scenarios, the staff
13 determined that the probability that one of those attacks -- any one of those
14 attacks could be attempted, successfully completed and result in a significant
15 radiological release was very low.

16 COMMISSIONER JACZKO: Okay. Commissioner Lyons asked the
17 question about zirconium fire and you said you're aware of Dr. Thompson's
18 comments and it didn't change any of your findings.

19 Can the staff answer the question about in a zirconium fire in a spent fuel
20 cask would half of the inventory of cesium or approximately half of the inventory of
21 cesium be liberated from a stable configuration, I guess I can say?

22 MS. CLARK: Give me a moment and I will check with my staff. I'm

1 sorry; my staff tells me that they cannot answer that question.

2 COMMISSIONER JACZKO: Can they not answer that question
3 because they don't know the answer or because they think --?

4 MS. CLARK: Because its safeguards information.

5 COMMISSIONER JACZKO: The release of zirconium from a fire on
6 spent fuel is safeguards information? Can the staff explain to me why that's
7 safeguarded?

8 MS. CLARK: I'm told that the source term, which is the release from
9 the cask, is considered sensitive security information and cannot be discussed.

10 COMMISSIONER JACZKO: I have a spent fuel bundle that
11 undergoes a zirconium fire. How much of the inventory of cesium in that spent
12 fuel bundle would be released in a zirconium fire? Approximately.

13 MS. CLARK: I'm told that I don't have the appropriate staff to answer
14 that question here.

15 COMMISSIONER JACZKO: But the staff knows the answer to that
16 question? The appropriate staff does?

17 MS. CLARK: The appropriate staff -- we do have staff with the aid of
18 contractors who could do that. We don't know if there is someone that could
19 answer that question right now without analysis.

20 COMMISSIONER JACZKO: Okay, without analysis. Thank you. I
21 have no other questions. Thank you.

22 CHAIRMAN KLEIN: Commissioner Lyons?

1 COMMISSIONER LYONS: No further questions.

2 CHAIRMAN KLEIN: Commissioner Svinicki?

3 COMMISSIONER SVINICKI: Thank you. In the discussion on the
4 differentiation of low probability and remote and speculative is the staff's
5 exercising or use of expert judgment in use of both of those terms related solely to
6 security scenarios?

7 Or put another way in various NEPA endeavors related to other licensing
8 matters like a combined license application, for natural phenomena that cannot be
9 known with certitude, certain flood scenarios, earthquakes scenarios, does staff
10 have to engage in a similar undertaking to look at natural phenomenon and deem
11 certain events either of a low probability or remote and speculative?

12 MS. CLARK: Absolutely. The staff considers the types of accidents
13 that may be considered as well as natural phenomenon. It will first determine
14 which ones need to be analyzed under NEPA based on an assessment of which
15 ones are remote and speculative and which ones are not.

16 So, if a particular event is remote and speculative, it's outside the scope of
17 what we need to consider under NEPA.

18 If it's unlikely, but not remote and speculative, then we will assess the
19 consequences.

20 COMMISSIONER SVINICKI: Is the assessment of low probability in
21 some of the cases and circumstances you just described done in a qualitative
22 fashion at times versus a quantitative fashion?

1 MS. CLARK: Yes. Yes. The staff relies on qualitative assessment
2 in many areas.

3 COMMISSIONER SVINICKI: And that they would use -- they would
4 utilize expert judgment and other means for assessing that qualitatively?

5 MS. CLARK: That is correct.

6 COMMISSIONER SVINICKI: So, that again is not unique to either
7 this EA or looking at terrorist scenarios or security incidents?

8 MS. CLARK: That's correct.

9 COMMISSIONER SVINICKI: Thank you. Thank you, I have nothing
10 further.

11 CHAIRMAN KLEIN: Well, thank you very much. On behalf of my --

12 MS. CURRAN: I have just one more comment that I would like to
13 make in response to something staff said. It will be very brief.

14 CHAIRMAN KLEIN: Is it something new?

15 MS. CURRAN: No. It's a clarification. I would like to be clear that I
16 think I heard Ms. Clark say something for the first time today about the process the
17 staff used to exclude some types of attacks from consideration.

18 I may be wrong, but I do not recall seeing those types of statements in the
19 sworn declaration or affidavits of staff members and I just want to say that I think it
20 is important for the Commissioners to -- when evaluating factual statements like
21 that they need to be in the testimony and not rely on new factual statements that's
22 been made here today.

1 CHAIRMAN KLEIN: I think I had made that comment earlier that we
2 will be basing our decision on the evidence that has been presented prior to this
3 oral argument.

4 Well, on behalf of my fellow Commissioners I'd like to thank all of you for
5 your presentations and for the preparation that led up to them.

6 We will now take this matter under advisement and we will render our
7 decision as soon as we can. Thank you very much. Any comments before we
8 adjourn?

9 We are adjourned. Thank you.