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NUCLEAR REGULATORY COMMISSION

Title: Pacific Gas and Electric Company
Diablo Canyon Nuclear Power Plant

Docket Number: 50-275-LR and 50-323-LR

ASLBP Number: 10-900-01-LR-BD01

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1 UNITED STATES OF AMERICA

2 NUCLEAR REGULATORY COMMISSION

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4 BEFORE THE ATOMIC SAFETY AND LICENSING BOARD PANEL

5 -----x

6 In the Matter of: : Docket No.

7 PACIFIC GAS & ELECTRIC : 50-275-LR

8 COMPANY : 50-323-LR

9 (Diablo Canyon Nuclear : ASLBP No.

10 Power Plant, Units 1 : 10-900-01-LR-BD01

11 and 2) :

12 -----x

13 Thursday, July 9, 2015

14

15 Nuclear Regulatory Commission

16 Hearing Room T-3 B45

17 11545 Rockville Pike

18 Rockville, Maryland

19

20 BEFORE:

21 PAUL S. RYERSON, Chairman

22 DR. GARY S. ARNOLD, Administrative Judge

23 NICHOLAS G. TRIKOUROS, Administrative Judge

24

25

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1 P-R-O-C-E-D-I-N-G-S

2 (9:03 a.m.)

3 CHAIRMAN RYERSON: Good morning, and
4 welcome, everyone.

5 We're here concerning the application of
6 Pacific Gas & Electric Company to renew the reactor
7 operating licenses for the Diablo Canyon Nuclear Power
8 Plant.

9 I am Judge Ryerson. I'm trained as a
10 lawyer, and I chair the Atomic Safety and Licensing
11 Board that the Commission has assigned to this
12 particular matter.

13 On my right is Judge Arnold. Dr. Arnold
14 is a nuclear engineer. And on my left is Judge
15 Trikouros, who, likewise, a nuclear engineer.

16 As I look out, it appears that we are
17 missing counsel for the Intervenor. And let me first
18 ask, is anyone aware of where Counsel for the
19 Intervenor is?

20 MR. REPKA: No.

21 CHAIRMAN RYERSON: Okay. Has anyone seen
22 Counsel for the Intervenor this morning?

23 Yes.

24 MR. STRICKLAND: I saw Diane Curran headed
25 to breakfast.

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1 CHAIRMAN RYERSON: In the building here?

2 Not in the building.

3 MR. STRICKLAND: Across the street.

4 CHAIRMAN RYERSON: Elsewhere. Okay. In
5 the vicinity.

6 MR. STRICKLAND: Right.

7 CHAIRMAN RYERSON: Well, I propose we wait
8 about five minutes, and then if Ms. Curran is not here
9 we'll take a break brief and decide what we do from
10 there.

11 (Whereupon, the above-entitled matter went
12 off the record at 9:04 a.m. and resumed at 9:06 a.m.)

13 CHAIRMAN RYERSON: Apparently, Ms. Curran
14 is being escorted up right now from the security area.
15 So we'll begin in a few minutes.

16 (Whereupon, the above-entitled matter went
17 off the record at 9:06 a.m. and resumed at 9:10 a.m.)

18 CHAIRMAN RYERSON: Good morning, Ms.
19 Curran. Are you ready to go?

20 MS. CURRAN: I am so embarrassed and sorry
21 to be late. The reason that I'm late is because I
22 have been trying very hard to get my seismic expert
23 into the hearing room. He forgot his driver's
24 license; I think I've explained this. And I was down
25 at the guard's desk. They were very nice, trying to

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1 help us out. And I honestly wasn't looking at the
2 clock.

3 And I am ready to begin, but I would like
4 to ask the Board if it would be possible -- according
5 to Chris Lamb, who is the security official, who is
6 trying to help us, we sent him the information
7 yesterday, and he said he never received it.

He is going to call the California DMV
this morning as soon as they open, which for us will
be 11:00. And I'm wondering if it would be possible
to discuss everything but the seismic contention
first, and then hope that at least for part of the
time he can be here with me. I just -- I would really
like to have him sitting at the counsel table if
possible. You know, if it can't be done, it can't be
done. But that's what I would like to request.

17 CHAIRMAN RYERSON: All right. Well, we
18 appreciate the situation. We thought we had taken
19 care of it yesterday by suggesting that -- by working
20 with security to get them to agree that if the -- if
21 a copy of the driver's license was provided yesterday,
22 they could have checked it out, and apparently that --
23 at least they didn't get it.

I think I -- I've talked to the other
Board members, and, frankly, the number of questions

1 that we are going to have dealing with the seismic
2 SAMA contention are probably few, and not terribly
3 complex.

4 So why don't we leave it that we'll see
5 how things go. Let's go through all of your
6 contentions in due course, and we'll see whether there
7 is a reason to come back briefly later in the day to
8 follow up with something, assuming Dr. Jackson is
9 available to get into the building at that point. So
10 let's --

MS. CURRAN: All right. Thank you.

12 CHAIRMAN RYERSON: -- at this point, let's
13 just start over again.

As I was about to say, this morning's proceeding -- and we have two separate Diablo Canyon proceedings today. This morning's proceeding concerns two motions by the Intervenor San Luis Obispo Mothers for Peace, who admit a total of four new contentions in the proceeding.

20 In addition to being recorded by the Court
21 Reporter, I should mention that today's proceeding is
22 being made available to members of the public and the
23 press, both through web streaming and through this and
24 only telephone lines.

25 And before I take formally the appearance

1 of all counsel, I would like to summarize how we
2 intend to proceed. Our purpose this morning is to
3 hear argument on whether the Intervenor has submitted
4 admissible new contentions that should be subject to
5 a full evidentiary hearing.

6 Presently, we have in this case, in the
7 renewal case, one admitted contention by the
8 Intervenor. It was proposed previously.

9 As our scheduling order indicates, we are
10 going to allow each party a short opening statement,
11 not to exceed 10 minutes. However, the principal
12 purpose of today's argument is to allow members of the
13 Board to ask questions about the particular
14 contentions that have been proffered or any other
15 issues that Board members have questions on.

16 Generally, when we ask questions, the
17 Board member will try to identify who he would like to
18 answer the question. And, generally, if the Board
19 member wants answers from more than a party, more than
20 a single party, he will so indicate.

21 But we are going to be relatively
22 informal. And if anyone feels a need to comment on a
23 question that was primarily directed at someone else,
24 feel free to raise your hand and we will probably --
25 probably recognize you at the appropriate moment.

We are going to take a short break every hour or so, and we expect to finish before lunch. As I said, we have another Diablo Canyon matter later today, which is referred to us by the Commission, and that will begin either immediately after this proceeding, if we are able to finish up very promptly, or otherwise probably right after the lunch break.

Comments from any other Judges before we
take appearances?

10 All right. Let me ask counsel to
11 introduce themselves, and we'll start with you, Ms.
12 Curran.

13 MS. CURRAN: Good morning. And, again, my
14 apologies for being late. I am Diane Curran. I
15 represent the San Luis Obispo Mothers for Peace.
16 Sitting with me today is Dr. Mark Cooper, who is our
17 expert on energy alternatives. And also, I hope two
18 representatives of the Mothers for Peace who have come
19 from California to this hearing will be here a little
20 later, Jane Swanson and Linda Seeley.

21 || Thank you.

22 CHAIRMAN RYERSON: Thank you. Welcome,
23 Ms. Curran.

24 Next, for Pacific Gas & Electric Company.

25 MR. REPKA: Good morning. I am David

1 Repka with the law firm of Winston & Strawn on behalf
2 of Pacific Gas & Electric Company. And with me on my
3 left is my colleague Tyson Smith, and on my right is
4 Jearl Strickland, who is the Director of Technical
5 Services for PG&E at Diablo Canyon in San Luis Obispo,
6 California.

7 CHAIRMAN RYERSON: And welcome to you.

8 And, finally, the NRC staff.

9 MR. LINDELL: Good morning. This is
10 Joseph Lindell representing the NRC staff. And with
11 me on my right I have Daniel Straus, also representing
12 the staff, and Susan Uttal, also Cathy Kanatas behind
13 me, and we have several technical members of the NRC
14 staff in the audience who, if necessary, may come to
15 consult by the counsel table in response to questions.

16 CHAIRMAN RYERSON: Thank you.

17 Well, let's begin, then. Opening
18 statements? Ms. Curran. Not to exceed 10 minutes.

19 MS. CURRAN: All right. Thank you for the
20 opportunity to present oral argument in support of the
21 four contentions that San Luis Obispo Mothers for
22 Peace has submitted to the Licensing Board regarding
23 the inadequacy of PG&E's amended environmental report
24 to comply with the requirements of the National
25 Environmental Policy Act.

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The adequacy of PG&E's environmental report is an important issue, because the environmental report is a building block for the environmental impact statement that the NRC staff will eventually prepare regarding the Diablo Canyon license renewal application.

This supplemental EIS, which is supplemental to the original EIS, will not only be an important decision-making document for the NRC, but it will also be relied on by state and local government officials, who will have to make their own decisions with respect to environmental and economic regulation of Diablo Canyon.

20 And, therefore, having a reasonably
21 accurate and thorough environmental report is very
22 important to both state, local, federal decisionmakers
23 and the public. And, of course, this is set out in
24 Robertson v. Methow Valley Citizens Council, 490 U.S.
25 332 (1989).

1 Because of the role played by an EIS in
2 the environmental decision-making process, NEPA
3 requires that the environmental analysis presented in
4 an EIS must be rigorous and thorough. This
5 requirement is no less stringent for PG&E's
6 environmental report, because it is the backbone of
7 the EIS.

8 Here PG&E's environmental report fails to
9 satisfy NEPA's requirement for rigor and completeness
10 in addressing two important topics, alternative energy
11 and earthquake risks, and the mitigation measures,
12 mitigation or avoidance measures, for addressing those
13 impacts.

14 With respect to both issues, PG&E has
15 clung to outdated analyses and failed to address new
16 information that shows Diablo Canyon poses unnecessary
17 environmental impacts. They can and should be avoided
18 or mitigated.

19 With respect to our contentions on
20 alternative energy, PG&E claims to have updated its
21 original 2010 environmental report to address new
22 information about the availability of alternative
23 means of generating electricity with fewer adverse
24 impacts. But, in fact, PG&E is stuck in 1996 when the
25 NRC prepared its first generic environmental impact

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1 statement and said that the purpose and need of the
2 proposed action is to provide base load electricity.

3 So if you look at PG&E's environmental
4 report, it looks at stand-alone sources of base load
5 electricity and rejects each one of them, because by
6 itself it is not sufficient to supply electricity.
7 And then, it looks for kind of academic purposes at an
8 array of other -- a combination of other energy
9 sources, a little less than half natural gas, plus
10 solar, wind, and geothermal, and then basically says
11 those are -- that's a high carbon-emitting
12 alternative.

13 What our contention seeks is the
14 consideration of an alternative that would be a
15 combination of renewable energy sources, which of
16 course do not have the carbon impacts and would be
17 consistent with federal and state policy to reduce the
18 carbon impacts of electricity generation.

19 We are -- we have support of our expert,
20 Mark Cooper, who has detailed the ways in which the
21 country is undergoing an energy revolution, a
22 transformed energy economy, that in California is
23 surging, and that definitely within the time period
24 that we will be waiting for the termination of Diablo
25 Canyon's license will be available to replace -- more

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1 than replace the electricity generated by Diablo
2 Canyon.

3 Then there is a question of, well, what is
4 the significance of an environmental analysis like
5 this? Well, for one thing, we would -- we think it's
6 very important for the environmental report and the
7 EIS to have an accurate discussion of what are
8 reasonable energy alternatives to Diablo Canyon.

9 But there is an additional step that
10 should be taken, which is to compare the impacts of
11 continuing to operate Diablo Canyon versus relying on
12 renewable energy. And we'd like to see that analysis
13 in the environmental report, too, because we think
14 that the costs and environmental impacts of operating
15 Diablo Canyon outweigh the costs and environmental
16 impacts of alternative energy sources.

17 And the information about these impacts
18 can be gotten right out existing EISs. The continued
19 spent fuel storage GEIS has information about costs
20 and impacts of spent fuel storage, which is a major
21 issue, a major problem raised by renewing the license
22 for Diablo Canyon. So that's our second alternative
23 energy contention.

24 And I would like to talk for a minute
25 about our seismic risk contention. Mothers for

1 Peace's third contention challenges the adequacy of
2 PG&E's analysis of the cost effectiveness of measures
3 for avoiding or mitigating earthquake risk to the
4 Diablo Canyon reactors. Two events have made
5 earthquakes -- earthquake risk an extremely important
6 issue at Diablo Canyon. First is the discovery in
7 2008 of the shoreline fault, a fault that runs very
8 close to the Diablo Canyon reactors; and, second, was
9 the occurrence of the Tohoku earthquake in Japan in
10 2011, and the catastrophic accident at the Fukushima
11 Daiichi Nuclear Plant.

12 The Fukushima accident was in a different
13 part of the world, different geological circumstance,
14 but it showed -- it gave two important messages that
15 are universally applicable. One is that earthquakes
16 can be a lot bigger than what are predicted. And,
17 second, that they can cause enormous effects, enormous
18 impacts, such as the tsunami and the accident at that
19 reactor. So extremely important lesson to learn.

20 The NRC has made it a priority to study
21 earthquake risk conditions at all nuclear plants
22 around the country. PG&E has done multi-year -- a
23 multi-year study and now proposes to apply that to the
24 SAMA analysis. In our contention, which we filed
25 before PG&E's recent submission to the NRC of its

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1 application of the seismic hazard analysis to the SAMA
2 analysis, we raised the concern that PG&E proposes to
3 apply the results of its seismic hazard assessment to
4 the SAMA analysis, and we are very -- we think that's
5 not enough because PG&E has not done an adequate job
6 of either gathering data or analyzing the information
7 that it does have from its post-Fukushima analysis of
8 earthquake risk.

9 And this is laid out in our contention,
10 which is supported by the expert declaration of Dr.
11 David Jackson. I would like to just summarize the
12 main points for you of these criticisms of this
13 analysis.

14 First, of course, we know the shoreline
15 fault is very close to the Diablo Canyon reactors.
16 But for a seismologist to figure out where it is, you
17 want to know because the smaller earthquakes are more
18 likely to occur along the fault. And even a small or
19 moderate size earthquake could cause tremendous
20 damage.

21 If the fault is underneath the reactor or
22 very close to the reactor, you would not only get the
23 ground motion that all earthquakes would cause, but
24 you would also get the deformation and the shifting of
25 the ground that happens right at the earthquake site.

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1 PG&E has put seismic monitoring stations
2 only on the east side, or at least the report only
3 represents results from locating earthquakes on the
4 east side of the fault, and not on the west side.
5 Apparently, PG&E plans to install additional monitors,
6 but that should have been done. That is not enough
7 data to locate the fault.

8 Second, PG&E assumes that earthquakes of
9 all sizes occur along faults. And this is simply not
10 borne out with respect to larger earthquakes. There
11 have been a number of larger earthquakes in recent
12 times that have occurred at a distance from any known
13 fault. There was no association between these large
14 earthquakes and known faults. So this needs to be
15 addressed in the assessment.

16 And then, finally, it is inconsistent with
17 recent experience that PG&E relates the size of the
18 earthquakes that can happen, where they put a cap on
19 the size of the earthquakes they think can happen that
20 relates to the length of the fault.

21 As Dr. Jackson -- we explain in the
22 contention, the size of the earthquake can be related
23 after the fact to the size of the length of the
24 rupture after it occurs. But it is not possible to
25 look at a fault and predict from that what the size of

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the earthquake will be.

If PG&E addresses these three important problems, we think that it will affect the outcome of the probabilistic risk assessment that -- as it applies to the SAMA analysis, and that measures to avoid or mitigate earthquakes that have been rejected as too costly may actually turn out to be cost effective in the analysis.

It is very important to have reasonably accurate input through the SAMA analysis in order to get a reliable result. And this is not a matter of a difference of opinion between Dr. Jackson and the scientists employed by PG&E. This is a matter of what there is to be learned from recent earthquake experience and what are the best and most accurate methods for forecasting earthquakes.

PG&E identified a previously unaddressed risk of local intense flooding at the Diablo Canyon site. And this contention merely asserts that this is

1 new information that should be addressed in the SAMA
2 analysis. Are there measures -- cost effective
3 measures that could be used to mitigate the effects of
4 local intense flooding?

5 Now, the main argument against these
6 contentions used to be that the post-Fukushima
7 analysis was deterministic and that PG&E has already
8 evaluated the probabilistic -- the probability of
9 local intense flooding.

10 Well, whether or not that is the case, we
11 believe that that is something important that needs to
12 be addressed in the environmental report. The
13 flooding issue was an extremely important issue in the
14 Fukushima accident, and it is something that should be
15 addressed in environmental report. And if PG&E thinks
16 that it has been resolved, then it should be explained
17 in a way that is understandable and that the public
18 can comment on.

19 So, in short, we have here -- what we have
20 brought to the Licensing Board are two sets of issues
21 which relate in the sense that they raise significant
22 -- raise significant questions about the environmental
23 risk to Diablo Canyon posed by earthquakes, and
24 whether PG&E has really looked at mitigation measures
25 for reducing the risk of an earthquake at Diablo

1 Canyon.

This is a reactor -- set of reactors that,
since it was licensed, it has been known to be in a
very active earthquake zone.

5 And then, on the other hand, we have a set
6 of contentions asserting that it is not necessary to
7 continue operating Diablo Canyon in light of the
8 wealth of low environmental impact alternatives that
9 is available.

Now, whether or not that is the ultimate decision for Diablo Canyon by the decisionmakers, NEPA requires that at the very least it has to be discussed, it has to be put out for public comment, so that all of the decisionmakers -- federal, state, local -- and members of the public can make their own judgments and make their own decisions.

17 || Thank you.

18 CHAIRMAN RYERSON: Thank you, Ms. Curran.

19 And, again, I'd like to emphasize that we
20 have read the briefs, and we are giving you 10 minutes
21 to summarize your points if you'd like, or say what
22 you'd like in 10 minutes. But we have read the
23 briefs, so let's try to keep the initial statements to
24 as brief as possible.

25 Mr. Repka, are you next?

1 MR. REPKA: Yes. Thank you, Judge
2 Ryerson. Suffice it to say, PG&E believes that it has
3 provided in its environmental report analyses that are
4 sufficient to satisfy NEPA with respect to both energy
5 alternatives and the SAMA issues that the Mothers for
6 Peace have raised.

I am going to turn the microphone to my colleague, Tyson Smith, to address energy alternatives, and then he will return it to me to discuss the SAMA contentions.

11 MR. SMITH: Within our 10 minutes.

12 Mothers for Peace's first contention is
13 that ER is based on arbitrary and unreasonable
14 assumptions regarding the need for replacement
15 baseload energy, the viability of alternative energy
16 sources, and the combination of energy -- combinations
17 of energy sources discussed in the ER. None of these
18 bases supports an admissible contention.

First, the purpose and need under license renewal is to provide an option to meet future system generating needs as determined by the state and utility decisionmakers. This issue -- the issue in this case is not about whether that option should, in fact, be exercised. For the purposes of the NRC's NEPA review, Diablo Canyon currently provides

1 approximately 2,300 megawatts of baseload low carbon
2 electricity to PG&E's customers.

3 The purpose of license renewal -- of the
4 proposed action, which is license renewal, is,
5 therefore, to retain the option for Diablo Canyon to
6 supply baseload generation during the renewal term.

7 According to Mothers for Peace, this focus
8 on baseload capacity is unreasonable and outdated.
9 But the Commission has repeatedly and specifically
10 rejected alternatives challenging the reliance on
11 baseload generation as the purpose and need.

12 This part of the contention is also
13 untimely. Both the original and the revised ER have,
14 since the beginning, defined reasonable alternatives
15 as those that could replace the baseload generation
16 currently provided by Diablo Canyon. In this regard,
17 there is no change in the ER.

18 Citing Mr. Cooper's declaration, the
19 Mothers for Peace next claims that four times as much
20 capacity from distributed generation, energy
21 efficiency, and geothermal power will be available in
22 PG&E's service territory in the relevant timeframe.
23 This doesn't establish a genuine dispute with the ER.

24 First, and fundamentally, capacity is not
25 the same as baseload generation, which again was the

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1 purpose and need of the proposed action. Reducing
2 peak demand or shifting peak demand is not a
3 replacement for baseload generation.

4 Second, neither Mothers for Peace nor Mr.
5 Cooper substantively engage or disputes any particular
6 aspect of PG&E's discussion of energy efficiency,
7 which the ER in fact finds to be a reasonable
8 alternative to license renewal.

9 Third, Mr. Cooper claims that there is
10 more than 9,000 megawatts of geothermal power
11 development in California, with half of that in PG&E's
12 service territory. In fact, the USGS fact sheet that
13 is cited in the license renewal GEIS states that there
14 is only a five percent chance that 9,000 megawatts is
15 even available, and it says nothing about commercial
16 viability.

17 Mr. Cooper also provides no basis for
18 presuming that half of that would be available in
19 PG&E's service territory, nor does he dispute any of
20 PG&E's reasons for rejecting geothermal power as a
21 discrete energy resource, nor does he dispute its
22 contribution to the combination alternative in the ER.

23 The next aspect of Contention A involves
24 the combination alternative. This is also
25 inadmissible. First, contrary to Mothers for Peace's

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1 assertions, PG&E's combination alternative already
2 presumes that significant technological advances will
3 take place between now and the end of the current
4 operating licenses.

5 As explained in the ER, there are
6 operational and integration challenges associated with
7 meeting California's existing renewable power
8 requirements, and then replacing Diablo Canyon's
9 baseload generation with additional intermittent
10 resources.

11 Nevertheless, for the purposes of the ER,
12 PG&E conservatively considered an additional 2,400
13 megawatts of intermittent renewables in the
14 combination alternative. The combination alternative
15 also assumes, as Mr. Cooper suggests that it should,
16 that there will be dramatic technological developments
17 in energy storage.

18 Under California Assembly Bill 2514, PG&E
19 must develop 580 megawatts of energy storage by 2024.
20 The ER conservatively assumes that all of that energy
21 storage will be available to overcome the
22 intermittency of wind and solar generation to
23 approximate baseload power. In fact, much of that
24 procured energy will be of much shorter duration, on
25 the order of 15 minutes to a few hours, far short of

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1 that needed to overcome the low capacity factors for
2 wind and solar.

3 ER also concludes that storage is not
4 available in quantities or capacities to provide
5 baseload amounts of powers. Mr. Cooper, instead,
6 highlights battery technologies and notes only that
7 they may become the lowest cost peak resource. Again,
8 that is not the same as meeting baseload generation
9 requirements.

10 And, lastly, on this part of the
11 contention, there is no basis for presuming that
12 relatively inexpensive natural gas would not be a
13 significant part of any reasonable combination
14 alternative.

15 Natural gas makes up less than half of
16 PG&E's combination alternative, which is less than the
17 current generation mix in California, and it is
18 actually similar to or less than the actual generation
19 contribution from natural gas used to meet local area
20 requirements in Southern California after the closure
21 of San Onofre.

22 And as a final overarching point on this
23 contention, which is that under 10 CFR 51.95(c)(4),
24 license renewal is only denied if environmental
25 impacts significantly exceed that of almost -- all or

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1 almost all alternatives. Mothers for Peace, however,
2 never put forth any information showing that some
3 other combination would in fact have less impacts than
4 renewing Diablo Canyon's license.

5 Mothers for Peace's second contention,
6 Contention B, asserts that the ER isn't adequate
7 because it presents a "distorted and inaccurate
8 comparison of environmental impacts." The contention,
9 however, doesn't identify any particular alternatives
10 with small impacts that are excluded, and, as
11 importantly, it challenges generic findings that the
12 Commission has made and that are not subject to
13 challenge in this proceeding.

14 But, first, their focus is in some ways
15 not on the impacts of the alternatives, but, rather,
16 on the costs and economic cost of nuclear generation.
17 But under NRC regulations, the ER need not, nor does
18 the Supplemental Environmental Impact Statement,
19 required to address to economic costs and economic
20 benefits. That issue is left to state and utility
21 decisionmakers.

22 Mothers for Peace also disputes the ER
23 conclusions on waste management, but the impacts of
24 storing spent fuel during the license renewal term is
25 a Category 1 issue. The longer term impacts of spent

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1 fuel storage are addressed in a continued storage
2 rule, in a continued storage guise, and the Commission
3 has reclassified waste disposal as a Category 1 issue.
4 These findings are simply not subject to litigation in
5 this proceeding.

6 And, finally, this proposed Contention B
7 is also untimely. It is not focused on any new
8 information in PG&E's updated ER. It challenges the
9 same analysis that was in the original ER.

10 Mr. Cooper's declaration just rehashes
11 comments that he submitted with the NRC in 2013, with
12 EPA in 2014. PG&E's revised ER is not a second bite
13 at the apple with respect to issues that could have
14 been raised previously, and it doesn't reset the
15 timeliness clock for new contentions that are based on
16 previously existing information.

17 MR. REPKA: Okay. Turning to the SAMA
18 contentions, the first SAMA contention relates to
19 seismic issues. And Mothers for Peace argued that the
20 SAMA report is inadequate because it does not fully
21 integrate the March 2015 probabilistic safety hazards
22 analysis, and, second, that it doesn't significantly
23 address Dr. Jackson's points regarding seismic
24 hazards.

25 With respect to the first part, the SAMA

1 evaluation that was submitted in February of 2015
2 specifically includes probabilistic hazards
3 information based -- including the shoreline fault
4 based on the 2011 shoreline fault report.

5 The Mothers for Peace do not present any
6 reason why that evaluation is inadequate to address
7 NEPA. It reflects a thorough evaluation of
8 significant hazards. It is a snapshot in time, and
9 certainly NEPA doesn't require that a SAMA evaluation
10 be held open indefinitely because there may be more
11 information developed in the future.

12 In any event, PG&E on July 1st has already
13 submitted an update to the SAMA report that
14 specifically addresses the impacts of the March 2015
15 probabilistic seismic hazards concerns and
16 demonstrates that there is no change in the SAMA
17 results based on the seismic hazards inputs. So that
18 aspect of the contention is now moot.

19 Secondly, the seismic SAMA contention is
20 based on Dr. Jackson's concerns related to the Section
21 50.54(f) conclusions in the March 2015 seismic hazards
22 report. Suffice it to say, that is a challenge to the
23 Section 50.54(f) process, an issue that has been
24 thoroughly addressed in that process in accordance
25 with the Senior Seismic Hazards Advisory Committee

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1 process that was spelled out by the NRC. PG&E has
2 done nothing on seismic hazards in isolation. It has
3 been a fully open process where all of the views,
4 including Dr. Jackson's views on seismic sources and
5 characterizations and other issues, were evaluated.

6 There has been no showing by the Mothers
7 for Peace or Dr. Jackson that his views would be
8 beyond the uncertainties inherent in the seismic
9 hazards evaluation, and certainly, and most
10 importantly, there has been no showing as part of the
11 contention that any of those issues would impact a
12 specific SAMA evaluation.

13 The Commission has been very clear in a
14 number of cases related to SAMA contentions,
15 specifically in the Pilgrim case cited in our briefs,
16 and other decisions cited in the staff's briefs in the
17 same matter, that to be admissible a SAMA contention
18 must show a genuinely plausible impact on a specific
19 SAMA result as to whether or not SAMA will be cost
20 beneficial, and the Mothers for Peace contention is
21 completely lacking in that regard.

22 So as it stands, without any nexus to a
23 SAMA, it is purely a challenge to an issue that is in
24 a Part 50 current licensing basis process, and,
25 therefore, is beyond the scope of license renewal.

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1 The second SAMA contention related to
2 flooding issues relates to only one particular issue,
3 the local intense precipitation event. As discussed
4 in the flooding hazards report that the Mothers for
5 Peace rely on, that is an event that was evaluated
6 deterministically.

7 If addressed as a probabilistic matter,
8 which is what is relevant to a SAMA contention, an
9 event with a return frequency of 129 million years,
10 and there is certainly no showing by Mothers for Peace
11 as part of a contention or otherwise, that that issue
12 will make a difference in a probabilistic SAMA
13 evaluation, that it will lead to some SAMA being cost
14 beneficial.

15 In fact, the particular issue that was
16 evaluated in that report has been addressed by PG&E by
17 some interim corrective actions, mitigation measures,
18 and what we would be dealing with at this point is
19 whether or not there are some SAMA that would reduce
20 the residual risk. And, specifically, as the SAMA
21 report already shows, external flooding events have
22 insignificant -- are insignificant contributors to
23 core damage frequency, so there is absolutely no basis
24 to believe that that issue will lead to some new SAMA
25 or some new SAMA being -- new SAMA being identified,

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1 much less that new SAMA being cost beneficial.

2 So that contention fails to demonstrate a
3 genuine dispute with respect to the SAMA evaluation
4 that is a matter of record in the case.

5 CHAIRMAN RYERSON: Thank you, Mr. Repka
6 and Mr. Smith.

7 Mr. Lindell?

8 MR. LINDELL: Our opening statement will
9 be delivered by my co-counsel, Daniel Straus. And I
10 will be responding to questions on Contentions A and
11 C, and Daniel will be responding to questions on
12 Contentions B and D.

13 MR. STRAUS: The Intervenor's first
14 contention should be rejected, because it does not
15 raise a genuine dispute with the applicant's
16 environmental report. NRC regulations require
17 applicants for license renewals to, among other
18 things, compare the environmental impacts of license
19 renewal with appropriate alternatives.

20 The regulations do not specify which
21 alternatives the report should consider, just that the
22 applicant consider an appropriate reasonable range of
23 alternatives. Here the Intervenor argues that PG&E's
24 report is inadequate because it does not consider a
25 combination alternative utilizing energy efficiency,

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distributed generation, geothermal energy, and natural gas.

3 However, the contention should be
4 rejected. NEPA does not require consideration of
5 every possible energy alternative. Rather, it only
6 requires consideration of a reasonable range of
7 alternatives. The Intervenor has not demonstrated why
8 the range PG&E considered is unreasonable.

Rather, it has simply hypothesized an additional alternative and requested PG&E consider it. This is not sufficient to raise a NEPA challenge. If it were, and all it took to delay a major government action was identifying one more energy alternative to consider, NEPA would demand a near-endless amount of research, and the government would never be able to draw a line and make decisions.

17 Regardless, NRC case law makes clear that
18 to raise a genuine dispute in an alternatives petition
19 an intervenor must suggest an alternative that will
20 supply equivalent amounts of baseload power as the
21 nuclear plant by the time of license renewal.
22 Intervenor has not done so here.

23 Intervenor relies on data contained in
24 PG&E's environmental report, which concluded that
25 renewable sources alone could not provide sufficient

1 baseload power to replace Diablo Canyon. While the ER
2 acknowledged that California has substantial
3 geothermal potential, it has never stated that
4 potential would be realistically and commercially
5 available by the time of license renewal.

6 NEPA does not require consideration of
7 hypothetical or speculative alternatives. Intervenor
8 has not provided any factual basis sufficient to
9 dispute the range considered by PG&E under ER.
10 Because of this, the Intervenor's contention should be
11 denied.

12 Similarly, the Intervenor's second
13 contention raises issues beyond the scope of this
14 proceeding. Instead of challenging the adequacy of
15 PG&E's environmental report, the Intervenor's second
16 contention attempts to relitigate generic
17 determinations made by the NRC in other proceedings,
18 which the Intervenor had an opportunity to do and did
19 in fact participate in.

20 First, the Intervenor argues that PG&E
21 underestimated the cost of license renewal, because it
22 did not consider the high cost of storing spent fuel
23 after the license renewal term.

24 However, NRC regulations make two things
25 clear. A, environmental reports do not need to

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1 discuss the economic costs and benefits of license
2 renewal. NRC is not an economic regulator. State
3 public service commissions and utilities are better
4 suited to make determinations about what energy mixes
5 make economic sense. NRC's role is to make sure that
6 plants are safe and take a hard look at the
7 environmental impacts of its licensing actions.

8 And, B, environmental reports do not need
9 to address the environmental impacts of continued
10 storage of spent nuclear fuel. Those impacts have
11 been generically determined in the continued storage
12 GEIS and are deemed incorporated into any
13 environmental impact statement.

14 Second, Intervenor argues that PG&E has
15 seriously underestimated the risk of severe accidents
16 by using probabilistic risk assessments. However, the
17 NRC has already generically determined that the
18 probability of weighted consequences of atmospheric
19 releases from severe accidents are small for all
20 plants.

21 Thus, the Intervenor's contention should
22 be rejected. Relitigating issues that the NRC has
23 already generically determined elsewhere is beyond the
24 scope of this limited proceeding.

25 Likewise, the Intervenor's third

1 contention should be rejected. The Intervenor argues
2 that PG&E's SAMA analysis is inadequate because it
3 does not use the specific methodology suggested by Dr.
4 Jackson to calculate seismic risks. However, the
5 Intervenor's contention should be rejected. PG&E's
6 seismic hazard reevaluation report uses a consensus
7 methodology. Preparing the report, Dr. Jackson's
8 views were considered, but not all of his
9 methodologies were adopted.

10 NEPA review is constrained by a rule of
11 reason. That is, NEPA allows agencies to select their
12 own methodology as long as that methodology is
13 reasonable. NEPA environmental documents are not
14 meant to be research papers exploring the cutting edge
15 of scientific methodology. There will always be more
16 data that could be gathered.

17 Agencies must have some discretion to draw
18 the line and move forward with decision-making.
19 Otherwise, NEPA review would depend independent study
20 and resources, making government decision-making
21 impossible.

22 Here, PG&E seismic analysis considers the
23 major fault lines, and PG&E has evaluated whether
24 including information from its seismic hazard
25 reevaluation report would materially affect the SAMA

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1 analysis. A SAMA contention is only admissible if it
2 identifies erroneous conclusions in the SAMA analysis.

3 The question is not whether there are
4 better seismic methodologies or whether the SAMA
5 analysis can be further refined. Rather, the
6 questions are whether PG&E's methods were
7 unreasonable, and whether use of the Intervenor's
8 methods would help identify additional cost beneficial
9 SAMAs. The Intervenor has not made those
10 demonstrations here, and, therefore, has not shown
11 that its expert's methods raise a material challenge
12 to the SAMA analysis.

13 Finally, the Intervenor's last contention
14 related to PG&E's flood hazard reevaluation report is
15 inadmissible and should be rejected because it is
16 immaterial and does not raise a genuine dispute with
17 PG&E's SAMA analysis.

18 First, the flooding reevaluation report
19 answers a different sort of question than what we ask
20 in SAMA analysis. It used an extremely conservative
21 methodology to identify one worst-case scenario storm,
22 and it asks, in that storm, will there be flooding at
23 Diablo Canyon? That is very different from what we
24 want to learn from a SAMA analysis.

25 With SAMA, we are interested in

identifying procedural changes that would be cost beneficial to adopt. So we ask, what is the range of events that could happen? How likely are those events to occur? And how much will those events end up costing? At most, this new report provides a single data point. That is, it tells us a little bit more about what the worst-case storm at Diablo Canyon will be like.

9 But it is an extremely unlikely storm, a
10 storm that will occur only once in 129 million years.
11 A storm that unlikely won't add much cost risk to the
12 mix, and, therefore, won't materially affect PG&E's
13 SAMA analysis.

Second, the report deals with one type of external flooding. All external flooding considered together, which includes tsunamis, river flooding, and other sorts of events, combined, amount for just around one percent of the overall cost risk of Diablo Canyon.

Even a drastic change in the risk posed by local intense precipitation events would not likely lead to identification of additional cost beneficial SAMAs.

Finally, the Intervenor's contention is factually incorrect, in asserting that the SAMA

1 doesn't take into account intense precipitation
2 events. SAMA relies on PG&E's individual plant
3 examination of external events or IPTEE report. In
4 that report, PG&E analyzed the risk posed by intense
5 precipitation events. Thus, the Intervenor's
6 contention should be rejected.

7 The flooding reevaluation report would not
8 be useful in a SAMA analysis, because it analyzes an
9 extremely unlikely worst-case scenario storm.
10 Moreover, PG&E has already pledged to adopt mitigating
11 measures, and external flooding is a minor contributor
12 to the overall cost risk at Diablo Canyon.

13 Therefore, the Intervenor's contention
14 should be rejected because it does not raise a genuine
15 material dispute with PG&E's environmental report.

16 In conclusion, NEPA is governed by a rule
17 of reason. Environmental review should not demand
18 endless amounts of research, and the environmental
19 documents are not research papers that should be
20 continuously refined. Agencies have discretion in
21 deciding what issues to determine generically, and to
22 decide where to draw the line and make decisions.

23 The Intervenor's contention should be
24 rejected because they seek to relitigate issues the
25 NRC has decided to generically determine elsewhere,

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1 and because they fail to raise a material dispute with
2 PG&E's environmental report.

3 CHAIRMAN RYERSON: Thank you, Mr. Straus.

4 All right. I think we have time to at
5 least begin with a few questions before we take our
6 first break. And I'd like to begin I guess with you,
7 Mr. Repka. It is always interesting to me the
8 relationship between the applicant's environmental
9 report, which is part of a license application, and
10 controlled by the NRC's regulations, and an
11 environmental statement, which is really the
12 responsibility of the NRC and controlled by the
13 statutory requirement under NEPA.

14 And so I'm curious why -- why does a
15 licensee, such as PG&E here, update its environmental
16 report? Is that a requirement of the regulations, or
17 why do you do it?

18 MR. REPKA: There is a requirement to
19 update the license renewal application annually, not
20 necessarily the environmental report. The February
21 update was provided at the request of the NRC staff,
22 and based upon the timing and schedule of this
23 particular license renewal review. So that is why
24 that was provided, and that point that was an
25 opportunity to update the SAMA evaluation to include

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1 -- more specifically include data on the Shoreline
2 fault.

3 CHAIRMAN RYERSON: Is there any regulation
4 that you believe requires updating the original
5 environmental report?

6 MR. REPKA: I don't believe so, and I
7 believe this is an issue we have addressed in this
8 proceeding some time ago in connection with the
9 Fukushima issue. I will admit my recollection of
10 those discussions is shaky at this point, but --

11 CHAIRMAN RYERSON: Ms. Curran?

12 MS. CURRAN: Well, I just want to comment,
13 because I dealt with this regulation in another case.
14 It is in 51.53(c) in one of the many subsections.
15 There is a requirement that the applicant has to
16 update based on information of which it is aware.

17 So it is one of those things where it kind
18 of leaves it up to the applicant whether to do it or
19 not, and in this -- I think Judge Trikouros may
20 remember it was the Pilgrim case where the Intervenors
21 tried to enforce that as a requirement for the
22 applicant to update the environmental report. And I
23 think the Board said, "Well, the regulation isn't
24 written in a way that there was an objective
25 requirement or subjective."

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1 CHAIRMAN RYERSON: Well, I take it -- I
2 mean, we are being asked to look at the adequacy of
3 the environmental report. I take it no one is arguing
4 that we should be looking at the adequacy of the
5 original environmental report. We should be looking
6 at the adequacy of the update. Is that fair, Mr.
7 Repka?

8 MR. REPKA: Given that it has been
9 submitted on the docket, I would agree with that.

10 CHAIRMAN RYERSON: Okay. Ms. Curran, I
11 have a question for you about the period of commercial
12 viability in the near term. I think that's the
13 Commission's language, probably out of Seabrook. And
14 you defined that in your petition as within 10 years,
15 and I take it that comes from the time period that is
16 left on the current operating licenses? Is that where
17 that comes from?

18 MS. CURRAN: Yes. And it also -- I think
19 it is in the -- at least one of the decisions that --
20 either the Seabrook or the First Energy decision from
21 2012 where the Commission says it -- this technology
22 needs to be technically feasible now, or at the very
23 latest by the time the license expires.

24 CHAIRMAN RYERSON: And I think I may read
25 Seabrook a little differently. I mean, it -- again,

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1 this is one of the interesting aspects of our
2 regulations is that the regulations permit a licensed
3 renewal application well before a period of expiration
4 -- or expiration, or maybe even 20 years before I
5 think.

6 And so the question becomes, how do you
7 look at what commercially practicable alternatives
8 might exist, in this case say 10 years down the road,
9 sometimes it would be 20 years down the road. I mean,
10 is that -- is it fair to challenge an intervenor or
11 petitioner's application as being too speculative when
12 the regulations essentially put us in a position where
13 we are being asked to look at what might happen 10
14 years from now.

15 But I think the Seabrook decision, as I
16 recall it, answers that in a way that is not terribly
17 helpful to you, Ms. Curran. It suggests that even
18 though the period of the renewed license may not start
19 for a number of years, when we try to predict the
20 future, we are really powerless, other than pure
21 speculation, to do so other than pretty much based
22 upon what is available and commercially viable today,
23 or maybe next year or maybe the year after, but not 10
24 years from now. I mean, is that a fair reading of
25 what the Seabrook decision tells us, Ms. Curran?

1 MS. CURRAN: Well, I'm not sure. I'm not
2 looking at it, but I -- I guess I want to emphasize
3 that what we are proposing in our contention are
4 measures that are available in the next year or two.
5 This is not something that one needs to wait 10 years
6 to know whether it's going to happen. It's a current
7 -- what we're saying is that these alternative energy
8 sources are now available, or at least in very near
9 future.

10 CHAIRMAN RYERSON: Let me see if I
11 understand you. One of your criticisms of the
12 alternatives analysis is that it includes a
13 substantial component of natural gas. You would like
14 it analyzed without natural gas.

15 MS. CURRAN: That's right.

16 CHAIRMAN RYERSON: And you are now telling
17 me that what you are proposing would be commercially
18 viable in a year or two, but, I mean, is -- in
19 electricity in California, power production in
20 California, isn't 50 percent of the entire state
21 roughly now natural gas? Is that a fair estimate?

MS. CURRAN: The marginal additions have been much less than 50 percent.

24 CHAIRMAN RYERSON: Okay. But the current
25 use is about 50 percent.

1 MS. CURRAN: The sunk use is about 50
2 percent, but we're talking about future marginal use.

3 CHAIRMAN RYERSON: All right. Let me read
4 you -- I think your rejection of baseload power is --
5 raises some questions for me, because I think the
6 Commission, again, in Seabrook really dealt with that.
7 I think the Seabrook decision, which is CLI-12-05
8 says, "A petitioner ordinarily must provide alleged
9 facts or expert opinion sufficient to raise a genuine
10 dispute as to whether the best information today
11 suggests that commercially viable alternative
12 technology, or a combination of technologies, is
13 available now or will become so in the near future to
14 supply baseload power."

15 Now, I know your position is well taken,
16 that things are changing rapidly in the power
17 generation business. But, still, this Board I think
18 is -- is this Board bound by Seabrook? That's a
19 three-year old decision now, but aren't we bound by
20 what the Commission said in Seabrook?

21 MS. CURRAN: Well, remember that -- a
22 couple of points to make in response to your question.
23 Remember that the Seabrook case was decided in 2012
24 based on the 1996 GEIS. After that, in 2014, the NRC
25 revised that GEIS and explicitly acknowledged the

1 tremendous change going on in the energy field, to the
2 point where the NRC was unwilling to reach conclusions
3 in the GEIS about what combinations of energy would be
4 used in the future and said, "This is something that
5 is going to have to be done in individual licensing
6 cases."

7 And I also --

8 CHAIRMAN RYERSON: The date of the GEIS
9 is, again?

10 MS. CURRAN: It was 2014, springtime I
11 think. So there was a big change from the 1996 GEIS
12 to the 2014 GEIS. But even so, I think in a Seabrook
13 decision the Commission uses the phrase "baseload
14 demand."

15 So it's -- what we noticed in the
16 environmental report was at the beginning of the
17 discussion of alternative energy, PG&E -- and it's --
18 you know, it's not crystal clear what is going on.
19 It's a little bit confusing why all of these
20 alternatives are set up and then rejected.

21 And it appeared to us that what PG&E was
22 saying was we are going to look at each one of these
23 alternatives as standalone baseload. Just like Diablo
24 Canyon, we are going to look for single sources of
25 energy, and none of them can do the trick. None of

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1 them provide, by themselves, baseload energy, which I
2 think was the point of view in 1996.

3 But even in 2012, the Commissioners were
4 starting to talk about baseload demand. Can you keep
5 the lights on 24 hours even if you don't have a single
6 plant? And so that was -- that thinking was beginning
7 to change, and it really showed up in the 2014 GIS --
8 GEIS, where the Commission acknowledges there are a
9 wide variety of alternatives that can be used here.

10 So I don't think -- I don't think the 2012
11 decisions are -- those are good decisions about the
12 1996 GEIS. But they are not the last word about what
13 the 2014 GEIS is saying. You have to look at the
14 language of that GEIS.

15 CHAIRMAN RYERSON: Mr. Repka, what is your
16 view? Is this Board bound by Seabrook, or is it
17 really modified by the 2014 GEIS?

18 MR. REPKA: I'm going to turn to Mr.
19 Smith.

20 MR. SMITH: This Board is bound by the
21 Commission in the Seabrook decision, and the Davis-
22 Besse decision, and a number of other decisions, and
23 including the GEIS, which talks about the purpose and
24 need is to replace -- the alternative is to replace
25 baseload generation of the nuclear power plant.

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1 CHAIRMAN RYERSON: All right. I think
2 probably it would be best to proceed contention by
3 contention. So, Judge Arnold, did you have questions
4 on Contention A?

5 JUDGE ARNOLD: Sure do. My questions
6 pretty much -- I start out at page 1 of the petition
7 and go through.

8 So, let's see, on the petition page 2, the
9 very first sentence says, in reference to the amended
10 environmental report you state, "It does not evaluate
11 a reasonable array of energy alternatives." Did the
12 original environmental report evaluate a reasonable
13 array of energy alternatives?

MS. CURRAN: Whether it did or not, that
certainly the energy situation in 2010 was very
different than it is today. And I think that is why
PG&E was asked by the NRC staff to update the
environmental report. That's what -- you know, that's
the purpose of our contention is to address this
update, which was submitted after the 2014 GEIS was
written.

22 The first environmental report was
23 submitted before. It was submitted based on the 1996
24 GEIS, which incidentally the Commission originally
25 said it was going to update every 10 years. It took

1 almost 15 years, or, no, 20 years. It took a long
2 time to update that 1996 GEIS.

3 So we've got the 2010 environmental report
4 relying on the GEIS, on the 1996 GEIS. But, since
5 then, we've gotten a new GEIS that is quite different.
6 So we think that this amended environmental report is
7 kind of a new ballgame, and we really differ with
8 arguments that were made this morning that we didn't
9 address the amended environmental report.

10 We addressed the new portions of this
11 environmental report that claimed, "Okay, we're going
12 to look at a mix of alternative energy sources," and
13 we don't think they looked at an appropriate or
14 reasonable mix.

15 JUDGE ARNOLD: Okay. Let me ask the same
16 question of PG&E. Did your original environmental
17 report include -- was it a less reasonable array of
18 energy alternatives than in the updated?

19 MR. SMITH: No. No, Judge. The original
20 ER contained a reasonable discussion of energy
21 alternatives. Likewise, the updated ER continues to
22 describe a reasonable range of energy alternatives
23 that -- to license renewal.

24 JUDGE ARNOLD: So you don't think there is
25 anything new in the amended ER that this contention is

1 based on.

2 MR. SMITH: Well, we did add -- in the new
3 ER we did add a combination alternative. So that
4 degree -- I mean, they were both reasonable. And as
5 Ms. Curran points out, the license renewal, GEIS, has
6 been updated. And our updated, revised ER reflects
7 that fact. We continue to -- both the original and
8 the new GEIS both say that the amount of replacement
9 power must equal the baseload capacity previously
10 supplied by the nuclear plant.

11 So we have looked at reasonable
12 alternatives, and we have updated based on
13 technological advances that have taken place since
14 2009 when we submitted the original ER.

15 JUDGE ARNOLD: Thank you. Somewhat
16 building on questions that Judge Ryerson had, but I
17 will ask this without using the word "baseload." Now,
18 the existing two units at Diablo Canyon put out a
19 combined power of over 2,200 megawatts electricity,
20 day and night, regardless of weather, with an
21 availability of approximately 90 percent.

22 Why is it reasonable to expect PG&E to
23 accept a replacement that can't do the same?

24 MS. CURRAN: We are arguing that the
25 replacement can do the same, if it's a well-designed

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1 mix. That is -- I mean, that's the purpose of our
2 contention is to -- is to demand an evaluation of that
3 alternative as something that would provide -- meet
4 the demand to an equivalent degree.

5 JUDGE ARNOLD: So, essentially, when you
6 say -- let's see, PG&E's assumption that baseload
7 capacity must be replaced is unreasonable, you are
8 actually backing off from that position; you are
9 saying it's reasonable for it to be baseload, but it
10 can be done with alternatives.

11 MS. CURRAN: I want to clarify that
12 meeting baseload demand is different than having
13 baseload generation. And I think -- you know, there
14 is a problem with the word "baseload" and the words
15 that are used with it.

16 What we are talking about is ways to meet
17 the baseload demand without baseload generation.

18 JUDGE ARNOLD: Okay. I see the
19 difference.

20 MS. CURRAN: That's the real change here.
21 In the past -- and I -- I have submitted alternative
22 energy contentions before, and from year to year the
23 circumstances really change. I have submitted them
24 when storage was a big issue. How do we keep the
25 lights on at night, or when the wind isn't blowing?

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1 And really didn't -- the Board said, "Not
2 a good enough answer. You're talking about things
3 that are under development." And it's too long; we
4 can't predict well enough whether that will be
5 available.

6 And what we're saying in this contention
7 is, this situation has changed, and it's -- it has
8 arrived, basically. The energy -- we are in an energy
9 revolution. And this needs to be addressed in the
10 environmental report.

11 JUDGE ARNOLD: Okay. Thank you. On page
12 4, first paragraph, last sentence, "As discussed in
13 the Cooper declarations, estimates of achievable,
14 distributed generation, efficiency, and geothermal
15 alone indicate that four times as much capacity will
16 be available in the PG&E service territory in the
17 timeframe relevant to this license renewal request."

18 I have looked through the Cooper
19 declaration and couldn't find that anywhere in, you
20 know, a clear and concise form. Could you just give
21 me like a page number?

22 MS. CURRAN: It's Figure 1 on page 13.

23 JUDGE ARNOLD: Okay. Thank you.

24 On the bottom of page 4 it states, "PG&E's
25 combination scenario is arbitrary and unreasonable."

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Let me ask the staff, is there any NRC document that provides guidance on how the combination scenario should be selected?

4 MR. LINDELL: I have to consult with my
5 technical expert. My understanding is there is a
6 regulatory guide, Reg Guide 4.2, which does discuss
7 that.

8 JUDGE ARNOLD: So Intervenors, are you
9 saying, then, that -- have you looked at Reg Guide 4.2
10 to see how this combination satisfies or doesn't
11 satisfy that Reg Guide?

12 MS. CURRAN: No.

13 JUDGE ARNOLD: Neither have I.

14 MS. CURRAN: Things are -- you know,
15 things are -- I don't know when that Reg Guide was
16 written. But part of this contention is -- contention
17 is based on the changes in the energy field, and so we
18 are saying that in today's circumstances an
19 alternative energy analysis that doesn't consider a
20 100 percent renewable alternative isn't reasonable
21 anymore, whatever it might have been when the Reg
22 Guide was written.

23 JUDGE ARNOLD: And let me, finally, ask
24 PG&E, are you familiar with Reg Guide 4.2?

25 MR. SMITH: I am not familiar with Reg

1 Guide 4.2, but I think developing the combination
2 alternative, I think it's obvious that it is going to
3 be location-dependent. It is going to vary on what
4 part of the country the plant is in, what the
5 requirements are in that state with respect to
6 renewable power requirements, and so on.

7 And so what PG&E has done in its revised
8 ER is address the situation in California based on
9 California Public Utility Commission and California
10 Energy Commission documents, in developing the
11 reasonable combination alternative, and in evaluating
12 all of the other discrete energy alternatives.

13 JUDGE ARNOLD: Thank you.

14 On page 6 -- oh, go ahead.

15 MS. CURRAN: I just wanted to add a
16 comment that it is our understanding that it is
17 California's policy to get rid of a lot of gas
18 generation. That is an important consideration.

19 JUDGE ARNOLD: On page 6, second
20 paragraph, "The dramatic reduction in cost of
21 renewable technologies, and the even more dramatic
22 technological development and cost reduction in
23 battery information and control technologies, combined
24 with the continuing low cost of efficiencies --
25 efficiency improvements contradict PG&E's claims."

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Now, I'm wondering exactly how the cost --
cost and cost reduction of battery -- how does that
figure into an environmental assessment of
alternatives? I was of the understanding that they
don't look at costs initially.

MS. CURRAN: That's a good question, and
I agree that costs are, you know, by themselves, not
a consideration here. But cost has a role here,
because as costs come down, the technology becomes
more available. So it's related. Something that is
attractive in the marketplace is going to grow.
That's the point.

17 MS. CURRAN: What we are looking for is a
18 combination of renewables, efficiency, and demand side
19 management. We are not going to dictate to PG&E what
20 particular combinations, but that is the element --
21 those are the elements of what we are looking for.

22 JUDGE ARNOLD: Without having a specific
23 combination in mind, it would seem to be difficult to
24 say this combination should be evaluated because it's
25 environmentally preferable. You're just saying that

1 you believe somewhere in the entire space of
2 renewables, efficiency, and demand side management
3 there is some combination that would be better?

4 MS. CURRAN: Well, this -- the combination
5 of these elements would meet baseload demand. That's
6 an important factor. And what we're comparing it to
7 is the preexisting options that were generally
8 considered available. One is continued operation of
9 Diablo Canyon. Another is some mix, heavy on natural
10 gas, but some renewables in there. And then, what
11 we're saying is you can do this with renewables that
12 -- they don't have the carbon impacts, which -- and
13 they don't have the radiological impacts.

14 So this is -- under NEPA, this is a
15 reasonable thing to look at, because NEPA is trying to
16 avoid environmental impacts.

17 So, you know, we are not going to dictate
18 to -- PG&E has got an array of things to look at, and
19 we will be glad to talk to them about what makes
20 sense. But I don't think we are in a position to
21 dictate what it ought to be, except to say you can do
22 this without the carbon impacts; you can do this
23 without the radiological impacts.

24 MR. SMITH: Well, if I may add a point,
25 I'm a little confused by their claim to be seeking a

1 reasonable alternative that consists of demand side
2 management, energy efficient, when that is in fact an
3 alternative that the ER finds to be a reasonable
4 alternative to license renewal.

5 On page 7.2-6, we conclude that demand
6 side management and energy efficiency is a reasonable
7 alternative. We evaluated it and compared it to
8 license renewal. I'm very confused. That doesn't
9 appear to be -- as a result, there is no dispute with
10 a higher ER on that point, if that is what apparently
11 their claim they are making today is.

12 MS. CURRAN: Our understanding of the
13 demand side management is that they were looking at
14 that in combination with the other sources, including
15 natural gas. So that wasn't -- it wasn't by itself.

16 MR. SMITH: That's wrong. On page 7.2-6,
17 PG&E concludes that demand side management and energy
18 efficiency is one of the alternatives that meets
19 system generating needs.

20 JUDGE ARNOLD: In your combination
21 alternatives, you had solar -- amongst other things,
22 you had solar, you had wind, you had geothermal, and
23 you had natural gas. Now, that combination turned out
24 not to be environmentally preferable.

25 But I saw two impacts, one was -- you had

the carbon dioxide, but the other was land use. If you got rid of the natural gas, wouldn't it still be non-preferable due to the land use?

4 MR. SMITH: Well, we didn't perform that
5 specific analysis, but you raise a very good point.
6 If you don't have natural gas, you are still going to
7 have to have the impacts associated with scaling up
8 one of the other technologies.

9 And for this reason, that is why our
10 combination alternative is not intended to address
11 everything, but to look at a range and highlight what
12 is a reasonable combination, we believe based on, you
13 know, making various conservative assumptions about
14 technological development.

15 JUDGE ARNOLD: Thank you.

16 CHAIRMAN RYERSON: I think -- we have gone
17 on for an hour and 20 minutes at this point. So let's
18 take a break and then Judge Trikouras will begin with
19 his questions on Contention A. We will be back --
20 let's be back promptly at 10:30.

24 CHAIRMAN RYERSON: Please be seated.
25 We're back and we will proceed with some further

1 comments on Contention A from Judge Trikouros.

2 So, Ms. Curran?

3 MS. CURRAN: Well, before you go on, Judge
4 Ryerson, I just wondered if I could go back to the
5 environmental report, the page we were discussing,
6 7.2-6, where PG&E is discussing the demand side
7 management issue.

8 CHAIRMAN RYERSON: Yes.

9 MS. CURRAN: And if -- demand side
10 management and energy efficiency, and yet we looked at
11 this again and, yes, PG&E seems to be saying that
12 demand side management and energy efficiency could be
13 placed in Diablo Canyon.

14 Well, if that's the case, why wasn't that
15 analyzed? Why weren't the impact of that analyzed in
16 the environmental report? Now, we would like to -- we
17 don't think this is a fairly feasible alternative or
18 the one that makes the most sense, but something that
19 should have been -- this is an example of what could
20 have been, should have been discussed in the
21 environmental report in more detail.

22 CHAIRMAN RYERSON: Mr. Smith, do you have
23 a comment on that, at this time, do you want her to
24 address it later?

25 MR. SMITH: I think this is an easy one to

1 address. We addressed in our ER a number of
2 alternatives that we found to be reasonable
3 combinations. We then took the next step, analyzed
4 the environmental impacts of those reasonable
5 alternatives as reflected in our ER. Collected a
6 discussion of demand side management energy
7 alternatives on 7.2-22. It incorporates NRC's
8 analysis from some prior Environmental Impact
9 Statements and we compare that again in the Tables 8.
10 -- 8-1 and 8-2.

11 So I mean it sounds like the Mothers for
12 Peace are looking around for some hook they can get
13 here, but this is clearly not something that was
14 raised in their initial petition. Obviously, PG&E has
15 addressed, in fact, the issues that they are raising.
16 There is no dispute here.

17 CHAIRMAN RYERSON: All right. Thank you.
18 Let's continue then with the questions from Judge
19 Trikouros on Contention A.

20 JUDGE TRIKOUROS: Yes, most of my
21 questions got answered, asked and answered earlier,
22 but I do have some follow-up.

23 And those of us who are engineers
24 understand that planning and designing are one thing
25 and doing is entirely different.

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1 This concept of solar wind, or I should
2 say in general, distributed energy sources replacing
3 baseload is without backup of natural gas. Is this
4 occurring anywhere in the United States or in the
5 world today?

6 MS. CURRAN: Yes. It's occurring in the
7 United States and all over the world.

8 JUDGE TRIKOUROS: Would you be more
9 specific? I'm talking about the total elimination of
10 central power stations and a large region only
11 operating with distributed energy sources with no
12 backup.

13 MS. CURRAN: There are places in Europe
14 where they are at 75 percent. And California is on
15 the path to being able to do the same.

16 JUDGE TRIKOUROS: Okay. In Mr. Cooper's
17 declaration, he referenced a study on your -- that was
18 a study of 100 percent renewable penetration in
19 Europe, I believe. And in that study they mentioned
20 that large amounts of transmission distribution would
21 be required, that do not exist today, that would have
22 to be built. And they talk about the relative infancy
23 of the storage systems and they talk about backup.

24 And backup is rather significant. I mean,
25 if you actually look at the figures that are in there,

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1 they never tell you what it is, but it is defined as
2 backup. And it's significant. So it isn't clear to
3 me, and it's your -- I mean, you referenced the study,
4 Mr. Cooper, that a transition from where California,
5 Pacific Edison Electric is today to an elimination of
6 Diablo Canyon entire can be accomplished in such a
7 short time, less than 10 years without the use of
8 backup.

9 So I would like to understand how that
10 might happen.

MS. CURRAN: There are similar studies in the U.S. that have reached the same conclusion and the State of California does not have to have 100 percent renewable in order to eliminate Diablo Canyon.

15 JUDGE TRIKOUROS: I understand. I
16 understand. All right. Let me ask this. In your
17 Figure 3 of the declaration, there is a figure that
18 shows the -- by the way, I think that figure should be
19 gigawatt hours not megawatt hours, but the -- in that
20 figure, it shows that solar and wind are producing as
21 much energy on a yearly basis as Diablo Canyon.

22 And specifically, Diablo Canyon because I
23 think San Onofre was not operating in the period we
24 are talking about. So we are talking 2 gigabytes --
25 I always do that, 2 gigawatts of power and that there

1 is enough solar wind energy to, basically, replicate
2 2 gigawatts of power.

Now, if I looked at how much solar and wind capacity was in place in California in 2013, which is what we are talking about, based on your declaration, it was over 10 gigawatts. So what we would be talking about then is installing another 10 gigawatts of solar and wind in the next few years. Is that correct?

10 MS. CURRAN: As you go forward you get
11 more efficient by geographic technological diversity.
12 Much more intensive management matching supply and
13 demand. The California utilities have estimated they
14 can get to 50 percent without undermining the
15 liability.

MS. CURRAN: The bigger the balancing area, the less excess capacity.

23 JUDGE TRIKOUROS: Say that again. I'm
24 sorry.

25 MS. CURRAN: The bigger the balancing

1 area, the less excess capacity you need. Transmission
2 lets you build less capacity.

3 JUDGE TRIKOUROS: Please repeat that.

4 MS. CURRAN: Transmission lets you build
5 less capacity, because the wind and the solar balance
6 each other out across a geographic area.

7 JUDGE TRIKOUROS: Okay. But on a big
8 picture level, we are talking about a significant
9 amount of solar and wind facilities and we are talking
10 about a significant amount of transmission and
11 distribution at work.

12 MS. CURRAN: Yes, you are and it's less
13 costly than nuclear.

14 JUDGE TRIKOUROS: Okay. And are we also
15 talking about modifications to the states, well, I
16 don't know what they call the grid out there, the
17 Western Grid, I guess. Would this involve
18 modification to the Western Grid in terms of smart
19 equipment and that sort of thing?

20 MS. CURRAN: Nothing beyond what
21 California is already doing. California is very much
22 ahead of other states.

23 JUDGE TRIKOUROS: Just as a final comment,
24 it is your estimation that this is achievable with a
25 very, very, very high probability within the next few

1 years?

2 MS. CURRAN: Absolutely.

3 JUDGE TRIKOUROS: All right. PG&E have
4 any comments on that?

5 MR. SMITH: I just have one comment. I
6 think it goes to some of your earlier points and also
7 dovetails nicely with what Judge Arnold was asking
8 about earlier. And just for a point of comparison,
9 the two largest solar rays in California are operated
10 and provide power to PG&E. They current provide --
11 makeup over 9 square miles of panels. They provide
12 less than 10 percent of the power of Diablo Canyon.

13 That just gives you an idea of the scale
14 that you are talking about would be necessary to
15 replace the generation of Diablo Canyon and that's
16 just not even worrying about the need to supply
17 baseload power for transmission.

18 JUDGE TRIKOUROS: And again, my proviso
19 was or your interest was doing this with no backup,
20 meaning no additional natural gas generation.
21 Currently, PG&E if they were going to build 10, I
22 believe, gigawatts of additional solar wind, based on
23 their previous behavior in solar farms that I'm aware
24 of, and I'll ask them directly, would require a
25 significant natural gas backup.

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1 Now, am I correct or is that -- do you
2 want to comment on that?

3 MR. SMITH: I don't have specific
4 knowledge about that. But I think your point, larger
5 point is well-taken.

JUDGE TRIKOUROS: So that's the only --
that's the proviso here is that when you talk about
doing this, you are talking about doing this in this
short period of time of less than 10 years with no
natural gas backup, right? And that was the going in
argument, right?

12 MS. CURRAN: Could you give me a minute?
13 Backup for renewables has very much become batteries
14 and other kinds of storage, but that's the important
15 point we are raising. And that's what we would like
16 the environmental report to examine that, because that
17 is a new technology that is developing very rapidly
18 that answers that question.

19 In the past, yes, you couldn't do it
20 without natural gas, because you didn't have any other
21 way to store -- you didn't have a way to store the
22 electricity, but that's not the case now.

23 JUDGE TRIKOUROS: Okay.

24 MR. SMITH: The ER addresses that very
25 point. California has varying requirements for

1 utilities in the state to procure about between 1300
2 and 1400 megawatts that will be in place by 2024 and
3 that's less than approximately half the capacity of
4 Diablo Canyon.

In reality, 580 megawatts of that are going to be -- PG&E needs storage area and for an accommodation alternative and then that every bit of that would be varied with wind and solar to approximate baseload. But in fact, I noted earlier that the actual duration of those battery backups or the energy storage is going to be on the order of 15 minutes to a few hours, far short of that needed to accommodate the 25 and 35 percent capacity factors of solar effectively.

15 JUDGE TRIKOUROS: Right. And I think the
16 -- what we are hearing here is that within the next
17 few years, that capability will be greatly enhanced,
18 storage capability will be greatly enhanced, that's
19 why I'm here.

20 MS. CURRAN: And that will enhance the
21 production of this, the availability of the solar
22 energy to have that storage.

23 JUDGE TRIKOUROS: It's not -- I don't
24 think it's in dispute whether or not there will be
25 great advances in this area in the future, right? I

1 think that's a given. But what is in question right
2 here and now is can that level of penetration be
3 achieved with 100 percent probability in the next few
4 years. That's the question.

5 MS. CURRAN: Well, Judge Trikouros, could
6 I just respond for a minute to what you just said?
7 Because I don't think that -- we have a burden of
8 raising a material dispute here, but I don't think
9 that it's -- we will have to prove it. We have to put
10 enough evidence in to get admission of a contention
11 that this is a real alternative that deserves study.
12 It's a question of whether we have raised a material
13 dispute with PG&E and not whether we have proved it.

14 JUDGE TRIKOUROS: I understand. But the--
15 if I went back to the baseload issue, which is really
16 what we are talking about is replacing baseload power,
17 then it seems to me that that is something that we
18 have to be fairly certain of in terms of when did the
19 solar replace the baseload? And so I think that it is
20 important to be able to have confidence that that
21 could be achieved.

22 Any decisions by the Commission support
23 that.

24 CHAIRMAN RYERSON: Any further questions?
25 Judge Arnold?

1 JUDGE ARNOLD: I have just one further
2 question kind of on the same lines as the last
3 question I asked. I'm looking at Table 8-1 of the
4 revised environmental report and looking at the
5 combination alternatives, I see that the land use
6 impact is moderate to large, whereas the air quality
7 is small to moderate. So if you get rid of the
8 natural gas, all you are going to really do is change
9 the air quality impact from small to moderate to just
10 plain old small.

11 And that -- you still have the large land
12 use that makes it less preferable. So in light of
13 that, do you have any comment on that?

MS. CURRAN: The extent of the land use
would depend upon the methodology used here. PG&E is
looking at an intensive land use alternative, but the
other -- it is a major policy, federal policy and
state policy to reduce carbon emissions and that's not
-- one of the highest priorities, maybe the highest
priority for our Government. So this is extremely
important in terms of alternatives and their impacts.

22 MR. SMITH: Just a minor comment there.
23 The Mothers for Peace's vision of what the energy
24 future may look like and whether or not that comes to
25 pass in the future or not, it doesn't preclude Pacific

Gas & Electric or state decision makers from deciding
that they want to go another path.

What we are talking about here is
comparing the impacts for purposes of the NRC's NEPA
analysis of license renewal, extending the license for
Diablo Canyon to other reasonable alternatives,
whether or not that fact occurs, whether license
renewal goes -- the plan operates in to the license
renewal period, that's something that is left to state
and utility decision makers.

11 || CHAIRMAN RYERSON: Ms. Curran?

12 MS. CURRAN: We are not arguing that this
13 contention that we can tell PG&E what to do. We are
14 arguing for full disclosure in the environmental
15 report, what the options are, so that everyone who is
16 concerned about Diablo Canyon proposing another 20
17 years of operation can see what are the options. Can
18 we live without it? What would happen if we relied on
19 a renewable energy portfolio? How would that affect
20 the carbon budget? How would that affect -- would
21 that reduce radiological impacts?

That's information that we think the public and decision makers are entitled to have.

24 CHAIRMAN RYERSON: Ms. Curran, I have one
25 further point and then I think we are probably ready

1 to move on to Contention B. I think your statement is
2 very well-taken. This is not an evidentiary hearing
3 today. We are at a contention admissibility stage. We
4 don't decide issues, a thumbs up or thumbs down, on a
5 pure merits point of view. And it sometimes gets
6 particularly confusing in the environmental area of
7 where there is a reasonableness standard.

8 If we were to have a hearing, the issue
9 for the hearing would be the reasonableness of the
10 analysis in the ER. Still, I believe that our
11 regulations require, do they not, that a contention
12 assert a plausible and sufficiently-supported argument
13 that the ER is not reasonable. Do you disagree with
14 that standard?

15 MS. CURRAN: No.

16 CHAIRMAN RYERSON: Okay. Very good.
17 Well, let's move on to Contention B. I don't think we
18 will have a lot of questions on that. Let's start
19 with Judge Arnold.

20 JUDGE ARNOLD: All right. Starting out
21 with the statement of contention on page 8, the second
22 paragraph or first paragraph, second sentence "PG&E
23 arbitrarily excludes from its comparison of
24 environment impacts, Table 8-1 and 8-2, energy
25 alternatives with small impacts and misrepresents some

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1 of the impacts of renewing Diablo Canyon license as
2 small."

3 Now, I want to look at the second half
4 where you are saying they are misrepresenting some of
5 the impacts of renewal. I look at Table 8-1 and 8-2
6 and it's conveniently -- all the new stuff in the two
7 tables is in red. And everything that is old is in
8 black.

9 Now, when you say the impacts of renewing
10 Diablo Canyon's license, you are talking about the
11 column on the left, Proposed Action License Renewal.
12 And as I look down that, the only thing I see that has
13 changed is the number of permanent employees, which
14 means everything else in that table is the same as it
15 was in the original environmental report.

16 So are you going back and making a new
17 challenge against the old environmental report?

18 MS. CURRAN: Well, this environmental
19 report is a combination of old and new. So in this
20 particular -- with respect to this particular issue,
21 we have a new impact determination in the continued
22 storage GEIS. It came out in 2014. That this is one
23 of the issues raised in the contention that there are
24 a number of impacts of continued storage after license
25 termination that are bust in this GEIS that, of

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1 course, wouldn't have appeared in the 2010
2 environmental report, but we are saying should be in
3 this one, because this is new information.

4 We are not challenging the GEIS, but I
5 think PG&E makes an argument we don't need to talk
6 about environmental impacts of continued storage, they
7 are already discussed. What the rule says, it's 10
8 CFR 51.23(d), it says "The findings of the continued
9 storage GEIS are incorporated into individual reactor
10 environmental report classes."

11 So there are findings that we cite that
12 are in the GEIS about the significance of impacts to
13 continued storage that we think should go be weighed
14 in this table.

15 JUDGE ARNOLD: Well, I would like to get
16 staff's opinion on this. It appears that much of the
17 new information upon which the contentions are based
18 are in the Generic Environmental Impact Statement and
19 not in a revision of the environmental report.

20 In order for a contention to be timely
21 based upon the GEIS, wouldn't it had to have been
22 proposed, what, within 60 days of the GEIS?

23 MR. STRAUS: Yes.

24 JUDGE ARNOLD: Okay.

25 MS. CURRAN: But I have a different

1 || opinion.

JUDGE ARNOLD: Okay.

3 MS. CURRAN: Judge Arnold, we considered
4 ourselves bound by the 30-day requirement after the
5 revised, the amended environmental report was filed.
6 That this was a combination package. It wouldn't have
7 made much sense for us to challenge the old
8 environmental report when the continued storage GEIS
9 came out, because we didn't have the revised
10 alternative energy analysis, that's what really the
11 focus of this is.

12 The question about what is in the
13 continued storage GEIS relates to the revised analysis
14 in the environmental report. We wouldn't have gotten
15 very far just raising that all by itself in relation
16 to the 2010 environmental report.

17 JUDGE ARNOLD: Okay. On page 9, last
18 paragraph, second sentence "PG&E apparently restricts
19 its analysis of environmental impacts to the license
20 renewal term." Let me just ask staff, is that
21 appropriate or is that something they shouldn't do?

22 MR. STRAUS: Yes, that's appropriate.

23 JUDGE ARNOLD: And do you know where in
24 the rules it states that?

25 MR. STRAUS: It's in -- well, the review

1 is over the license.

2 JUDGE ARNOLD: Okay. And let's see, the
3 next paragraph says "Tables 8.1 and 8.2 characterize
4 the environmental impacts of waste management as
5 small." Do you believe that to be appropriate?

6 MR. STRAUS: Table B.1 for -- during the
7 term says that it's a Category 1 issue as has been
8 determined, that means it has been determined
9 generically and doesn't have to be included.

10 JUDGE ARNOLD: Okay. I'll turn it over to
11 you, Ms. Curran.

12 MS. CURRAN: Well, all these environmental
13 impact analyses are incorporated, and that's what the
14 rule says, into the environmental report. That
15 doesn't mean that they don't have to be mentioned if
16 they are relevant.

17 If you are doing an impact -- a comparison
18 of impacts, of course, you are going to look at the
19 EIS that has been written about some impact to see
20 what was it and you are going to talk about it, that's
21 what the whole point of the Generic Impact Statement
22 is. It doesn't have to be done all over again, but it
23 does -- it is relevant to discuss what the conclusion
24 was if you are comparing the impacts of different
25 alternatives, otherwise it wouldn't make sense.

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1 It's not -- you know, by doing the GEIS,
2 the NRC didn't say well, you never have to talk about
3 what is in the GEIS ever no matter whether it is
4 relevant to some other part of your analysis. It says
5 use this. Use the work that we did. We did it
6 generically. Apply it to your individual cases.

7 JUDGE ARNOLD: Well, let me ask staff now.
8 Did this very question, the GEIS comes out and says it
9 is incorporated into all of the Environmental Impact
10 Statements. Didn't the Commission recent address this
11 in some CLI?

21 And in general, Category 1 issues do not
22 need to be addressed. You know, do not need to be
23 addressed again. And the discussion of those issues
24 is found in the guidance, whether it is, you know, the
25 License Renewal Guidance or if we are talking about,

1 you know, post-license renewal term, then the
2 continued storage GEIS.

3 MS. CURRAN: Okay. Would you mind if I
4 just provide something, Judge Arnold?

5 JUDGE ARNOLD: Sure.

6 MS. CURRAN: I think that that provision
7 says that these impacts don't have to be discussed
8 again. What it means is that in an individual case
9 they don't need to be reanalyzed. You don't need to
10 do it twice. It has already been done. But having
11 been done, it is not irrelevant to discuss what was
12 concluded.

13 JUDGE ARNOLD: Thank you. Okay. On page
14 11, the very first sentence, according to the license
15 renewal GEIS, the category assigned to spent fuel
16 disposal is "uncertainty." Can you bring me to
17 anything in Appendix B, in the table that designated
18 spent fuel disposal as a Category 2 issue? Does that
19 exist?

20 MS. CURRAN: Well, it's, again, a Category
21 1 issue. In other words, in individual cases, it's
22 not necessary to reevaluate that impact. So the NRC
23 is saying we made a determination and that
24 determination is binding on individual cases.

25 But our point is that the Commission

1 didn't say the impact is small. The Commission said
2 it is uncertain, which must mean it is bigger than
3 small or else they would have said it's small.

4 MS. UTTAL: Your Honor, if I might.

5 JUDGE ARNOLD: Yes? Go ahead.

6 MS. UTTAL: The reason why the GEIS says
7 that it is uncertain is because at the time there was
8 I believe a moratorium on issues having to do with
9 waste confidence and the Commission had not come down
10 with its opinion on waste confidence, you remember it
11 went up to federal court, and the GEIS had not come
12 down on ---- whatever they call it. The new term for
13 waste confidence. So that the -- the only thing that
14 the staff could do in preparing the license renewal
15 GEIS was to say that it was uncertain because we
16 hadn't heard from the Commission as to what was going
17 to happen in waste confidence.

18 JUDGE ARNOLD: So you are saying,
19 basically, we should be looking at the continuing
20 storage rule rather than GEIS for this?

21 MS. UTTAL: Continuing storage as far as
22 -- that's the new term. Yes, because time has moved
23 on and things have changed and the Commission has
24 spoken on continuing storage and that's the state on
25 continuing storage today.

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1 MS. CURRAN: Excuse me.

2 JUDGE ARNOLD: Yes?

3 MS. CURRAN: I'm sorry. Were you
4 finished?

5 MS. UTTAL: I do tables.

6 MS. CURRAN: Oh, okay.

7 MR. STRAUS: Table B.1 includes a
8 conclusion that says "The impacts of spent fuel
9 disposal should not be sufficiently large to require
10 the NEPA conclusion for any plant, that the option of
11 extended operation, 10 CFR Part 54, should deal with
12 it.

13 JUDGE ARNOLD: Thank you.

14 MS. CURRAN: But I just want to -- I'm
15 sorry to say I disagree with Ms. Uttal about the
16 reason for the statement that the impacts are
17 uncertain. That word appears in the final rule. It
18 was also in the rule when the -- during the suspension
19 of licensing, but it has reappeared in the final rule.
20 And I think the reason has more to do with the fact
21 that the Commission thinks it won't know until they
22 have a final EIS for Yucca Mountain what they are
23 going to say about the impact. I think that's more
24 the reason.

25 And Mr. Straus is right that the wording

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1 says "not big enough to warrant denial of the license
2 renewal permit." But what does that mean? It means
3 it is bigger than small. So we wanted to put that in
4 the record. That ought to go in Table 8.

5 JUDGE ARNOLD: Any other comments on this
6 question? Okay. On page 12 the second paragraph
7 starts out "Finally, PG&E distorts the comparison of
8 impacts by characterizing the human health and
9 socioeconomic impacts of renewing the Diablo Canyon
10 operating license as small without acknowledging that
11 this assessment is based on probability, risk
12 estimates that are fraught with uncertainty."

13 Is it normal in the Environmental Impact
14 Statement to put in with every assessment some
15 characterization of the uncertainty? I'll let you go
16 first.

17 MS. CURRAN: No, it isn't. But this is
18 our common sense argument. We have here a reactor in
19 an active earthquake zone and the NRC certainly has
20 ways that that can be disregarded, but we put it in
21 for the record that this something that ought to be
22 taken into consideration. This is a dangerous site
23 for a nuclear power plant, no doubt about it.

24 JUDGE ARNOLD: Well, I'm just thinking.
25 This is a prediction of events, you know, 20 to 30

1 years out in the future and it just doesn't appear to
2 me that any such predictions are not fraught with
3 uncertainty. I mean, if they weren't, we would have
4 fusion and flying cars.

5 So why would we expect an Environmental
6 Impact Statement to be more certain than any other
7 prediction?

8 MS. CURRAN: No. I don't think we are
9 saying that. What are the consequences. What are the
10 impacts? Are they as great as they could be here?
11 Then uncertainty becomes more important.

12 JUDGE ARNOLD: That was my last question.

13 CHAIRMAN RYERSON: Mr. Trikouros?

14 JUDGE TRIKOUROS: I have none.

15 CHAIRMAN RYERSON: Let me just clarify one
16 thing. On both this Contention B and I think the same
17 is true with the other contentions, the NRC staff is
18 not challenging timeliness. Is that correct?

19 MR. STRAUS: No, we didn't challenge
20 timeliness in our brief.

21 CHAIRMAN RYERSON: Okay. But PG&E is
22 challenging timeliness?

23 MR. SMITH: Yes, Your Honor, for some of
24 the bases we are.

25 CHAIRMAN RYERSON: All right. Let's move

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1 on.

2 MR. LINDELL: I would just add that, you
3 know, upon consideration of the issues, our position
4 is that Contention A is timely or we are not
5 challenging timeliness on Contention A. Contention B,
6 you know, although we do not challenge it, it does
7 appear to be out as it is based on -- it is not based
8 on changes to the environmental report. It is,
9 essentially, based on the changes to the original
10 report.

11 CHAIRMAN RYERSON: The position in your
12 briefs, however, is you are not challenging?

13 MR. LINDELL: That is correct.

14 CHAIRMAN RYERSON: All right. Moving to
15 Contention C. Again, I don't think we have a lot of
16 questions on this one, on SAMA contentions.

17 Ms. Curran, I do have one general question
18 really for you. And what's your response to the
19 argument that SAMA evaluations don't have to be
20 continually deferred in anticipation of new
21 information? We have a somewhat fluid situation here
22 it seems to me where you are getting continual new
23 information.

24 We will start with the seismic issue,
25 Contention C, and the licensee is saying, I think,

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1 well, we don't have to constantly be updating this
2 every moment there is new information. What's your
3 response to it?

4 MS. CURRAN: You are referring to the
5 argument that it wasn't necessary to update the SAMA
6 analysis with any of the new information that is the
7 post information? Are you referring to that argument?

8 CHAIRMAN RYERSON: If that's their
9 argument, yes.

10 MS. CURRAN: Oh.

11 CHAIRMAN RYERSON: They may characterize
12 it differently, I'm not sure.

13 MS. CURRAN: Well, what we have here is,
14 you know, NEPA is governed by the Rule of Reason and
15 that's it. Every situation is different, every
16 situation has to be judged according to the
17 reasonableness of the evaluation.

18 And here we have a licensee that
19 discovered a new earthquake fault in 2008 and here we
20 have a huge earthquake in Japan that nobody predicted
21 in 2011 and that caused the NRC to stop everything and
22 say we are going to apply some lessons here. What did
23 we learn from the Fukushima accident? We had
24 directions to all the licensees. We wanted you to go
25 out and get the best available information about

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1 earthquake risk and use your best methods.

2 And that information came in while this
3 license renewal application is pending. Now, NEPA
4 says use what you -- use your best stuff. You have
5 got it, use it. But then it is reasonable to question
6 did you really use it in the best way? Did you apply
7 the best methods that you were told to use? And did
8 you take the hard look required by NEPA?

9 We are talking about information that is
10 already been collected. Now, some of it may be
11 insufficient from which to draw certain conclusions.
12 In other words, we are saying it's not appropriate to
13 draw conclusions about the earthquake risk coming from
14 the Shoreline fault when you let all these years go by
15 where you were only studying earthquakes on one side
16 of the fault and you neglected the other. Now, maybe
17 we can't make PG&E delay and go get the information
18 from the other side of the fault, but we could
19 certainly question PG&E's conclusive determinations
20 that well, we think we know what the earthquake risk
21 is because we looked at these earthquakes on the east
22 side of the fault, that's reasonable for us to
23 question.

24 So it's true that we can't make this
25 process hold up while PG&E gets more information, but

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1 we can insist that the information that was gathered
2 is used in an appropriate and reasonable way to come
3 up with a really hard look at the environmental
4 impacts and the alternatives for mitigating them.

5 CHAIRMAN RYERSON: Mr. Repka, does the
6 latest version of your seismic SAMA analysis address
7 in any way the Shoreline fault?

8 MR. REPKA: Yes. Both the February
9 updates specifically considered the Shoreline fault
10 and the July update just submitted considered that.
11 I would respond briefly to Ms. Curran's comment. I
12 think she hangs her entire argument on the NEPA Rule
13 of Reason and then she crashes right through and
14 violates the Rule of Reason.

15 I think that we are looking here in the
16 NEPA context and more particularly our SAMA context
17 and I think there is ample basis in the record to
18 address implications of the Shoreline fault in all of
19 the updated seismic hazards for the Diablo Canyon
20 region in the context of the SAMA.

21 Having said that, the fact of the matter
22 is PG&E has always maintained an active Geosciences
23 Department, ever since the LTSP, will continually
24 assess geoscience information. The company maintains
25 a living PRA. The PRA will always be updated

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1 continuously and that's our point is that NEPA
2 certainly does not require continuous updating of a
3 SAMA evaluation, continual deferral for the latest
4 best information.

5 CHAIRMAN RYERSON: Let me ask you this.
6 This does not directly concern what is before us
7 today, but if I recall, the sole admitted contention
8 in this proceeding is a contention of omission. Do
9 you intend to take any action with respect to that in
10 light of the present status of the SAMA analysis?

11 MR. REPKA: I think it's fair to say that
12 we do. We have not to date for various reasons
13 related to the status of the case, etcetera, but
14 certainly as long ago as, I believe it was, the fall
15 of 2010 in response to staff request for additional
16 information, the company already addressed, at that
17 time, the revisions to address the implications of a
18 Shoreline fault.

19 The original contention of omission was
20 addressed as long ago as that. It is certainly
21 addressed by the information that has been submitted
22 today.

23 CHAIRMAN RYERSON: Judge Arnold? I'm
24 sorry.

25 MS. CURRAN: Mr. Ryerson, I would just

1 like to correct something that I -- I think I
2 mistakenly said that the monitoring stations were west
3 of the fault. They are actually the --

4 CHAIRMAN RYERSON: You had said east.
5 Maybe you -- yes. At least initially you said east.
6 I don't know if you made a mistake, but I understood
7 you to be saying east.

8 Judge Arnold?

9 JUDGE ARNOLD: I have a number of
10 questions in my own mind about this contention. A lot
11 of them are based upon how to interpret the Rule of
12 Reason for NEPA evaluations and SAMA, most in
13 particular. And I went back to the NRC Case Law and
14 for instance I find in Seabrook CLI-12-05 the
15 Commission said "An Environmental Impact Statement is
16 not intended to be a research document reflecting the
17 frontiers of scientific methodology, studies and
18 data."

19 And then in LES and that was CLI-05-20
20 they say "NEPA also does not call for certainty or
21 precision, but an estimate of anticipated not unduly
22 speculative impacts."

23 And in light of what the Commission has
24 said, how does the SAMA not meet the Rule of Reason?
25 I mean, the Commission has said it doesn't have to be

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the latest and greatest.

2 MS. CURRAN: Well, we are arguing that
3 what is reasonable has not been done. That PG&E is
4 ignoring information that exists now that shows that
5 their way of analyzing earthquake risk doesn't pan
6 out. For instance, PG&E assumes that earthquakes
7 always happen on a fault, even the big ones. And
8 there has been a number of large earthquakes in recent
9 years, they are documented in our contention, that
10 occurred where there was no known fault. So how can
11 PG&E be right to say the earthquakes are going to
12 happen on the fault?

13 And the other thing PG&E does is that PG&E
14 puts a cap on how big the biggest earthquake would be
15 by setting that limit in relation to the length of the
16 fault that there is a number of faults nearby. But
17 Dr. Jackson says that doesn't pan out either. You can
18 look after an earthquake. You can look at the length
19 of the rupture to see how big the earthquake was, but
20 you can't use the length of a fault to predict how big
21 an earthquake will be.

22 Well, that's saying you can't do it. PG&E
23 cannot reasonably do -- come up with a good answer,
24 come up with a reliable answer using the method it
25 uses. This is not a question of how oh, everyone has

1 got a different opinion, so Dr. Jackson is way out on
2 the frontier and has no company out there. This is
3 what is happening in the world of seismology? What
4 can be observed from recent earthquakes? What is
5 wrong with PG&E's method?

JUDGE ARNOLD: Let me ask you this. I see
that there is two parts to the same analysis or I
would rather say there is the seismic analysis and
then starting from the seismic analysis a SAMA seismic
analysis.

Now, my impression is the seismic analysis itself is part of the current licensing basis. Is that correct? Let me ask the staff.

14 MR. LINDELL: Judge Arnold, I don't know
15 if you are referring to the -- there are several
16 different seismic analyses that have been done, but if
17 we are talking about the recent submission pursuant to
18 the request for information pursuant to 10 CFR
19 50.54(f), that's the Probabilistic Seismic Hazards
20 Analysis, so that's, yes, part of the -- that's, you
21 know, part of the current licensing basis that has
22 been -- you know, pretty much all reactors in light of
23 Fukushima have been asked to reconsider the seismic
24 hazard.

25 || MR. REPKA: I would say that differently.

1 I would say that that is being conducted as part of a
2 Part 50 current licensing basis process, Section
3 50.54(f). The actual seismic hazards analysis that
4 was submitted is not part of the current licensing
5 basis expressly intended to be something that is
6 separate and looking at the adequacy of licensing.
7 But it is a Part 50 issue.

8 JUDGE ARNOLD: Okay. The seismic analysis
9 that feeds into the SAMA analysis, is that seismic
10 analysis consistent with whatever is done seismically
11 for the current licensing basis?

12 MR. REPKA: Yes.

13 JUDGE ARNOLD: For instance, the
14 assumption that the fault layer can be used to cap the
15 earthquake.

16 MR. REPKA: Yes. In the sense that the
17 SAMA analysis takes the seismic hazards that are
18 developed through the Part 50 process, whether that
19 was the probabilistic hazards that were developed in
20 conjunction with the 2011 Shoreline fault report or
21 the probabilistic hazards that were developed in
22 conjunction with the March 2015 50.54(f) response.

23 So the seismic -- the SAMA analysis does
24 take that information and puts that into then a
25 cost-benefit SAMA process. I think the question

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1 becomes in terms of a SAMA is the issue is what is
2 reasonable? And the fact is the data of the seismic
3 hazards are developed through this NRC-defined
4 50.54(f) process, the Senior Seismic Hazards Advisory
5 Committee process, the SSHAC process, where an open
6 process that included many technical experts in the
7 field, not just PG&Es and Dr. Jacksons, were included.

8 So there is certainly a range of
9 uncertainty in that analysis. The analysis includes
10 all kinds of scenarios in a probabilistic way about --
11 that link faults up and down the coast of California.
12 So all those things are considered in that analysis.
13 And again, not one that PG&E is doing in isolation.
14 So those hazards were incorporated into the July
15 update.

16 JUDGE ARNOLD: What I'm trying to do is
17 differentiate what parts of this SAMA analysis are
18 actually part of the current licensing basis and, in
19 my opinion, would make it more difficult for an
20 intervenor to challenge. Is it the modeling of a
21 fault?

22 MR. REPKA: I think it's the development
23 of the seismic hazards, which is probabilistic, and
24 that includes the modeling of the faults, the source
25 characterizations, the ground motions, the

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1 predictions, the probability of the events, all of
2 that is clearly within the development of the model
3 and the probabilistic seismic hazards within. And
4 again, that's Part 50. That's exactly where Dr.
5 Jackson is raising issues. He raised many of those
6 same issues through that process.

7 On the SAMA side, what you are is you are
8 taking those hazards and you are just incorporating
9 those as inputs into the existing PRA and then
10 incorporating those into the codes used to develop
11 averted costs, to develop -- to evaluate what SAMA
12 should be considered, what would be the cost of those
13 SAMAs and doing the cost-benefit.

14 It's on that side, the SAMA side, of the
15 ledger as it were that Mothers for Peace have alleged
16 nothing. They have alleged no particular additional
17 SAMA that would be considered. They have shown
18 nothing about how any of Dr. Jackson's points which
19 were considered in the inputs how that would change
20 the SAMA evaluation, how it would -- the SAMA
21 evaluation itself in February included an assessment
22 of uncertainties. And they certainly haven't shown
23 anything that would address how Dr. Jackson's points
24 would fall outside the uncertainty of the SAMA
25 evaluation.

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1 So I think it's purely a challenge to the
2 process that is going on on the Part 50, not the Part
3 54.

4 JUDGE ARNOLD: And do you see any
5 distinction between seismic current licensing basis
6 and what can be challenged in a seismic SAMA?

7 MS. CURRAN: Well, I think there is -- the
8 basic difference is the current licensing basis is
9 everything that falls under the no-undue risk standard
10 for Part 50 licensing. SAMAs are severe accident
11 mitigation alternatives. That's -- severe accidents
12 fall outside the current licensing basis. They are
13 more severe than is planned for in the license and
14 NEPA nevertheless requires that they be considered.

15 Now, there is a whole debate going on that
16 you will talk about this afternoon about what the
17 licensee should be doing. That's not what we are
18 talking about here. This is NEPA. This NEPA
19 contention, severe accidents don't fall under the
20 current licensing basis. Although, I would argue that
21 NEPA is such a broad statute that if there is
22 information relevant to the current licensing basis
23 that helps one understand SAMA, it could be
24 considered.

NEPA is broader than the Atomic Energy

1 Act. It encompasses -- it really encompasses the Act
2 and then it goes beyond.

3 MR. REPKA: Judge Arnold, may I just
4 interject a point here unrelated to what Ms. Curran
5 just said, but just something she said earlier.

6 JUDGE ARNOLD: All right.

7 MR. REPKA: I feel duty-bound to point
8 out, I think there has been -- representations were
9 made that there is no monitoring west of the site.
10 And as part of the Central Coastal Seismic Imaging
11 Project, PG&E does have monitors, ocean bottom
12 seismometers west of the site, so just to make sure
13 the record is very clear on that.

14 MS. CURRAN: Could I ask a question about
15 that?

16 JUDGE ARNOLD: Go ahead.

17 MS. CURRAN: Because it's my understanding
18 that that monitoring has -- is something more recent
19 than what is reported in the seismic characterization
20 report.

21 MR. REPKA: I don't want to get into that
22 further. I just want to point out that certainly as
23 a going forward basis, that that is the case.

24 MS. CURRAN: Right. It's my
25 understanding, too, that starting now or soon in the

1 future, PG&E are to install monitoring devices on the
2 west side of the fault, but that didn't get done for
3 this report that was submitted.

4 MR. REPKA: Mr. Strickland points out to
5 me that the monitors in fact have been there for
6 several years.

7 JUDGE ARNOLD: Okay. So much for
8 monitors. On page 6 of this petition, the first --
9 second paragraph, first sentence "First PG&E seismic
10 hazards analysis fails to account for reasonably
11 foreseeable earthquakes located near to the DCPP than
12 PG&E had assumed."

13 Can you be more specific as to, you know,
14 what event is reasonably foreseeable and what makes it
15 foreseeable? Is this having to do with the location
16 of the fault?

17 MS. CURRAN: This has to do with
18 earthquakes on the Shoreline fault. And it's my
19 understanding, based on what my expert has to say,
20 that there is a spectrum of the magnitude of
21 earthquakes that could occur. And that going up the
22 spectrum, there are earthquakes. The smaller the
23 earthquake is, the more likely it is to occur on the
24 fault. And then the bigger ones may occur at some
25 distance.

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So the problem that has been identified here is that PG&E hasn't done -- PG&E has claimed to know where the Shoreline fault is without having done enough homework to be able to say where it is and that's very important because if the fault is going to be the location and there is the spectrum of earthquakes that PG&E says well, this is a, you know, 10-1 to 10-6.

9 So those are -- and those can be strong
10 earthquakes if you are on the fault, if the fault
11 happens to be under the plant. And so what we think
12 PG&E needed to do here was to have a band of
13 uncertainty in order to address that, which they have
14 made it too narrow a band and PG&E did a lot more work
15 to characterize the Hosgri fault, for instance, than
16 the Shoreline fault to be able to describe its
17 characteristics and uncertainty associated with its
18 location.

19 MR. REPKA: Can I respond to that?

20 JUDGE ARNOLD: Yes, you may.

21 MR. REPKA: Ms. Curran says that PG&E has
22 not done its homework. PG&E has done unprecedented
23 seismic imaging studies on the central coast of
24 California, including the Shoreline fault, the Hosgri
25 fault and all of the regional faults. The standard

here in NEPA space is reasonableness. PG&E has done more than any other licensee in the country on seismic studies.

The probabilistics, I don't know, but in particular Mothers of Peace are referring to in this paragraph you are addressing, but certainly the probabilistic hazard studies conclude a range of faults in the region and of various characteristics. There is an uncertainty associated with that, but all of that is addressed in the context of the probabilistic seismic hazards analysis.

12 MS. CURRAN: I just want to emphasize
13 that, and this is in our contention, the assumed
14 location of the Shoreline fault is based on the
15 eastern stations only, and this is according to the
16 seismic source characterization.

17 JUDGE ARNOLD: Page 8, top paragraph, last
18 sentence "Experience shows that earthquake magnitudes
19 may be much larger."

20 Are you of the belief that a SAMA analysis
21 should consider every, you know, possible earthquake
22 or is there some point where the probability becomes
23 so low that you can neglect it?

24 It seems as though you are looking for a
25 bounding evaluation.

1 MS. CURRAN: I guess the question is what
2 are the criteria by which PG&E excludes large
3 earthquakes? And that's what we take issue with.
4 That it is a question -- if an earthquake is very
5 improbable, that's right underneath, but it's
6 considered remote and speculative. But the question
7 is how do you rule them out?

8 And what we are saying is the tools that
9 PG&E uses to rule them out are arbitrary, because it's
10 based on this scaling process that just is not
11 borne-out as something that is reliable.

12 MR. REPKA: May I respond?

13 JUDGE ARNOLD: Yes, please.

14 MR. REPKA: Okay. The issue of scaling is
15 one that was specifically addressed in the SSHAC
16 process. Beyond that, I don't know what ruling out,
17 as Curran is referring to, the seismic hazards
18 analysis includes a range of earthquake magnitudes,
19 including those of higher magnitude, but extremely low
20 probability.

21 And in that analysis as input to the
22 SAMAs, there was no truncation. The entire hazards
23 curve is provided to the PRA to use in conjunction
24 with the SAMA process. So even those low-probability,
25 high-magnitude earthquakes are not excluded.

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1 JUDGE ARNOLD: Okay. On Page 10, the
2 first full paragraph starts out "One reason that the
3 segmentation model has been discredited is that it
4 assumes that hazard is greatest near the segment
5 boundaries because a site where there would be shaken
6 strongly by earthquakes on either of the joined
7 segments. A corollary of that assumption is that
8 sites near the middle of the segment are assumed to be
9 less hazardous, because they are less shaken by
10 earthquakes on adjoining segments."

11 Now, that seems to -- it is stated as an
12 established fact. Is that something that everyone
13 agrees with or is this an opinion of your expert?

14 MS. CURRAN: Well, it is based on the
15 opinion of our expert, which is based on evidence or
16 a lack thereof. The next sentence is "There is no
17 direct evidence that that ruptures repeatedly stop at
18 the ends of segments nor is there evidence of more
19 frequent strong shaking near the boundaries."

20 These are barely subjective assumptions.
21 And then he says, and these are Dr. Jackson's
22 opinions, he notes "It is important to recognize that
23 the authors of the UCERF3 report took care to
24 eliminate or reduce the effect of the segmentation
25 model and segment boundaries."

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1 So it isn't just a matter of his opinion.
2 He is talking about the UCERF, the Uniform California
3 Earthquake Rupture Forecast. This is a very
4 well-respected group of scientists who have discarded
5 the method that is used by PG&E here.

JUDGE ARNOLD: On Page 11, the second paragraph you talk about the characteristic model and the Gutenberg-Richter, it's prime competitor. Have you anything to support that using this other model would result in a materially different result in the SAMA analysis?

12 MS. CURRAN: Well, we have, if you turn
13 the page, Dr. Jackson's opinion that replacing the
14 characteristic assumption with a reasonable GR model
15 would increase or decrease the calculated hazard at
16 different spectral frequencies, depending on details
17 that can only be determined with proper modeling.

18 And then he says the same thing with the
19 effect of replacing segmentation with randomized
20 locations of earthquakes on faults.

21 And what I asked him was can you tell me
22 for sure this is going to increase the, you know,
23 ground motion or increase the size of an earthquake in
24 every context and he said you have to do the modeling.
25 It's complicated. And as Mr. Repka was saying this

1 takes a lot of study, right? We are glad you did a
2 lot of study, PG&E. We just don't think that this was
3 -- we think there are significant weaknesses in it.

4 This isn't something you can snap your
5 fingers and figure out, but it has got to be done
6 right to figure it out.

7 JUDGE ARNOLD: Mr. Repka?

8 MR. REPKA: Judge Arnold, to your point
9 earlier about whether or not this is fact or opinion,
10 I think I would suggest that it is an opinion. I
11 think that is it an opinion that was specifically
12 addressed within the SSHAC process. I think it is
13 fair to say that there are other opinions that differ
14 on that issue and that on some of these points Dr.
15 Jackson's views did not fall within the consensus of
16 that expert group.

17 But having said that, the seismic hazards
18 analysis does consider ruptures that connect multiple
19 segments. It does consider various different
20 interpretative models, interpretations of seismic
21 events and faults and different models. So and I
22 think where Ms. Curran is here is an invitation to
23 litigate the SSHAC process and I think that is clearly
24 something that is outside the scope of this
25 proceeding.

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1 JUDGE ARNOLD: Judge Trikouros?

2 JUDGE TRIKOUROS: I have very few
3 questions mostly associated with the Central Coastal
4 California Seismic Imaging Project.

5 MR. REPKA: CCCSIP, that's how you
6 remember it.

7 JUDGE TRIKOUROS: How do you say it?

8 MR. REPKA: CCCSIP.

9 JUDGE TRIKOUROS: Oh. You make the
10 statement that it really doesn't provide any useful
11 information to the seismic hazard analysis process,
12 because it's deterministic in nature?

13 MR. REPKA: I think the Seismic Imaging
14 Project report was a deterministic response spectrum
15 report, that's correct. The March 2015 submittal on
16 seismic hazards was using the probabilistic
17 methodology laid out in Section 50.54(f) process.

18 JUDGE TRIKOUROS: The date of the -- that
19 comes out of the CCCSIP Project, it would seem to me
20 would have some relevance to such things as initiating
21 event frequencies.

22 MR. REPKA: Oh, absolutely. And if I
23 mislead you, I apologize. I mean, yes, the actual
24 curves that were developed through the seismic imaging
25 were deterministic, but all of the data, all of the --

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1 was certainly considered in the SSHAC process and was
2 highly influential in that process.

3 JUDGE TRIKOUROS: Reading your brief, that
4 didn't come across, at least not to me at all. So it
5 was factored in and it was important to the analysis.

6 MR. REPKA: Yes, yes. I mean, the point
7 we were trying to make in the brief was that you
8 couldn't just take the imaging curve and import it
9 into a SAMA. That you could not do. But the
10 probabilistic hazards curves in the February update
11 had been developed based upon the 2011 Hazards Curves,
12 which did include probabilistic hazard curves. But
13 the data was used to develop the 50.54(f) response.

14 JUDGE TRIKOUROS: And I haven't actually
15 looked at the details of that, but in general the
16 probabilistic or the probability of exceedance of a
17 certain earthquake magnitude, did that increase
18 significantly from the previous analysis?

19 MR. REPKA: I think the answer would be
20 no. I think you see some probabilities increase at
21 the very low-probability end of the higher-magnitudes,
22 but, again, very low-probability. That's looking at
23 just the probability of hazards, if that's where you
24 are focused as opposed to the ground motions in the
25 response spectrum.

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JUDGE TRIKOUROS: Right. That's for this afternoon. I'm not going to ask that question. All right. I think I'm fine.

4 MR. REPKA: I think in the SAMA report
5 from February, page HF-34, that shows some changes in
6 the relative, again, to the earlier probabilistic
7 hazards analysis. PRA bins them into event frequency
8 categories and you see some slight changes there.
9 Most of those are going down.

10 MS. CURRAN: That's our concern that there
11 is two issues, the magnitude of a potential earthquake
12 level of shaking that it could cause and also where
13 could the earthquake be? Because even a smaller
14 earthquake if it's directly near the reactor, it's
15 going to be potentially devastating. And we just
16 didn't see that -- we are concerned that the
17 methodology isn't adequate to provide a reasonable
18 confidence in the numbers that they had.

19 CHAIRMAN RYERSON: All right. I hope, I
20 think we don't have too many questions about
21 Contention D, which is the flooding risk SAMA
22 analysis. I have just one actually and I just wanted
23 to clarify.

I believe you asserted earlier today, if
you didn't, it was said in your briefs, that the

1 factual basis for Contention D is solely from PG&E's
2 own document. Is that correct?

3 MS. CURRAN: That's right.

4 CHAIRMAN RYERSON: Judge Arnold?

5 JUDGE ARNOLD: Yes. I read the SAMA
6 analysis and clearly there is some evaluation of
7 external flooding there, but I'm unfamiliar with the
8 Diablo Canyon area. Is there -- where does the risk
9 of flooding come from? Do you have a dam that might
10 break or a river that might overflow its banks?

Apart from that, other external flooding sources know there is no dams. I guess a tsunami would be one that would repeatedly come to mind.

20 JUDGE ARNOLD: Okay. The SAMA analysis
21 then whatever probability you had of flooding, you
22 would say that includes the probability of this
23 flooding due to rain?

24 MR. REPKA: Yes. And those sorts of
25 events and, in fact, I think all external flooding

1 events are of such low frequency they screen out of
2 the SAMA, so you don't continue the evaluation further
3 than that. But because they are so low-probability,
4 they are not going to make a difference to core damage
5 frequency, which is ultimately what matters in terms
6 of averted costs in a SAMA cost-benefit evaluation.

7 JUDGE ARNOLD: And to intervenors, with
8 this rain occurring once every 129 million years?

9 MR. REPKA: Yes.

10 JUDGE ARNOLD: Okay.

11 MR. REPKA: Which is in the same document.

12 JUDGE ARNOLD: Do you seriously expect
13 that that would affect any outcome in the SAMA? I
14 mean, that is 10-8 probability of occurring. And then
15 the probability of leaving core damage is going to be
16 even less. So what is the requirement for that to be
17 in the SAMA analysis, more explicitly than it already
18 is?

19 MS. CURRAN: I wrote this contention
20 because it seemed important to me that the lessons of
21 the Fukushima accident be actually incorporated into
22 NRC licensing decisions and not set outside over there
23 where it is -- if it's looked at in the ordinary
24 course of the operating life at the plant, there is no
25 accountability by either PG&E or the NRC to the

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1 public.

2 The only time when there is any measure of
3 accountability for safety or environmental impacts is
4 in the licensing process. So we have an agency that
5 ordered PG&E to do this study of flooding risk and
6 PG&E came back and identified one. That this one we
7 haven't dealt with. I mean, that was my reading as a
8 lawyer.

9 This is one that we have identified that
10 we need to do something more about. That was our
11 homework for the post-Fukushima flooding study and
12 that's what we have done. And I think Mr. Repka said
13 there has been some interim measures that have been
14 put in place. But where is the accountability to the
15 public in the licensing process?

16 If we are going to allow PG&E to operate
17 for another 20 years, we want some discussion. We
18 have looked at this. This is what we concluded. The
19 whole point of the Fukushima investigation was we
20 really under-estimated a serious accident. Nobody
21 thought that the Fukushima accident would happen.
22 That was the lesson, right?

23 We thought it would never happen and it
24 did. So then in the United States we said well, let's
25 take a look and see what could happen here. That's

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1 the level of accountability that we want in this
2 license renewal proceeding. And we want a chance that
3 it goes in the Environmental Impact Statement and we
4 get to comment on it. And if we can get an expert to
5 help us evaluate it, great.

6 JUDGE ARNOLD: Thank you. No more
7 questions.

8 CHAIRMAN RYERSON: Dr. Trikouros?

9 JUDGE TRIKOUROS: I just wanted to point
10 out that the LIP event it seems that if it were in the
11 PRA space would result in no modification, but it
12 appears that the LIP event in deterministic space has
13 resulted in a modification. I guess it's temporary
14 right now. I don't know. It probably will not be in
15 the future, but I just wanted to point that out.

16 MS. CURRAN: Yes. And you know, one of
17 the things that we wanted more information on was how
18 long are the temporary measures? Do they get put in--
19 do the permanent measures get put in place before the
20 renewal decision is made? These are all matters of
21 accountability that NEPA provides to the public.
22 That's what we are looking for.

23 MR. REPKA: And the 50.54(f) process
24 includes the flooding issue, includes a further
25 evaluation and all of that is in the public domain.

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1 Certainly all the accountability inherent in all of
2 the NRC's regulatory processes.

3 MS. CURRAN: Well, if we happen to
4 disagree with PG&E or the NRC staff about something in
5 the 50.54 process, basically, the public can go pound
6 sand that we have no recourse that is meaningful at
7 all. That's why we bring it to the licensing
8 proceeding.

9 CHAIRMAN RYERSON: All right. Well, thank
10 you. I think that concludes what we hope to
11 accomplish in the first of this double-hitter, if you
12 will, today. We had very much hoped that we would be
13 able to start the second part of this, the very
14 separate issue the Commission has referred to the
15 Board, but it looks like we are right on schedule.
16 It's about time to break for lunch and so we will
17 resume at 1:00.

18 Our job on this matter, and I'm glad we
19 took the time to ask the questions that Board Members
20 felt we needed to ask, our job now is to take all the
21 information we have, which includes mostly of course
22 the many pages of briefs and everything we have
23 learned today, and reach a decision.

24 The Commission has milestones for how we
25 ought to do that specifically within 45 days of the

1 argument, which I think I calculate as August 24, so
2 we should reach a decision by then or issue a notice
3 saying we are not going to. I'm very hopeful we will
4 be able to do that.

5 I would like to thank everyone for your
6 arguments today. They are helpful. I'm sorry, Ms.
7 Curran, that we were, despite our considerable
8 efforts, unable to get Dr. Jackson through security
9 here today without the original of his ID, but it
10 sounds like you were able to handle the questions
11 without his being present.

12 Any comments, Judge Arnold, before we --

13 JUDGE TRIKOUROS: Ms. Curran, I wanted to
14 ask you how did Dr. Jackson get on an airplane?

15 MS. CURRAN: Everybody wants to know that.
16 He had a copy of his driver's license and his passport
17 in a dropbox and he could printout a copy, but --

18 JUDGE TRIKOUROS: They accepted that?

19 MS. CURRAN: Yes. And I think he had a
20 document that he had signed with his address on it, so
21 that got him through the airport, but not through the
22 NRC front door.

23 CHAIRMAN RYERSON: We have tighter
24 security here.

25 MS. CURRAN: It's probably a good thing.

1 CHAIRMAN RYERSON: All right. Well, so we
2 will commence the separate, but very similar Board at
3 1:00. And for the moment, this matter then stands
4 adjourned. Thank you.

5 (Whereupon, the above-entitled matter went
6 off the record at 11:56 a.m.)

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