

June 26, 2025

Dr. Per F. Peterson
Dr. Robert J. Budnitz
Dr. Najmedin Meshkati
Diablo Canyon Independent Safety Committee
California Public Utilities Commission
By email to Robert Rathie, info@dcisc.org

Re: Follow-up to June 10, 2025 DCISC Meeting

Dear members of the Diablo Canyon Independent Safety Committee:

We are writing to follow up on the DCISC meeting on June 10, 2025. As you will recall, during the meeting, Dr. Tom Jordan of the Seismic Review Team (SRT) acknowledged that an active thrust fault lies directly beneath the Diablo Canyon nuclear plant (DCPP). However, Dr. Jordan also said that it is “not new information,” and downplayed its significance.

We respectfully submit that in two significant respects, Pacific Gas & Electric Co. (PG&E) has not done the type of studies that would be necessary for the level of confidence expressed by Dr. Jordan in PG&E’s assessment of the threat posed by active faulting beneath the plant.

First, while PG&E claims to have modeled the fault in 2015, that is only a half-truth. PG&E did include a model where the San Luis Bay thrust extends West to the Hosgri fault, with a dip toward DCPP. However, the model suffered from four significant defects:

- PG&E kept the model fault trace as far as possible from DCPP so as to minimize the hazard. In contrast, Dr. Bird located his proposed Inferred Coastline thrust fault more realistically close to the plant.
- PG&E assumed an unreasonably steep dip of 40°~80° for the fault, which both reduces its “potency” (proportional to seismic moment production rate), and also keeps it as far away from DCPP at depth as possible.
- As is typical of PG&E’s seismic models, PG&E used a very low slip-rate (0.08~0.20 mm/year) for the fault, both due to the assumed steep dip and because PG&E ignored the isostatic factor of 6 caused by the footwall sinking 5 m for every 1 m that the Irish Hills rise.
- PG&E only considered models in which the San Luis Bay fault dips under DCPP in their southwest-vergent model set (with overall logic weight of 40%). Then, this weight was subdivided among at least 4 models, of which only one has the San Luis Bay fault extending to the Hosgri fault as a pure thrust with uninterrupted ruptures. Thus, the weight PG&E applied to this most realistic model was no more than 10%. This composite hazard minimizes the significance of any individual fault – and of course, the individual

fault directly beneath the plant should be a matter of serious concern. There should have been a sensitivity study in which this fault geometry was assigned 100% weight.

Second, as also mentioned by Dr. Jordan, PG&E has made no new assessment of the capability of the fault (e.g., taking into account the new peak ground acceleration (PGA) values observed in the 1 January 2024 Noto Peninsula earthquake).

Thus, PG&E's claim to have evaluated the active thrust fault beneath DCPD is seriously misleading, and Dr. Jordan's expression of confidence in PG&E's work is unfounded.¹

It is our understanding that by "accepting" the SRT's report, you have not made formal findings regarding the seismic risk posed by extended operation. Therefore, we urge you to consider the following:

Dr. Bird continues to stand by his expert opinion that continued operation of DCPD poses an unacceptable seismic risk. The SRT's objection to the isostatic model for thrust slip rates confuses Bouguer with isostatic gravity concepts and uses the wrong physical model of the lithosphere. The SRT's objection to the method using the throw rate of map unit Tmo to estimate thrust slip rate was illogical because their interpretation only converts that rate into a lower limit; it does not dismiss it. And the SRT's analysis of GPS data was needlessly complex, causing the obvious horizontal shortening across the Irish Hills to be averaged together with different tectonics in adjacent ranges. Finally, the SRT's dismissal of the Noto Peninsula earthquake as an important analog because it had unusually high PGA should not stand among SSHAC experts who understand the importance of exceptional events.

¹ Nor, as observed during your meeting by John Geesman, counsel to Alliance for Nuclear Responsibility (A4NR), has PG&E submitted the deterministic study of a San Simeon-like earthquake beneath DCPD that was requested by the California Energy Commission 17 years ago. Instead, during your June 10 meeting and in written correspondence, PG&E has falsely asserted that this deterministic study has been done and is documented in the 2011 Shoreline Fault Zone report. As Mr. Geesman stated during the meeting and in formal correspondence with PG&E, that study did not provide a deterministic analysis of a San Simeon-like thrust fault earthquake *directly beneath* DCPD. *See also* the attached correspondence: letter from John L. Geesman to Blair Jones, PG&E, re: Follow-up to seismic update discussion at February 22, 2024 DCISC meeting (Feb. 26, 2024); PG&E Letter DCL-24-064 from Maureen R. Zawalick, PG&E to John Geesman re: Response to Letter from John Geesman Regarding the Seismic Update Discussion at February 22, 2024 DCISC Meeting (June 17, 2024); Letter from John L. Geesman to Maureen R. Zawalick, PG&E, re: PG&E Letter DCL-24-064 replying to my letter of February 26, 2024 (June 19, 2024). We urge you to demand accountability by PG&E for its serious misrepresentations and delay in producing the required deterministic study of a San Simeon-like thrust fault earthquake directly beneath DCPD.

Dr. Bird also continues to stand by his recommendations, which are found on page 10 of his June 6, 2025 technical report to you. These recommendations should be taken up immediately.

In addition, we seek an update on the status of your consultation with the Independent Peer Review Panel (IPRP), as required by Section 8 of S.B. 846, Cal. Pub. Util. Code § 712.1(d)(1). As you know, the IPRP's most recent report of June 2024 requests PG&E to "conduct a comprehensive review that includes all fault studies in the region since the previous assessment (PG&E, 2015) and they address the implications for the seismic hazard at DCPD." IPRP Report No. 16 at 38 (Aug. 26, 2024). The IPRP has also stated that it "considers the PG&E Update (2024) report incomplete until it has been revised to fully address and clarify the issues and questions raised in [its] review." *Id.* To our knowledge, PG&E has not provided the requested information and the meeting previously scheduled by the IPRP for April 2025 was postponed. Therefore, please bring us up to date on the status of your consultation.

Thank you for your consideration.

Sincerely,



Diane Curran
Counsel to San Luis Obispo Mothers for Peace



Peter Bird
Professor Emeritus
Department of Earth, Planetary, and Space Sciences
University of California Los Angeles
Los Angeles, CA 90095-1567

Technical advisor to San Luis Obispo Mothers for Peace

CC: Sen. John Laird c/o Kara Woodruff kara.woodruff@sen.ca.gov

Members of IPRP:

California Geological Survey

Dawson, Timothy timothy.dawson@conservation.ca.gov

Chen, Rui Rui.Chen@conservation.ca.gov

Zachariasen, Judith Judith.Zachariasen@conservation.ca.gov

Seitz, Gordon Gordon.Seitz@conservation.ca.gov

Seismic Safety Commission

Wang-Connelly, Jia Jia.Wang-Connelly@CalOES.ca.gov

Ortiz, Nate Nate.Ortiz@CalOES.ca.gov

California Coastal Commission

Street, Joseph Joseph.Street@coastal.ca.gov

California Public Utilities Commission

Anderson, Robert "Bob" Lowell bobanderson816@gmail.com

Mulligan, Jack M. jack.mulligan@cpuc.ca.gov

Carrejo, Antonio Antonio.carrejo@cpuc.ca.gov

Zizmor, David David.zizmor@cpuc.ca.gov

California Energy Commission

Cochran, Justin justin.cochran@energy.ca.gov

San Luis Obispo

Bruce Gibson bgibson@co.slo.ca.us

Crystal Tompkins ctompkins@co.slo.ca.us

Blake Fixler bfixler@co.slo.ca.us

Department of Water Resources

Hou, Delphine Delphine.Hou@water.ca.gov

Wood, Colin Colin.Wood@water.ca.gov

Hedrick, Robert Robert.Hedrick@water.ca.gov

ATTACHMENT:

**Correspondence between John L. Geesman and PG&E
regarding CEC-required seismic study (2024)**

February 26, 2024

Blair Jones

Director – Strategy, Policy, Organizational Effectiveness, & Engagement

Pacific Gas and Electric Company

Diablo Canyon Power Plant

P.O. Box 56, Mail Code 104/6

Avila Beach, CA 93424

TRANSMITTED BY EMAIL

RE: Follow-up to seismic update discussion at February 22, 2024 DCISC meeting

Dear Mr. Jones:

As suggested at the February 22, 2024 meeting of the Diablo Canyon Independent Safety Committee, I am submitting three formal questions from the Alliance for Nuclear Responsibility to PG&E regarding the recommendation in the California Energy Commission's 2008 AB 1632 Report¹ that PG&E evaluate the implications of a San Simeon-type earthquake directly beneath the plant. This discussion can be found on the archived video of the February 22, 2024 DCISC meeting between 5:36:30 and 5:54:15 at https://slo-span.org/meeting/dcisc_20240222/.

CONTEXT: As the AB 1632 Report explained in 2008, at page 5:

Another potential seismic hazard at Diablo Canyon occurs from the possibility of an earthquake directly beneath the plant. Based on seismologic interpretations and conclusions from investigations of the 2003 San Simeon earthquake (magnitude 6.5) that occurred approximately 35 miles north of the Diablo Canyon site, the tectonic (geologic plate) setting where this earthquake occurred appears similar to the local tectonic setting of Diablo Canyon. The deep geometry of faults that bound the San Luis-Pismo structural block, where Diablo Canyon sits, is not understood sufficiently to rule out a San Simeon-type earthquake directly beneath the plant.

And on page 7, notwithstanding Jearl Strickland's mistaken recollection during the DCISC meeting last Thursday, the AB 1632 Report clearly specified:

*PG&E has considered a San Simeon-type earthquake scenario within probabilistic seismic hazard assessments for Diablo Canyon. However, **further studies that consider such an earthquake from a deterministic basis (i.e., using a probability of 1) are recommended to evaluate the full implications of this earthquake,***

¹ An Assessment of California's Nuclear Power Plants: AB 1632 Report, November 2008.

particularly for non-safety related plant components and reliability. (emphasis added)

California Public Utilities Commission D.12-09-008, while raising PG&E's approved cost estimate for the Diablo Canyon seismic studies from \$16.73 million to \$64.25 million and characterizing further increases as reasonably foreseeable, expressly noted:

*PG&E designed the proposed seismic studies to use the advanced technologies recommended by the CEC to explore fault zones near Diablo Canyon. **These studies were also designed to address the CEC recommendation that PG&E assess the implications of a San Simeon type earthquake beneath Diablo Canyon.***² (emphasis added, footnotes omitted)

QUESTIONS:

- (1) Has PG&E performed the deterministic evaluations recommended by the California Energy Commission's AB 1632 Report?
- (2) If not, why not?
- (3) If so, will PG&E make such evaluations available for public review?

Thank you for your attention to this matter.

Sincerely,

/s/ John L. Geesman
DICKSON GEESMAN LLP
Attorney for Alliance for Nuclear Responsibility

² D.12-09-008, p. 17.

PG&E Letter DCL-24-064

John L. Geesman
DICKSON GEESMAN LLP
Attorney for Alliance for Nuclear Responsibility

Subject: Response to Letter from John L. Geesman Regarding the Seismic Update Discussion at February 22, 2024 DCISC Meeting

Reference:

1. John L. Geesman letter to PG&E, Follow-up to seismic update discussion at February 22, 2024 DCISC meeting, dated February 26, 2024.

Dear Mr. Geesman:

Reference 1 requested PG&E provide responses to the questions below:

- (1) Has PG&E performed the deterministic evaluations recommended by the California Energy Commission's AB 1632 Report?
- (2) If not, why not?
- (3) If so, will PG&E make such evaluations available for public review?

PG&E completed deterministic evaluations of a San Simeon-type earthquake beneath the plant hosted by the Los Osos and San Luis Bay faults and documented the results in Chapter 6 of the 2011 Shoreline Fault Zone report. Fault parameters for the Los Osos fault were later updated in a deterministic sensitivity study and impact evaluation that incorporated findings from advanced seismic studies conducted in response to recommendations in the 2008 California Energy Commission AB-1632 report and documented in Chapter 13 of PG&E's 2014 Central California Coast Seismic Imaging Project (CCCSIP) report. The CCCSIP studies found that the 84th percentile deterministic ground motions for the Hosgri-San Simeon, Shoreline, Los Osos, and San Luis Bay faults are bounded by the 1977 Hosgri Earthquake (HE) and 1991 LTSP/SSER 34 spectrums for both the DCPD power block and turbine building. The CCCSIP report is publicly available [here¹](#) on the PG&E website.

Please contact Thomas Jones at (805) 459-4530 or by email at tom.jones@pge.com if you have any questions or would like to discuss further.

Sincerely,



Maureen R. Zawalick

June 17, 2024

Date

¹ <https://www.pge.com/en/about/pge-systems/nuclear-power/seismic-safety-at-diablo-canyon.html#accordion-4419013034-item-7c819412cf>

June 19, 2024

Ms. Maureen R. Zawalick
Vice President, Business and Technical Services
Diablo Canyon Power Plant, P.O. Box 56
Avila Beach, CA 93424

Re: PG&E Letter DCL-24-064 replying to my letter of February 26, 2024

Dear Ms. Zawalick:

Thank you for your June 17, 2024 response to my earlier inquiry concerning PG&E's evaluation of a hypothetical San Simeon-type earthquake **directly beneath** the Diablo Canyon Nuclear Power Plant. My client, the Alliance for Nuclear Responsibility, is interested in whether and how PG&E has responded to the 2008 recommendation of the California Energy Commission's AB 1632 Report that the company perform a deterministic study "to evaluate the full implications of this earthquake, particularly for non-safety related plant components and reliability."¹

Your reference to PG&E's 2011 Shoreline Fault Zone report and 2014 Central California Coast Seismic Imaging Project (CCCSIP) report strongly suggests that the Energy Commission's recommendation remains unheeded – at least in terms of any analyses PG&E is willing to make public. The Shoreline Fault Zone report notes (at pp. 6-11, 6-38, and 6-39) the 35 km distance from the San Simeon rupture to Diablo Canyon and calculates the residuals for Figures 6-10a and 6-10b accordingly. Similarly, the cited chapter from the CCCSIP report does not make any attempt to address ground motions from a postulated M_w 6.5 earthquake on a blind thrust fault **directly beneath** the plant.

PG&E Geosciences undercuts the credibility of its use of sophisticated methodologies when it resorts to obfuscation and evasion. In 2012, the Public Utilities Commission quadrupled the ratepayer funding for PG&E's proposed seismic studies, in part "to address the CEC recommendation that PG&E assess the implications of a San Simeon type earthquake beneath Diablo Canyon."² To learn that this evaluation may never have been performed, at a time when PG&E has eagerly sought generous taxpayer support for extending Diablo Canyon's operations, is a reminder of why the company continually faces such reputational challenges.

Sincerely,

/s/ John L. Geesman
Attorney for Alliance for Nuclear Responsibility

¹ An Assessment of California's Nuclear Power Plants: AB 1632 Report, November 2008, p. 7.

² D.12-09-008, p. 17.