BEFORE THE
PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Application of Pacific Gas and Electric Company for Compliance Review of Utility Owned Generation Operations, Electric Energy Resource Recovery Account Entries, Contract Administration, Economic Dispatch of Electric Resources, Utility Retained Generation Fuel Procurement, and Other Activities for the Period January 1 through December 31, 2013. (U 39 E)	)	Application 15-02-023 (Filed February 27, 2015)

ALLIANCE FOR NUCLEAR RESPONSIBILITY'S PROTEST

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I. INTRODUCTION.

Pursuant to Rule 2.6 of the Rules of Practice and Procedure of the California Public Utilities Commission ("Commission" or "CPUC"), the Alliance for Nuclear Responsibility ("A4NR") files its Protest to a portion of the 2014 Energy Resource Recovery Account Compliance ("ERRA Compliance") application filed by the Pacific Gas and Electric Company ("PG&E"). A4NR objects to PG&E's recovery of certain balances recorded in the Diablo Canyon Seismic Studies Balancing Account ("DCSSBA") for 2014 costs which fail to comply with D.12-09-008 and D.10-08-003 and, consequently, were not reasonably incurred. Additionally, D.14-08-032 directed PG&E to transfer funding for its Long Term Seismic Program ("LTSP"), including the Senior Seismic Hazard Analysis Committee ("SSHAC") process, to the DCSSBA effective January 1, 2014, subject to reasonableness review in the ERRA Compliance process.[1] A4NR protests recovery of certain LTSP amounts as well.

A4NR's Protest focuses on PG&E's continued evasion of the Independent Peer Review Panel ("IPRP") established by the Commission to assist in the oversight of the ratepayer-funded AB 1632 seismic studies. The legal and factual grounds for the 2014 Protest are similar to those cited in A4NR's protest of PG&E's still-pending 2013 ERRA Compliance application, A.14-02-008, broadened to include the LTSP to the extent that non-compliant avoidance of IPRP review has contaminated core assumptions used in PG&E's SSHAC reports. Sadly, the 2013 evidence cited in A4NR's opening and reply briefs in A.14-02-008 has been augmented by increasingly brazen defiance by PG&E of D.12-09-008 and D.10-08-003, as outlined herein.

[1] D.14-08-032, OP 29 a. The Commission stated, *"We find this disposition to be a reasonable approach to improving oversight of the LTSP costs,"* (*Id.,* p. 411) and, *"We find this disposition to be a reasonable approach to assure the proper integration of Assembly Bill (AB) 1632 seismic studies with the LTSP and the SSHAC process."* (*Id.,* p. 412)

II. CHERRY-PEEVEY EMAILS REVEAL POST-FUKUSHIMA PR PLOY.

A4NR's Protest coincidentally follows the recent revelation of unreported ex parte communications in 2011 between PG&E Vice President Brian Cherry and Commission President Michael Peevey concerning PG&E's A.10-01-022, which sought ratepayer funding for the relicensing of the Diablo Canyon Nuclear Power Plant ("DCNPP"). Five days after the Fukushima accident, ALJ Robert Barnett had taken the A.10-01-022 evidentiary hearing scheduled for April 13, 2011 off calendar. On April 11, 2011 – just one month after the Japanese meltdown -- PG&E ceremoniously announced it would accelerate completion of the AB 1632 seismic studies and requested the U.S. Nuclear Regulatory Commission ("NRC") *"to delay final action on the utility's on-going license renewal application until PG&E submits the findings."*[2]

That same day, Mr. Cherry and President Peevey had the following exchange:[3]

From: Cherry, Brian K [mailto:BKC7@pge.com]
Sent: Mon 4/11/2011 2:49 PM
To: Peevey, Michael R.
Subject: FW: Diablo Canyon License Renewal

Attached is the letter mentioned in the press release.

From: Peevey, Michael R. [mailto:michael.peevey@cpuc.ca.gov]
Sent: Monday, April 11, 2011 4:34 PM
To: Cherry, Brian K
Subject: RE: Diablo Canyon License Renewal

Very good. Prudent thing to do and should reduce some fears, concerns.

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[2] "PG&E Commits to Finishing 3-D Seismic Studies Related to Diablo Canyon Before Seeking Final Issuance of Renewed Licenses," news release from PG&E External Communications, April 11, 2011. The release quoted John Conway, Senior Vice President of Energy Supply and Chief Nuclear Officer: *"We recognize that many in the public have called for this research to be completed before the NRC renews the plant's licenses,"* said Conway. *"We are being responsive to this concern by seeking to expeditiously complete the 3-D seismic studies and provide those findings to the commission and other interested parties so that they may have added assurance of the plant's seismic integrity."*

[3] Accessible at ftp://ftp2.cpuc.ca.gov/PG&E20150130ResponseToA1312012Ruling/2011/04/SB_GT&S_0001262.pdf

From: Cherry, Brian K [mailto:BKC7@pge.com]
Sent: Mon 4/11/2011 4:47 PM
To: Peevey, Michael R.
Subject: RE: Diablo Canyon License Renewal

...and resurrect our application and get it back on track ?

From: Peevey, Michael R. [mailto:michael.peevey@cpuc.ca.gov]
Sent: Monday, April 11, 2011 5:04 PM
To: Cherry, Brian K
Subject: RE: Diablo Canyon License Renewal

Yep. I will have Carol talk to Barnett.

From: Cherry, Brian K [mailto:BKC7@pge.com]
Sent: Mon 4/11/2011 5:05 PM
To: Peevey, Michael R.
Subject: RE: Diablo Canyon License Renewal

Thanks. The sooner the better.

From: Peevey, Michael R. [mailto:michael.peevey@cpuc.ca.gov]
Sent: Monday, April 11, 2011 5:08 PM
To: Cherry, Brian K
Subject: RE: Diablo Canyon License Renewal

May.

From: Cherry, Brian K
Sent: 4/11/2011 5:09:40 PM
To: 'Peevey, Michael R.' (michael.peevey@cpuc.ca.gov)
Cc:
Bcc:
Subject: RE: Diablo Canyon License Renewal

Great. And thanks again.

III. AB 1632 PROGRAM'S REVIEW SAFEGUARDS WERE BREACHED.

A4NR relied upon the establishment of the IPRP by the Commission in D.10-08-003 to ensure that the AB 1632 studies were conducted as robust scientific inquiry and not as a public relations exercise. As ALJ Barnett made clear in that proceeding:

> *And I say this, and I'll say it on the record, that part of this is because I don't want the Commission to be in a position of just accepting what the utilities tell us without looking at it. We've gotten in that position too many times, and I feel that the way to avoid that problem that we are just taking the utility at its word without the expertise to determine the reasonableness of that. That is why I think the IPRP is valuable, and why they should have an expert witness to review this stuff.*[4]

The protocols for IPRP-PG&E interactions articulated in IPRP Report No. 2,[5] repeated verbatim in IPRP Report No. 3,[6] and reinforced by the admonition in D.12-09-008 (*"We expect PG&E to*

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[4] A.10-11-015 Transcript, p. 263.

[5] IPRP Report No. 2, September 7, 2011, pp. 8 – 9: *"The IPRP expects that:*

• PG&E will provide its study plans and draft completed study findings to the IPRP for review. These include studies summarized in CPUC Decision 10-08-003 including off-shore, on-shore, and ocean bottom studies, and seismic studies recommended in the AB 1632 Report.
• The IPRP, coordinated by the California Geological Survey (CGS), will review and provide comments on PG&E's study plans. The goal will be, if possible, to provide comments within 30 days of receipt.
• The IPRP, coordinated by the CGS, will review and provide comments on PG&E's draft completed study findings to the CPUC. The goal will be to provide comments as promptly as possible.
• PG&E will review and, if possible, within 30 days incorporate the IPRP's recommendations and comments in PG&E's revised study plans and revised completed study findings and prepare for the IPRP a 'Response to Comments' for the IPRP to document scientifically why PG&E accepted or rejected the IPRP's comments.
• PG&E and the IPRP will participate in quarterly meetings/briefings to review the status of PG&E's seismic studies, any changes in the study plans, and any preliminary study findings.
• PG&E and the IPRP will prepare a master schedule incorporating the major milestones for the IPRP's review process and will include these milestones in PG&E's monthly progress reports and schedule to the NRC and the Atomic Safety and Licensing Board.
• The CPUC and CEC will address any major scientific or technical issues that have not been resolved informally between the IPRP and PG&E. CPUC Decision 10-08-003 states that, 'Should a dispute arise it should be resolved informally but if that is not attainable the Commission has authority to halt the associated rate recovery.' In addition, the CEC may report on any seismic issues and updates through its IEPR process. However, we anticipate that any major scientific or technical issue that may arise can be addressed and resolved informally.

The quarterly briefings/meetings mentioned above will allow PG&E to report on its progress and help facilitate a productive informal exchange of scientific viewpoints."

continue to meet with the IPRP to present and review changes to the seismic study plans, to provide process updates to the IPRP regarding implementation of the studies, and to receive IPRP comments."[7]), offered at least theoretical protection from the PG&E misconduct which surfaced in 2013 and worsened in 2014.

IV. PG&E SENT 'FINAL' REPORT TO THE NRC WITH NO IRPR REVIEW.

PG&E submitted what it labeled the *"final"* AB 1632 report to the NRC on September 10, 2014, six days after the evidentiary hearing in A.14-02-008, and without providing even a draft of the submittal to the IPRP. As the Director of PG&E's Geosciences Department explained at the A.14-02-008 hearing, PG&E had decided that the IPRP was only entitled to receive *"finalized"*[8] results of the studies after PG&E had issued a *"final"*[9] report to the U.S. Nuclear Regulatory Commission.[10]

As described in the evidentiary record of A.14-02-008, the extensive criticism of PG&E's ground motion assumptions at the July 11, 2013 IPRP meeting, followed by the eviscerating IPRP Report No. 6, appears to have significantly chilled relations between PG&E and the IPRP. One month after publication of IPRP Report No. 6, PG&E regulatory affairs personnel were complaining to CPUC staff about self-initiated reports by the IPRP and questioning whether the IPRP could be *"decommissioned"* after submittal of the *"final"* report.[11]

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[6] IPRP Report No. 3, April 6, 2012, pp. 8 – 9.
[7] D.12-09-008, p. 16.
[8] Richard Klimczak, PG&E, A.14-02-008 Transcript, p. 139, ln. 16; p. 141, ln. 14.
[9] *Id*., p. 140, ln. 21; p. 141, ln. 22.; p. 142, ln. 7.
[10] *Id.,* p. 140, ln. 25.
[11] A4NR Opening Brief, A.14-02-008, pp. 27 – 29 citing three internal PG&E emails dated September 16, 2013.

It had taken more than six months of repeated requests by IPRP chair Chris Wills to obtain PG&E's documentation of its V_s measurements at the DCNPP plant site, and his efforts established that PG&E's V_s assumptions had a 50% greater impact on the seismic hazard calculation than the slip rate on the Hosgri Fault, previously labeled the top uncertainty in the PG&E model. And IPRP Report No. 6 was unsparing in its criticism of PG&E's assumptions:

- To prioritize the main targets of the AB 1632 onshore and offshore geophysical studies, the IPRP earlier asked PG&E for sensitivity analyses of the probabilistic hazards. PG&E's 2011 response ranked uncertainty in the slip rate of the Hosgri Fault as clearly the most significant, with a *"calculated ground motion hazard that varies by a factor of nearly 2."*[12]

- Changing PG&E's base case ground motion characterization of V_{S30} of 1200 m/s to a generic site with a V_{S30} of 760 m/s (*"more consistent with other soft rock sites in California"*[13]) "*increases the hazard by more than a factor of 3*"[14] and changing PG&E's assumed site condition to a generic site with a V_{S30} of 1000 m/s "*increases hazard by a factor of 2.*"[15]

- *"Compared to traditional approaches, the PG&E method resulted in lower ground motion hazard estimates, particularly in the spectral period range important to* [Diablo Canyon] ... " In contrast, *"(a) lower V_{S30} brings the estimated ground motion hazards beyond the original design level when used in typical, state-of-the-practice seismic hazard analysis..."* [16]

- The IPRP questioned whether PG&E's approach adequately captured shear wave velocities at different depths beneath the plant: *"With only three profiles, it is unlikely that one of them represents the lowest velocity material underlying the plant. Some of the variability seen in the 1978 data may reflect poor quality of the V_S measurements made 35 years ago. Interpretations of that data, however, appear to include unconservative assumptions of velocity in boreholes where no velocity was recorded..."*[17]

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[12] IPRP Report No. 6, p. 17.
[13] *Id.,* p. 3.
[14] *Id.,* p. 18.
[15] *Id.*
[16] *Id.,* p. 3.
[17] *Id.,* p. 6.

- Nor was newer data from the ISFSI[18] site without problem: *"these two profiles do not give consistent V_s measurements at given depths. Considerable variability exists at some depth ranges ... they do not help constrain the lower bound or range of velocity at the plant site."* [19]

- *"A complete consideration of site conditions across the plant footprint requires additional V_s measurements using modern technology to constrain the uncertainty and yield more reliable site V_s values."*[20]

V. PG&E's 2014 'FINAL' REPORT STONEWALLED IPRP 2013 CRITIQUE.

Despite written assurances to the CPUC staff in response to IPRP Report No. 6 that *"PG&E understands the scientific findings and will conduct the further studies noted,"*[21] and internal acknowledgment within PG&E's Geosciences Department that *"The recommended tasks described in the conclusion are reasonable and we plan to address them as part of our own updated site response evaluation,"*[22] the so-called *"final"* report submitted to the NRC on September 10, 2014 is willfully unresponsive. As summarized in the IPRP's belated review of the ground motion chapters of the 2014 *"final"* AB 1632 report:

- *IPRP Report No. 6 noted that 'V_s data at the DCPP site indicate significant variability /uncertainty' and that* ***PG&E's estimates "appear to include unconservative assumptions of velocity in boreholes'****. IPRP recommended additional studies to determine the V_s beneath DCPP and the variability of V_s.*[23] (emphasis added)

- *IPRP Report No. 6 recommended that PG&E 'demonstrate that the low site amplification seen at the DCPP site is due to site effects,* ***not specific to the azimuths and distances traveled by the recorded ground motions at the site from the two earthquakes used'***

[18] "ISFSI" is an acronym for Independent Spent Fuel Storage Installation.
[19] IPRP Report No. 6, pp. 6 – 7.
[20] *Id.,* p. 6.
[21] A4NR Opening Brief, A.14-02-008, p. 30, citing PG&E's October 10, 2013 written response to IPRP Report No. 6.
[22] A4NR Opening Brief, A.14-02-008, p. 31, citing September 9, 2013 email from Dr. Norman Abrahamson to Richard Klimczak.
[23] IPRP Report No. 9, pp. 2 – 3.

and 'justify the adequacy of using only two earthquakes to characterize site amplification'.[24] (emphasis added)

- *In response, PG&E confirmed in a letter to CPUC (PG&E, 2013) that it would conduct further studies to improve the quantification of site conditions and amplification. These studies would: (1) use new data from on-land exploration geophysics surveys to develop a 3D model of shear wave velocity beneath the plant site; (2) analyze broad band ground motion data and ground motions from small earthquakes to better quantify site-specific amplification terms; and (3) evaluate site amplification using analytical approaches in which seismic waves are propagated through a velocity model. The CCCSIP report addressed the first study as discussed in detail in the remainder of this IPRP report,* ***but not the second and third studies****.*[25] (emphasis added)

- *The high-resolution tomographic model of the area near DCPP presented in the CCCSIP report shows details of the variation in interpreted velocity. Important elements of this detailed model include: relatively low near-surface velocities in areas with remaining natural soil; relatively high near-surface velocities underlying much of the plant itself; highly variable estimates of V_{S30}; and irregularly shaped subsurface regions interpreted to have high velocity.*[26]

- *While each of these features of the tomographic model may represent improved understanding of the 'site conditions' at DCPP and may lead to decreased uncertainty in seismic hazard estimates, PG&E has not confirmed the uncertainties in these velocity estimates. Moreover, the CCCSIP report has an extensive discussion of* ***the difficulty of gaining accurate tomographic results at shallow depths, given the constrained source-receiver locations.*** [27] (emphasis added)

- *Differences between V_S profiles measured in 1978 and profiles derived from the tomographic model may reflect poor data or poor resolution in the 1978 profiles. If the 1978 downhole velocity surveys represent 'ground truth', however, it appears that the tomographic model does not show some shallow high velocity layers up to 50' thick or low velocity layers up to 100' thick.* ***The lack of correspondence between measured V_S***

[24] *Id.,* p. 3.
[25] *Id.* The "*final*" AB 1632 Report is also referred to as the "*CCCSIP*" report, an acronym for Central Coastal California Seismic Imaging Project.
[26] *Id.,* p. 4.
[27] *Id.*

profiles and V_S profiles estimated from the tomographic model suggests significant uncertainty remains in estimates of "site conditions" at DCPP. [28] (emphasis added)

- *The IPRP cannot determine if these differences reflect poor data or analysis in one or both measurements of VS or if both surveys are essentially correct, but have differing levels of spatial resolution.* ***Certainly, the differences between VS profiles from the tomographic model and previously measured VS profiles should have been addressed in the CCCSIP report.*** [29] (emphasis added)

- *For the DCPP site, the use of single station sigma with site-specific term appears to be* ***the key factor that brings the deterministic spectra below the original design spectra****.*[30] (emphasis added)

- *While the single station sigma assumption and especially the site term have a significant effect on hazard,* ***the site term is based on the observations of only two earthquakes****.*[31] *As described in IPRP Report No. 6,* ***the IPRP is not convinced that the 'site term' reflects some property of the site that would affect all earthquakes recorded at DCPP****. The alternative hypothesis that additional factors related to the particular source or paths of those two earthquakes remains at least as plausible.*[32] (emphasis added)

- *The CCCSIP report does not include any additional studies to address this issue.* ***The 3D site response analyses proposed by PG&E will not address whether single station sigma model is more reasonable than the ergodic assumption, nor will it reduce uncertainty in the site specific term that is calculated based on two recorded earthquakes****.*[33] (emphasis added)

- *Figure 6 compares deterministic spectra for the CCCSIP sensitivity scenario assuming linked co-seismic rupture of the Shoreline, Hosgri, and San Simeon Faults (M7.3). It shows that deterministic ground motion increases across the spectrum as magnitude for the Shoreline Fault rupture increases from 6.7 to 7.3. This figure also shows increased ground motion as V_S30 decreases from 1200 m/s [at the power block foundation level] to*

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[28] *Id.,* p. 5.
[29] *Id.,* pp. 5 – 6.
[30] *Id.,* p. 12.
[31] The NRC staff noted this same limitation in its 2012 assessment of PG&E's single-station-sigma adjustment at DCNPP, observing, *"Generally a larger number of earthquakes would be needed to develop confidence in the correction factor."* RIL 12-01, p. 59.
[32] IPRP Report No. 9, p. 12.
[33] *Id.*

760 m/s. ***More significantly, the figure shows, once again, that the most influential factor affecting deterministic ground motion estimates is the single station sigma assumption and the site term***.[34] (emphasis added)

- ***The 3D response analysis cannot, however, address issues associated with the site-specific term****. IPRP previously expressed its concern regarding the adequacy of using only two earthquakes in estimating the site-specific term and made recommendations to gain confidence in the PG&E site-specific approach, including analyzing broad band ground motion data and ground motions from small earthquakes to better quantify the site-specific term.* ***PG&E has not addressed these recommendations***.[35] (emphasis added)

- *The "site term" based on two recorded earthquakes may represent other factors, rather than site conditions.* ***IPRP is not convinced that this factor is adequately constrained for use in ground motion calculations***.[36] (emphasis added)

The IPRP, impeded from performing its duties by PG&E's extended embargo from mid-2013 until the AB 1632 report was "*finalized*" in September 2014, was also critical of certain aspects of PG&E's seismic source characterization when it eventually gained access to the document. IPRP Report No. 8 is particularly pointed in its assessment of PG&E's analysis of onshore faults:

- ***The IPRP is not convinced that the interpretations of the down-dip extensions of faults are well constrained, even in the case of well-documented surface faults****. Similarly, faults interpreted from the seismic sections, but not corroborated by surface mapping, (e.g. faults interpreted between the San Miguelito and Edna faults) are possible, but are by no means unique interpretations of the data.* ***Overall, the IPRP is not convinced that projections of faults beyond the very shallow subsurface represented unique interpretations of the data***.[37] (emphasis added))

- ***Projections of faults to depth in 'basement' rocks of the Franciscan complex appear to be even more problematic.*** *As discussed at the IPRP meeting on November 17, 2014, the Franciscan complex is known to be a mixture of different rock types pervasively*

[34] *Id.*
[35] *Id.,* p. 15.
[36] *Id.*
[37] IPRP Report No. 8, p. 5.

sheared at a variety of scales and is not expected to produce reflectors that are extensive over broad areas. The majority of seismic sections, (e.g. AWD line 150 as presented on Chapter 7, Figure 5-25) show prominent, continuous reflectors at relatively great depths in material that is assumed to be bedrock of the Franciscan complex.[38] (emphasis added)

- *Most deep reflectors shown on Figure 5-25, and in many other sections are arranged in groups of concave-upward, gently curved reflectors. These reflectors are interpreted in the CCCSIP report as representing geological structure.* ***The IPRP, however, regards this pattern of concave-upward sets of reflectors as difficult to explain geologically, but not difficult to envision as artifacts from the data processing. If the continuous reflectors in Franciscan complex bedrock are artifacts of data processing, rather than representing geologic structure, then the seismic reflection surveys provide no constraint on the down-dip geometry of faults in the Franciscan Complex***.[39] (emphasis added)

- *The Los Osos fault, in particular, is entirely within Franciscan Complex rocks from very shallow depths.* ***If the reflection surveys do not show real geologic structure along the down-dip extension of this fault, then dip of the fault remains essentially unconstrained.***[40] (emphasis added)

- *Since the Franciscan complex is known to be a mixture of different rock types pervasively sheared at a variety of scales, continuous, gently dipping layers are not expected.* ***The overall arrangement of the gently dipping 'reflectors' also raises questions that are not addressed in the report. In several sections, the arrangement of reflectors does not resemble a cross-section of folded or faulted rock.*** *The pattern of concave-upward sets of reflectors seen in many sections does not have an obvious geological explanation,* ***leading the IPRP to question whether they represent real geologic structure***.[41] (emphasis added)

- *Even if all reflectors shown in the seismic sections are images of geologic features,* ***the interpretations of various faults are inconsistent and not unique****: 1) In many cases, faults are interpreted based on a series of truncated reflectors, but are shown to pass through other reflectors that are not truncated; 2)* ***In some seismic sections, it appears that additional faults are permitted by the data. It is not clear how the stated interpretation methodology allowed the interpretation team to draw some faults and not others****; and 3) Alternate interpretations of the dip of most faults are possible*.[42] (emphasis added)

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[38] *Id.,* p. 6.
[39] *Id.*
[40] *Id.*
[41] *Id.,* p. 7.
[42] *Id.,* pp. 7 – 8.

- *This concern applies to the dip of the Los Osos fault. Alternate dips, including relatively low-angle dips, of the Los Osos fault appear to be possible through sections 138-149 and 150 as shown on Figures 5-24 and 5-25 of the CCCSIP report. The reduction in uncertainty in seismic hazard depicted on the 'tornado diagram' for dip of the Los Osos fault appears to be based on the CCCSIP report conclusion that the new data precludes low-angle dips.* ***The IPRP does not concur that low-angle dips are precluded by this new data and therefore does not believe that these studies have resulted in reduced uncertainty in seismic hazard related to this parameter***. [43](emphasis added)

- *Although surface faults recognized to date appear to be consistent with strike-slip faulting on the Shoreline fault, rather than thrusting on the SLRF, the possibility of thrust faults in the subsurface is not ruled out by on-land seismic survey data.* ***The interpretation of the ONSIP data is far from unique and allows one to interpret a low angle reverse fault at the proposed location, contrary to what is stated in the CCCSIP report (p.70 Figure 6-54). The CCCSIP interpretation criteria are not clearly defined and do not appear consistent in terms of selections made when seismic reflections are truncated***.[44] (emphasis added)

IPRP Report No. 8 emphasizes the curtailed nature of its after-the-fact review,[45] and points out that proper evaluation of PG&E's seismic data acquisition and processing would require the retention of outside consulting services – an authority expressly granted to the IPRP by D.10-08-003[46] and D.12-09-008,[47] and first promised at the IPRP's initial meeting on August 31, 2010,[48] but still unfulfilled as of the date of this Protest. Unsurprisingly, it was the very fear of this predictable IPRP focus on data acquisition and processing that dominated PG&E management's 2013 internal *"risk"* evaluation of a scenario labeled *"IPRP Review"*:

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[43] *Id.,* p. 8.
[44] *Id.,* p. 10.
[45] *"IPRP review of the tectonic model is based on the CCCSIP report and presentation. The IPRP has not had time, to review the seismic data processing in detail."* IPRP Report No. 8, p. 7.
[46] D.10-08-003, p. 11.
[47] D.12-09-008, p. 23.
[48] IPRP Report No. 1, p. 5.

> ***IPRP recommends additional processing of data or interpretations after their review of project results****. The project results and conclusions are to be provided to the Independent Peer Review Panel (IPRP) as a condition of authorized CPUC funding for this project.* ***They could recommend additional processing methods be applied or other interpretation techniques be utilized****. The IPRP make-up does not have members who are experienced in processing and interpretation, but* ***they could seek an independent review by others****.*[49] (emphasis added)

IPRP Report No. 9 also describes more recent obstruction to its review of PG&E's ground motion assumptions:

> *Following the public meeting on January 8, 2015, the IPRP had a number of additional questions regarding the velocity model described in Chapter 10 and requested an additional meeting with PG&E.* ***PG&E declined to meet again with IPRP****. As a result, this report only covers aspects of those models described in the CCCSIP report and the public meeting.*[50] (emphasis added)

PG&E's successful strategy to circumvent meaningful IPRP review, originally formulated in 2013 and implemented as a reaction to the devastating IPRP Report No. 6, culminated with submittal of a deeply flawed *"final"* AB 1632 Report to the NRC in 2014. As of the date of this Protest, A4NR has had insufficient time to determine the degree to which adulterated assumptions from the inadequately reviewed AB 1632 Report have driven the conclusions of the LTSP's recent SSHAC Report. The cynical fashion in which PG&E's recent publicity offensive has invoked the hamstrung IPRP review to promote the rosy conclusions of the SSHAC Report leaves little room for doubt:

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[49] A4NR Opening Brief, A.14-02-008, p. 4, quoting a March 28, 2013 submittal to PG&E's Executive Project Committee by Ed Halpin, Jeff Summy, and Richard Klimczak.
[50] IPRP Report No. 9, p. 2.

- *Independent experts also included an evaluation of the advanced seismic studies recently performed near Diablo Canyon,* ***as well as feedback on the research provided from a state-appointed independent peer review panel****.*[51] (emphasis added)

- *Their work also utilized insight gained from the advanced seismic studies recently completed near Diablo Canyon.* ***In addition, input on the advanced seismic studies provided by the California Public Utilities Commission's Independent Peer Review Panel was considered in the seismic hazard re-evaluation process****.*[52] (emphasis added)

- [This] *work also included an evaluation of the advanced seismic studies recently performed near Diablo Canyon,* ***as well as feedback on the research provided from a state-appointed independent peer review panel****.*[53] (emphasis added)

VI. DR. BLAKESLEE SPOTLIGHTS PG&E's DECEPTIVE PATTERN.

Leave it to the author of AB 1632, Dr. Sam Blakeslee, the former Exxon geophysicist who served as Republican Minority Leader of the California State Assembly, to assess the degree to which the $64.25 million ratepayer-funded seismic studies have been subverted. As Dr. Blakeslee observed in December 3, 2014 testimony to the U.S. Senate Environment and Public Works Committee, over several decades PG&E has discovered more faults in close proximity to the plant, attributed greater capability to the faults which it has acknowledged, yet consistently proclaimed the seismic risk at the plant to be diminishing: *"The potential earthquakes affecting the plant have increased with each major study. But what's equally striking is that the shaking*

[51] "*Confirming Diablo Canyon Plant's Safety*," Ed Halpin, Lompoc Record, March 14, 2015.
[52] *"Seismic and tsunami safety a priority for Diablo Canyon,"* Ed Halpin, San Luis Obispo Tribune, March 19, 2015.
[53] *"Op/ed: PG&E exec answers critics, says Diablo Canyon is safe, secure,"* Ed Halpin, Pacific Coast Business Times, March 20, 2015.

predicted by PG&E for these increasing threats has systematically decreased as PG&E adopted less and less conservative analytical methodologies..." [54]

Dr. Blakeslee was especially critical of PG&E's debased *"final"* AB 1632 Report:

> *... in a seeming contradiction, rather than finding that larger or closer faults produce greater shaking and therefore a greater threat, PG&E argues in the Report that ground motion will be lower than the levels previously estimated. In other words, these newly discovered and re-interpreted faults are capable of producing shaking that exceeds the shaking from the Hosgri, yet that shaking threat would be much reduced from prior estimates.*
>
> *Though discussed only in passing in the Report, the reason for this seeming contradiction is quite important when assessing whether or not the plant is safe or whether it is operating within its license conditions. The reason the earthquake threat purportedly went down when new faults were discovered is because the utility adopted significant changes to the methodology utilized for converting earthquakes (which occur at the fault) into ground motion (which occurs at the facility). This new methodology, which is less-conservative than the prior methodology, essentially "de-amplifies" the shaking estimated from any given earthquake relative to the prior methodology used during the licensing process.*[55]

PG&E's "*final"* AB 1632 Report artfully avoids an apples-to-apples comparison which would isolate the influence of its continuously evolving ground motion prediction methodology. The charts on pages 13 – 15 of the Technical Summary, attached to this Protest as Appendix A, purport to contrast the spectra derived from the AB 1632 studies against the 1977 Hosgri evaluation and the 1991 LTSP analysis. Neglecting to reveal the radically different methods for predicting ground motions between cases has the same power of deception as assembling a financial spreadsheet mixing different vintages of dollars without disclosure. To the extent

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[54] Written Statement by Sam Blakeslee, Ph.D, to the Senate Committee on Environment and Public Works, December 3, 2014, p. 3. Dr. Blakeslee's complete statement is accessible at http://www.epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=42d07682-cad9-49f4-bbf1-fc9757f624c9

[55] *Id.,* p. 5.

that PG&E intended anyone to rely upon the misrepresentations-by-omission contained in these charts, and such reliance were to occur, the common law uses a certain f-word to describe such conduct.

VII. PG&E's POST-CCCSIP CONTEMPTUOUS DISCLOSURE.

Having successfully circumvented the IPRP before submitting its *"final"* report to the NRC, and choosing to absorb the criticism of IPRP Report No. 8 without response, the PG&E Geosciences Department could not resist engaging in its own form of end-zone dance at the January 8, 2015 meeting of the IPRP. With peculiar aplomb, Dr. Norman Abrahamson blithely distributed a new hazard sensitivity chart, attached to this Protest as Appendix B, and acknowledged that the six highest ranked uncertainties (each relating to earthquake-induced ground motions at the plant) had never before been presented to the IPRP. Despite admitting that PG&E's void of site-specific ground motion data dominates Diablo Canyon's probabilistic seismic hazard, Dr. Abrahamson nonchalantly suggested this deficiency be addressed in PG&E's 2025 update. There was no mention of the staggering difference in magnitude between the six newly identified uncertainties and the ones which had been selected for the AB 1632 studies.[56]

His unmistakable message: having feasted on a $64.25 million authorization for ratepayer-funded studies, we never addressed the most significant issues or even told you what they were. But now we've run out the clock. Too bad, chumps.

[56] Dr. Abrahamson's discussion of the new hazard sensitivity chart runs from 1:51:27 to 2:03:25 in the video of the January 8, 2015 IPRP meeting, accessible at http://youtu.be/hXu_vn5gxMU

VIII. TO LIVE OUTSIDE THE LAW YOU MUST BE HONEST.

The light-handed oversight previously afforded PG&E in the conduct of its AB 1632 studies appears to be a legacy of the Commission's discredited, pre-San Bruno voluntary compliance era. As Executive Director Paul Clanon memorably testified to a California Senate committee, *"That can be characterized as 'self-reporting,' but a better way to look at it is creating a safety culture at the utility."*[57] He later explained that, in lieu of fines, *"a better way to ensure safety is to make sure that a utility sees violations on its own has every incentive to report them."*[58] As Mr. Clanon told a post-explosion community meeting in San Bruno, fines might *"discourage the utilities to come forward when they see a problem. A utility doesn't want their pipelines to be unsafe."*[59]

A4NR does not contend that PG&E **wants** DCNPP to be seismically unsafe. Rather, the accumulated record of PG&E's performance of its AB 1632 seismic studies documents a furtive, thumb-on-the-scale approach designed primarily to quell public apprehension and forestall pressure to close the plant. PG&E has received special dispensation from the NRC since October 12, 2012 to defer application of the Double Design Earthquake ("DDE") standard to the Shoreline Fault until submittal of the DCNPP SSHAC analysis -- despite the NRC's acknowledgment that *"using the DDE as the basis of comparison will most likely result in the Shoreline fault and the Hosgri earthquake being reported as having greater ground motion"*

[57] "PG&E Hammered Over Safety Issues," San Mateo Times, October 19, 2010.
[58] "State's gas pipeline inspections found to lag," San Francisco Chronicle, November 14, 2010.
[59] "San Bruno blast victims skeptical of PUC oversight," San Francisco Chronicle, December 8, 2010.

than the plant's Safe Shutdown Earthquake.[60] This remarkable prediction was repeated by Dr. Cliff Munson, an NRC seismologist, in testimony to a June 19, 2013 California Energy Commission workshop.[61] The indifference with which California state agencies have, at least publicly, accepted this revelation has been alarming but the financial bottom line is undeniable: significant seismic retrofit requirements seem likely to be required.[62]

A4NR does not expect the CPUC to involve itself in questions of the seismic licensing basis of DCNPP or the prudence of the manner in which the NRC has addressed the seismic licensing basis issue.[63] Instead, A4NR expects the Commission to be diligent in its application of traditional ratemaking authority to protect California's economic interest and electricity reliability interest in accurately understanding the seismic challenges facing the plant. The Commission would be derelict in meeting this responsibility by relying exclusively on PG&E's good faith or commitment to scientific objectivity.

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[60] Letter to Edward D. Halpin from Joseph M. Sebrosky, NRC Senior Project Manager for Plant Licensing Branch IV, Division of Operating Reactor Licensing, Office of Nuclear Reactor Regulation, October 12, 2012, accessible at http://pbadupws.nrc.gov/docs/ML1207/ML120730106.pdf

[61] Lead Commissioner Workshop on California Nuclear Power Plant Issues, Docket No.13-IEP-1J, June 19, 2013, Transcript, p. 89, accessible at http://www.energy.ca.gov/2013_energypolicy/documents/2013-06-19_workshop/2013-06-19_nuclear_workshop_transcript.pdf

[62] The severity of any such requirement is suggested by PG&E's 2012 submittal to the NRC of a 331-page list of DCNPP deviations from the *"new plant"* criteria Dr. Munson testified will be applied: *""The thing I want to emphasize is that the hazard evaluations are based on current practices for new reactors." Id.,* p. 81. PG&E's 331-page list of deviations is accessible at http://pbadupws.nrc.gov/docs/ML1134/ML11342A238.pdf

[63] The Union of Concerned Scientists reported in 2013 that, of the 100 reactors currently operating in the U.S., the two at Diablo Canyon top the NRC's list as being most likely to experience an earthquake larger than they are designed to withstand, using NRC data to calculate the probability of such an event as more than 10 times greater than the nuclear fleet average. "Seismic Shift: Diablo Canyon Literally and Figuratively on Shaky Ground," Union of Concerned Scientists, November 2013, p. 7, accessible at http://www.ucsusa.org/sites/default/files/legacy/assets/documents/nuclear_power/diablo-canyon-earthquake-risk.pdf

PG&E is the only NRC power plant licensee in the history of the commercial nuclear power industry to face criminal indictment for safety-related violations by the U.S. Department of Justice. While the 27 safety-related felony counts in PG&E's federal grand jury indictment are focused on the company's gas division, it strains credulity to believe that DCNPP has been somehow immunized from the corporate culture rot that recently prompted Commission President Michael Picker to acknowledge during a California Senate oversight hearing that, *" I think there's a very clear case that in some places, the utility did divert dollars that we approved for safety purposes for executive compensation."*[64] And the obstruction of justice felony count which leads PG&E's federal indictment emphatically addresses management as a whole:

> *"On or about September 10, 2010, and continuing through on or about September 30, 2011, in the Northern District of California, the defendant, PACIFIC GAS AND ELECTRIC COMPANY, **did corruptly influence, obstruct, and impede**, and did endeavor to influence, obstruct, and impede **the due and proper administration of the law** under which a pending proceeding was being had before a department and agency of the United States ..."*[65] (emphasis added)

Although perhaps not a matter of familiarity to utility regulators, the term *"RAP sheet"* is derived from the Federal Bureau of Investigation's Record of Arrests and Prosecutions. Actual conviction is not a prerequisite. A4NR is unaware of any other California electric utility with a RAP sheet. While PG&E is certainly entitled to its day(s) in court to defend itself from the federal charges, its status as a criminal defendant and the nature of its alleged crimes should

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[64] President Picker's statement is at 36:56 of the video of the March 25, 2015 oversight hearing conducted by the California Senate Committee on Energy, Utilities and Communications, accessible at http://calchannel.granicus.com/MediaPlayer.php?view_id=7&clip_id=2682

[65] United States of America v. Pacific Gas and Electric Company, United States District Court for the Northern District of California, Case 3:14-cr-00175-THE, Superseding Indictment, July 29, 2014, p. 18.

discourage the Commission from extending any presumption of veracity to the representations in PG&E's AB 1632 Report without corroboration by the most rigorous scrutiny.

IX. WHY A4NR PROTESTS.

Building upon key decisions made and implemented by PG&E in 2013, the utility intensified its efforts in 2014 to subvert what was originally conceived by the Commission as a robust re-evaluation of DCNPP's seismic setting. If PG&E is allowed to recover the costs of such subterfuge, the effect on A4NR and all PG&E customers will be electricity rates rendered both unreasonable and unjust by Commission reward of unmistakable perfidy. The consequences for A4NR members (and others) living in communities near the plant stemming from unknowing acceptance of PG&E's defective seismic analysis could, in some circumstances, be much worse than that – with incalculable financial impact on California.

A4NR requests evidentiary hearings and will conduct discovery and sponsor testimony elaborating on the facts contained in this Protest, as well as the extent to which PG&E's LTSP and SSHAC expenditures in 2014 were similarly tainted. Assuming timely responsiveness by PG&E to legitimate discovery requests, A4NR has no objection to the schedule proposed in PG&E's application.

The undersigned will be the A4NR's principal contact in this proceeding, but A4NR also asks that the following two individuals be placed in the *"information only"* category of the Service List:

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Respectfully submitted,

By: /s/ John L. Geesman

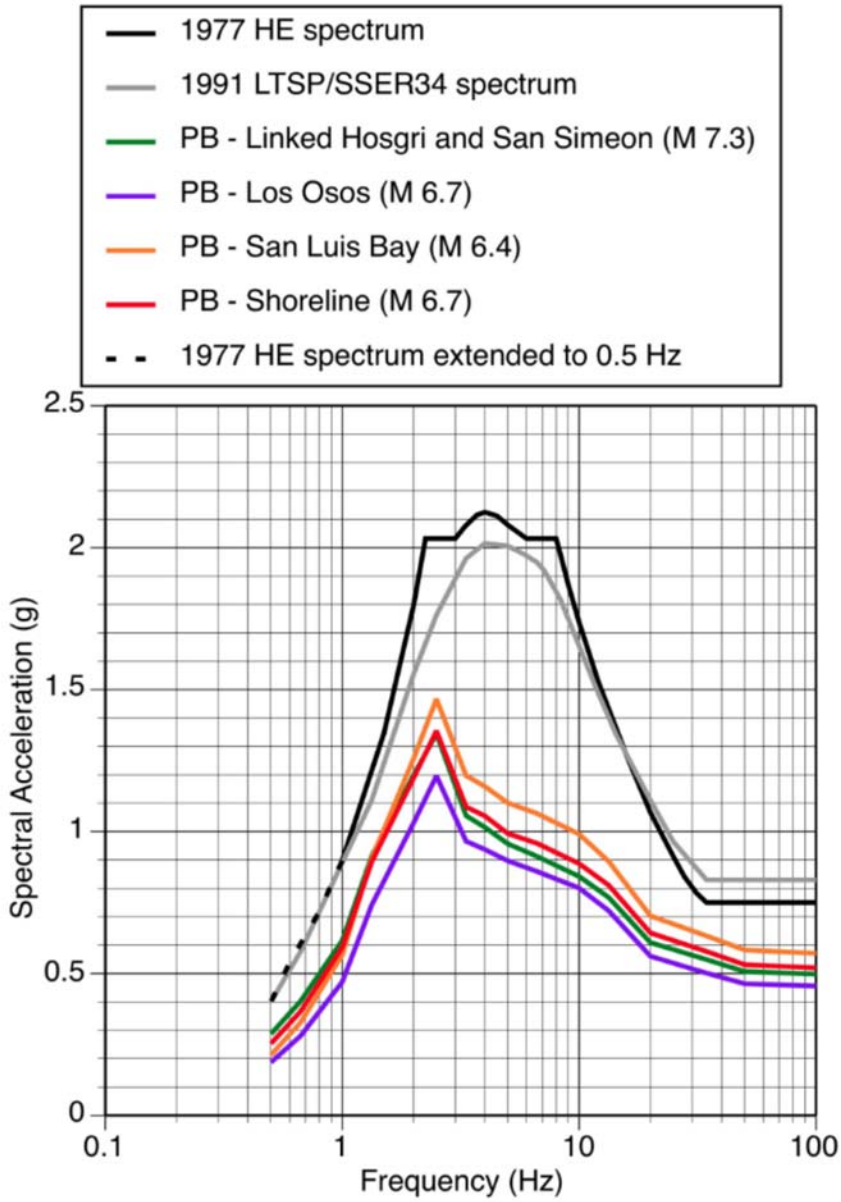
JOHN L. GEESMAN
DICKSON GEESMAN LLP

Date: April 3, 2015

Attorney for
ALLIANCE FOR NUCLEAR RESPONSIBILITY

APPENDIX A

PG&E SPECTRA CHARTS FROM CCCSIP REPORT

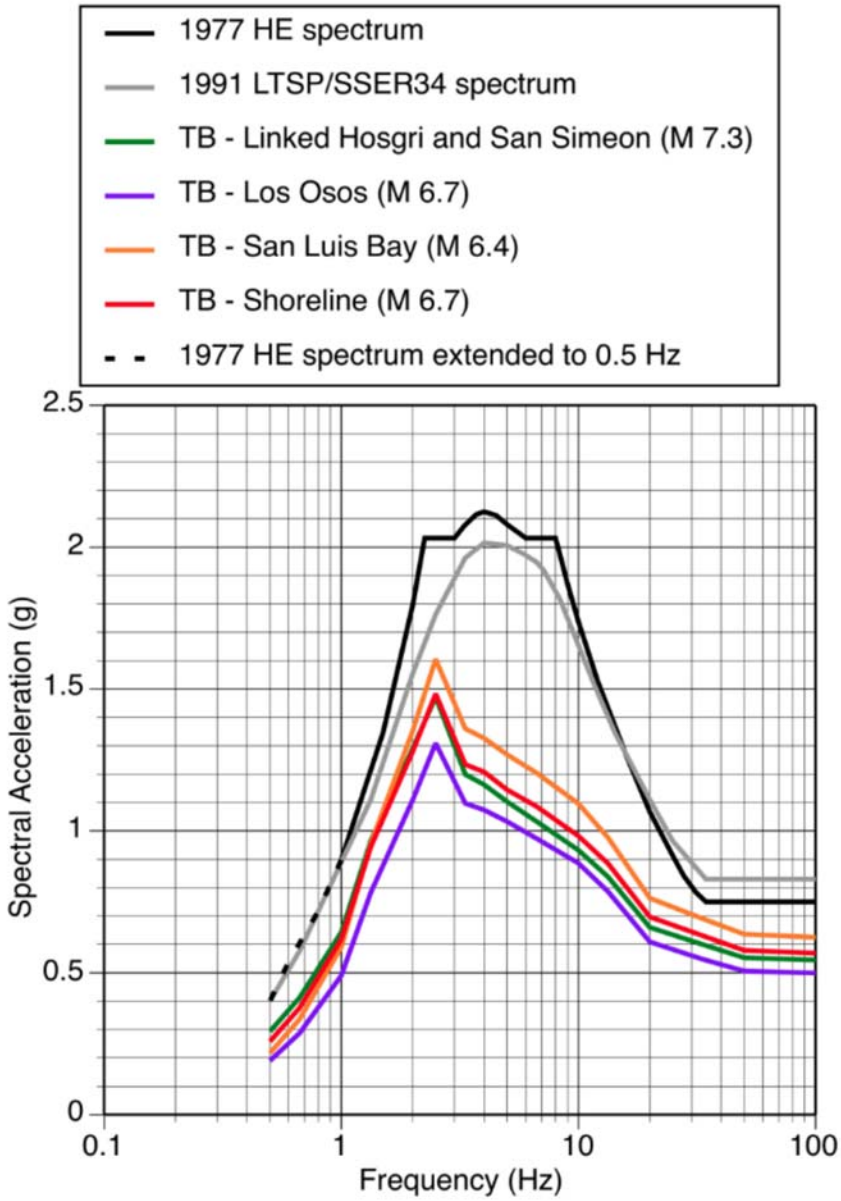


The 84th Percentile Deterministic Ground Motions for Four Fault Scenarios Compared to the 1977 Hosgri Earthquake (HE) and the 1991 LTSP/SSER 34 Spectra for the DCPP Power Block

CCCSIP REPORT

Pacific Gas and Electric Company

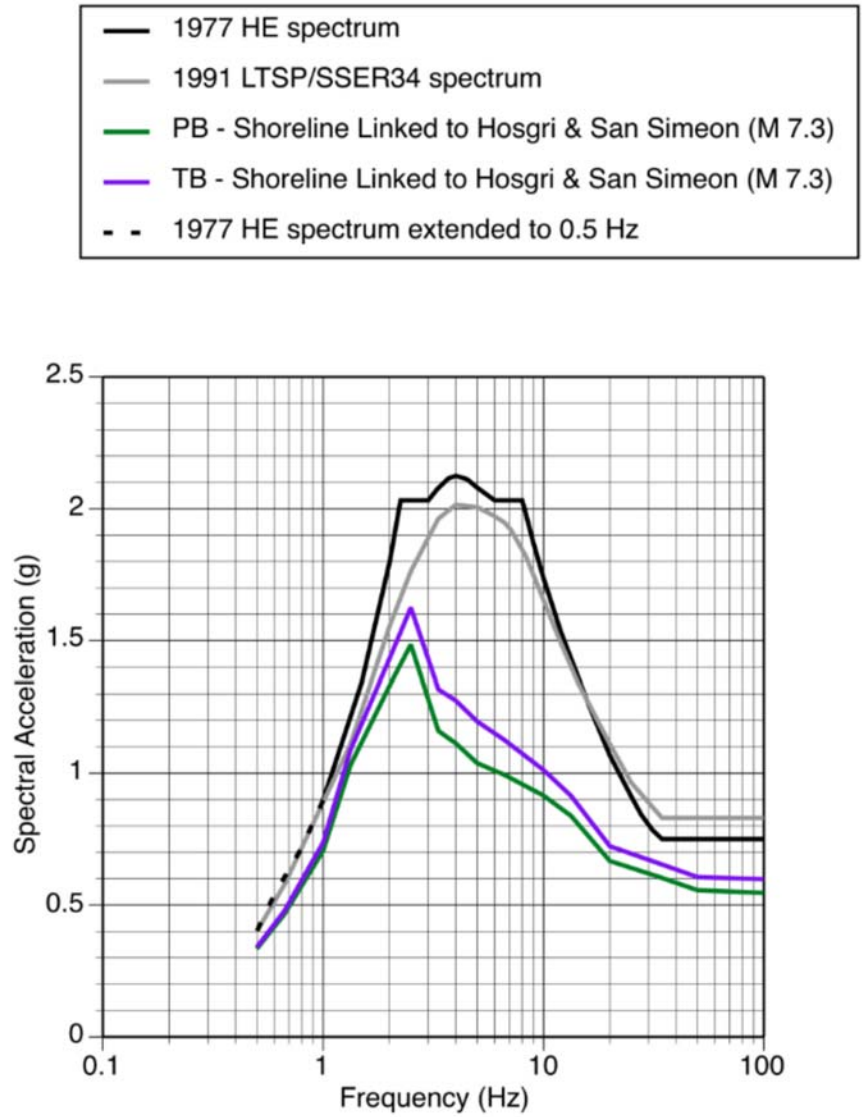
Figure **1-1**



The 84th Percentile Deterministic Ground Motions for Four Fault Scenarios Compared to the 1977 Hosgri Earthquake (HE) and the 1991 LTSP/SSER 34 Spectra for the DCPP Turbine Building

CCCSIP REPORT

Pacific Gas and Electric Company | Figure **1-2**



The 84th Percentile Deterministic Ground Motions for Joint Shoreline and Hosgri-San Simeon Fault Rupture Compared to the 1977 Hosgri Earthquake and the 1991 LTSP/SSER 34 Spectra for the DCPP Power Block and Turbine Buildings

CCCSIP REPORT

Pacific Gas and Electric Company

Figure **1-3**

APPENDIX B

PG&E LATE-DISTRIBUTED HAZARD CHART

Hazard Sensitivity
5 Hz, PSA = 2g