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## DOCKETED

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*Comment Received From: Ben Davis Jr.*

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## **Draft 2015 IEPR**

Statement of Ben Davis Jr. for the Draft California Energy Commission 2015 Integrated Energy Policy Report:

At the October 20, 2015 hearing on the Draft IEPR I made two suggestions:

First, I noted that the PG&E website for its SSHAC study was misleading ([http://www.pge.com/includes/docs/pdfs/safety/systemworks/dcpp/SeismicTsunami\\_fs.pdf](http://www.pge.com/includes/docs/pdfs/safety/systemworks/dcpp/SeismicTsunami_fs.pdf)).

Specifically, the website leads the public and press to believe that there has been a "new and extensive analysis" that has concluded that Diablo Canyon can withstand 35% more ground shaking than .8g (1.35g). Further the PG&E website leads the reader to believe that the new study was part of an NRC process that has been done with new, state-of-the-art science, and has been peer reviewed by scientists independent of PG&E. The website leads the reader to believe that a "Key Result" of the SSHAC study, which was conducted publicly, is that Diablo Canyon can withstand 1.35g of ground shaking. None of this is true.

After looking carefully through the SSHAC study and finding no analysis or conclusions concerning how much ground shaking Diablo Canyon can withstand I asked questions about where this claim that the plant can handle 1.35g ground shaking came from. It should be noted that Diablo Canyon is only licensed for .75g and that this new claim of 1.35 g is about two and one half times the ground shaking experienced at Fukushima. The answers to my question came from both peer review panels that have considered the earthquake studies for Diablo Canyon (IPRP and DCISC). I was told that neither peer review panel had anything to do with considering the ground shaking that Diablo Canyon could safely respond to. Both peer review panels limited their considerations to the earthquakes and ground shaking Diablo Canyon could be subjected to, but did not consider the plant response. I was also told that the current SSHAC study only considered earthquakes and ground shaking, and did not analysis plant response. I was also told that the study that PG&E based its claim that the plant could withstand 40% more than previously claimed was from 1991.

In fact the only reference offered concerning this claim that Diablo Canyon can withstand 1.35g of ground shaking is contained in a single paragraph of an appendix to this 1991 study.

In a March 11, 2015 PG&E letter to the NRC ( DCL-15-035 appendix B, page 6 of 9) the 1991 letter is referred to:

"Note that section 3.8.1.5 of the NRC's SER associated with the 1988 LTSP (NRC 1991) states:

"the staff generally agrees with PG&E's statement that all components whose failure could lead to seismic risk to the plant have at least a margin of 40 percent when their HCLPF capacities are compared with the 84 percent, site specific, ground-motion demand."

Therefore, the use of a minimum seismic margin of 1.35 is conservative relative to the NRC's conclusion for the 1988 LTSP."

This vague reference appears to be all that PG&E is basing its new claim on. I have been pursuing this questions with PG&E and the NRC for months and cannot find any other more substantial reference or explanation for PG&E's

claim. Concerning the paragraph noted above I have asked PG&E and the NRC these questions:

Is there any other documentation supporting this assertion?

Is there any documentation as to who the staff members are that generally support this assertion?

Is there any documentation of what is meant by the qualification "generally agrees"?

What are the specific NRC's conclusion's for the 1988 LTSP that are conservative relative to a minimum seismic margin of 1.35?

The NRC has refused to answer these questions and directed me to ask PG&E. PG&E has had these questions for near two months and has not yet answered.

The Final IEPR should contain a discussion of this information. The Draft IEPR states only that "According to PG&E, the new research confirms that Diablo Canyon is designed to withstand a major earthquake on any of the faults surrounding Diablo Canyon." (pg. 230-31) This statement in the context of the Draft IEPR doesn't give proper perspective to this issue. It should be noted that PG&E's new study has found that ground shaking at the plant could reach .8g, which is greater than the .75g the plant is licensed for. It should also be noted that this conclusion is disputed by the IPRP.

At the hearing on nuclear power Criss Will explained that the IPRP is not convinced Diablo Canyon will not experience higher ground shaking from local earthquakes than .8g. He stated that PG&E's study did not use the more commonly used World Model (Ergodic model) (hearing transcript pgs. 40-61) in considering ground shaking at Diablo Canyon. Instead PG&E has assumed that the ground under the plant will absorb more energy than normally thought, that the ground shaking will be de-amplified. According to Norm Abrahamson, when I asked him this question at the IPRP PUC hearing, if the World Model is used the resulting prediction is that Diablo Canyon will experience 1g of ground shaking instead of .8g. This discrepancy should be noted in the Final IEPR because it shows more clearly the the PG&E claim in light of the IPRP skepticism. That the claim that Diablo Canyon can withstand 1.35g ground shaking has not been peer reviewed, and there is no evidence that the NRC or any other agency supports this claim should also be noted in the Final IEPR.

Although this quote in the above paragraph from the Draft IEPR is qualified by stating "According to PG&E..." the statement is factually false. This claim is based on the assertion that there is "new research" showing that Diablo Canyon can withstand 35% more than .8g ground motion. There is no 'new research' that supports this claim, although PG&E has mislead the public to believe otherwise on their websites. In fact there is a serious question as to whether there is any support for this claim at all. Even the 1991 appendix to a letter that this claim seems to be based on is extremely vague.

The second issue I raised at the Draft IEPR hearing concerned this fact that there was no independent peer review of this PG&E claim that Diablo Canyon could withstand 1.35g of ground shaking, even though PG&E's website clearly claims otherwise. I discussed this issue briefly with Chris Will by email and at the September PUC hearing of the

IPER. My July 17th email put the issue in perspective:

Dear Mr. Wills,

Thank you for all your clear, concise answers to my questions. I anticipated that the IPRP may believe that the structural integrity of Diablo Canyon is outside of its scope, but felt the question needed to be asked to be sure. I'd like to explain my reasons for asking.

As you note in the IPRP Reports, the purpose of the legislation is to allow the CEC to "... assess the potential vulnerability to a major disruption..." and the IPRP is the CEC's primary aide in this task. "Vulnerability" as used here seems to presume knowledge of both the seismic activity and the structural integrity of the plant. Independently reviewing seismic activity and not structural integrity seems inconsistent with the purpose of the legislation.

I don't believe it was anticipated in passing this bill that claims of plant integrity would be increased. Had this been foreseen, independent review of those structural claims would have been clearly included in the legislation. Do you believe the IPRP can effectively aide the CEC in assessing the vulnerability of Diablo Canyon to a major disruption if an independent review of these new claims of plant integrity are not also made part of the record? Would the IPRP consider suggesting the CEC find a means of independently reviewing these claims?

You seem to recognize the importance of plant integrity in stating that "The amount of the increase would be less at the high frequencies represented by the peak ground acceleration value of 0.8 g and greater at frequencies of 2-8 hertz that are of more concern to DCCP." Perhaps I overlooked it but I could not find an analysis of this in the IPRP reports and I don't believe it was brought up at the CEC hearing. Can you offer me any more insight or references concerning this issue?

Also, I have not found a report explaining PG&E's claims that the plant can withstand .8gs of ground shaking, and in fact 35% more. I do not see these figures in the SSHAC Report. Do you have a reference to such a study?

Lastly, I have made no progress with the PUC Public Adviser concerning the timing of the public hearings you mentioned. Do you have any suggestions on who I may contact about this?

Thank you again for taking the time to consider my questions.

Sincerely,

Ben Davis Jr.

In conclusion the 2015 IEPR should include the following:

1. A discussion of the fact that PG&E's claims that Diablo Canyon can withstand 35% more ground shaking than the .8gs suggested in the SSHAC study has not been independently peer reviewed, is not based on a new study, is not part of the SSHAC study, and that there is no evidence that any public agency supports this claim.
2. A discussion of the fact that if the World Model is used to calculate ground shaking at Diablo Canyon 1g of ground shaking is predicted.
3. A discussion of the fact that the Diablo Canyon is licensed for .75g ground shaking.

4. A discussion of the fact that Fukushima nuclear power plants were subjected to only 5g ground shaking.
5. A recommendation that the authority granted the IEPR to independently review seismic activity around Diablo Canyon be expanded to include independent review of studies concerning the nuclear power plants response to that seismic activity.