

ORAL ARGUMENT NOT YET SCHEDULED

UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

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FRIENDS OF THE EARTH)
)
Petitioner,)
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v.)
)
UNITED STATES NUCLEAR)
REGULATORY COMMISSION)
and the UNITED STATES OF AMERICA,	No. 14-1213)
)
Respondents,)
)
-----)
)
PACIFIC GAS AND ELECTRIC COMPANY,)
)
Intervenor)
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**INTERVENOR’S RESPONSE TO
RESPONDENTS’ MOTION TO DISMISS**

Pursuant to Rule 27 of the Federal Rules of Appellate Procedure, Intervenor Pacific Gas and Electric Company (“PG&E”) hereby responds to the Respondents’ Motion to Dismiss dated December 10, 2014. Respondents request that the Court dismiss the Petition for Review filed by Friends of the Earth on October 28, 2014,

for lack of jurisdiction and for failure to exhaust administrative remedies. PG&E supports the Respondents' Motion to Dismiss.

First, as explained by Respondents, Petitioner has filed an administrative hearing request at the Nuclear Regulatory Commission ("NRC" or "Commission") raising the same issues as in the Petition for Review and seeking the same relief. Before the Commission, Petitioner argues that the NRC improperly granted a *de facto* license amendment to PG&E without offering a hearing opportunity. That hearing request remains pending before the Commission. Therefore, the Petition for Review is not ripe. Second, Petitioner fails to point to any reviewable final order in any proceeding below. The NRC has not approved, and is not required to approve, PG&E's revision to the Updated Final Safety Analysis Report ("UFSAR") for the Diablo Canyon Power Plant ("Diablo Canyon"). Thus, there is no NRC "final order" reviewable under the Hobbs Act. Third, Petitioner is in effect seeking review of NRC's oversight of Diablo Canyon. But Petitioner has not utilized the procedure provided under NRC regulations (10 C.F.R. § 2.206) for stakeholders to initiate a proceeding in which to seek NRC action, thereby failing to exhaust its administrative remedies. In the matter still pending before the Commission, Petitioner argues that the Section 2.206 process is not a viable process for it to raise its issues. But that argument is itself still before the

Commission, and therefore merely confirms the first point above – this matter is not ripe for this Court’s review.

BACKGROUND

The NRC licensed PG&E’s Diablo Canyon nuclear generating plant for operation in 1984. As part of the licensing process, the NRC evaluated the capability of the plant to function as intended in the event of an earthquake. Diablo Canyon’s license was issued based on several different seismic assessments, including an assessment of the maximum ground motions from a potential earthquake on the nearby Hosgri Fault. The evaluation demonstrated that plant structures and components will function to safely shut down the plant under the loads created by the largest expected ground motions. The design basis for the plant – and the basis for NRC issuance of the license – is a set of ground motion response spectra. Ground motions bounded by that licensing basis, regardless of the earthquake source, will not exceed the plant’s capabilities.

An NRC licensing review is based upon an application that includes a Final Safety Evaluation Report (“FSAR”). After the license is issued, NRC regulations require that the licensee “shall update periodically. . . the [FSAR] originally submitted as part of the application for the license, to assure that the information included in the report contains the latest information developed.” 10 C.F.R. § 50.71(e). For Diablo Canyon, this periodic update of the UFSAR occurs every

two years, most recently with UFSAR Revision 21 submitted in September 2013. A revision may incorporate new or clarifying information, and must incorporate the impacts of license amendments approved by the NRC in the reporting period as well as changes made without approval in accordance with NRC regulations (10 C.F.R. § 50.59).¹ As discussed further below, the NRC does not approve UFSAR revisions; the requirement to update this licensee-controlled document is a licensee's reporting obligation, not a license amendment.

Ordinarily, NRC regulations do not require updated seismic evaluations after initial licensing.² However, the Diablo Canyon license included a condition that required PG&E to confirm the adequacy of the seismic design through a Long Term Seismic Program. PG&E completed that confirmatory effort and demonstrated that the licensing basis remained adequate. The program and results

¹ As discussed by Respondents (Motion to Dismiss at 4), changes to the plant and its operating procedures are separately controlled by 10 C.F.R. § 50.59. That regulation applies to changes that are within the scope of the design and licensing basis. If a change affects the terms of the license or the technical specifications that are appended to the license, NRC approval in the form of a license amendment is required. If not, the regulation includes criteria for licensees to evaluate proposed changes to determine whether NRC approval is required in the form of a license amendment or whether the licensee is permitted to make the change without approval. In either case, the UFSAR would later be revised accordingly, to the extent necessary, and reported to the NRC in the updating process. The licensee must retain documentation of its implementation of this process for NRC inspection.

² If new information were to come to light demonstrating seismic hazards for a site greater than originally anticipated, the NRC retains the ability to exercise its oversight authority and to require plant upgrades. After the accident at Fukushima Daiichi in Japan, the NRC has initiated a process by which all U.S. licensees are re-evaluating seismic hazards using state-of-the-art data and methodologies. As part of this oversight process, PG&E is scheduled to submit seismic hazards information on Diablo Canyon in March 2015.

were accepted by the NRC to close the license condition in 1991.³ Since then, PG&E has maintained a program to continually gather and assess updated seismic information, and to address the implications for safe operation of Diablo Canyon.

Based on its ongoing commitment to seismic safety, and through its collaboration with independent seismic experts, PG&E in 2008 identified a new zone of seismicity near the Diablo Canyon site, referred to as the Shoreline Fault. PG&E promptly completed an initial evaluation and concluded that ground motions resulting from earthquakes on the Shoreline Fault would not exceed those for which the plant was previously analyzed. PG&E reported preliminary information to the NRC in November 2008, and the NRC reviewed that information as part of its oversight function. The NRC reached the same conclusion as PG&E.⁴

After further study, PG&E submitted a more complete assessment of the Shoreline Fault in January 2011. PG&E concluded that updated ground motions from the four faults in the region of Diablo Canyon (including the Hosgri and Shoreline Fault) were bounded by the ground motions used in the licensing basis seismic evaluations. PG&E submitted its report for information; no plant or

³ NUREG-0675, "Safety Evaluation Report Related to the Operation of Diablo Canyon Nuclear Power Plant, Units 1 and 2," Supplement No. 34 (June 1991).

⁴ Memorandum, B.W. Sheron to E.J. Leeds, "Research Information Letter 09-001: Preliminary Deterministic Analysis of Seismic Hazard at Diablo Canyon NPP from Newly Identified 'Shoreline Fault'" (April 8, 2009) at 2.

procedure change was involved; and no license amendment was requested by the NRC and none was required under NRC regulations.⁵

As described by Respondents, the NRC exercised its oversight responsibilities in connection with PG&E's report on the Shoreline Fault. The NRC staff independently evaluated the data and confirmed its earlier assessment that the new information did not present a safety issue for Diablo Canyon or require a change to the license. The NRC staff's evaluation was documented in a comprehensive report.⁶ The NRC staff's conclusions were also summarized in a letter to PG&E dated October 12, 2012.⁷ The agency's experts concluded that the seismic loading levels predicted for the Shoreline Fault earthquake scenarios are at, or below, those levels projected for the Hosgri earthquake analyzed for licensing the plant and in the Long Term Seismic Program. The NRC staff concluded that "the existing design basis for the plant already is sufficient to withstand those

⁵ There were later disagreements within the NRC regarding how the new seismic information should be evaluated, most prominently including views of the NRC's senior resident inspector at Diablo Canyon at the time. PG&E at one point proposed a license amendment to attempt to resolve the issues. However, the NRC staff later determined that the license amendment was not needed and PG&E withdrew the proposal. The senior resident inspector used NRC's non-concurrence process and lodged a Differing Professional Opinion ("DPO"). NRC staff management ultimately disagreed with the DPO. Petitioner, both at the Commission and in its Petition for Review, cites this DPO. However, the DPO process is internal to the NRC and Petitioner has no standing to challenge the NRC management decision on the individual inspector's DPO.

⁶ Research Information Letter 12-01, "Confirmatory Analysis of Seismic Hazard at the Diablo Canyon Power Plant from the Shoreline Fault Zone" (September 2012).

⁷ NRC Letter to E.D. Halpin, "Diablo Canyon Power Plant, Unit Nos. 1 and 2 – NRC Review of Shoreline Fault (TAC Nos. ME5306 and ME5307)" (October 12, 2012).

ground motions.”⁸ It further concluded that “the Shoreline scenario should be considered as a lesser included case under the Hosgri evaluation and the licensee should update the final safety analysis report (FSAR), as necessary, to include the Shoreline scenario in accordance with the requirements of 10 C.F.R. § 50.71(e).”⁹

Accordingly, PG&E incorporated the Shoreline scenario into the UFSAR in Revision 21, submitted to the NRC in September 2013. Petitioner now asks this Court to review a non-existent “final order” of the NRC “approving” UFSAR Revision 21. Petitioner maintains that the NRC violated Section 189.a of the Atomic Energy Act by issuing the “approval” without providing notice and an opportunity for hearing. Petitioner asks this Court to remand the matter to the NRC for completion of the hearing, and to suspend Diablo Canyon operation until that hearing is complete.

However, prior to the Petition for Review, on August 26, 2014, Petitioner filed an administrative hearing request at the NRC, making the same argument and seeking the same relief as in this Court. That hearing request has been briefed and remains before the Commission for decision.

⁸ *Id.* at 4.

⁹ *Id.*

ARGUMENT

A. The Matter Raised On Review Is Still Before the Commission

The Petition for Review in this Court duplicates the administrative hearing request that is currently pending before the NRC. The Petitioner here is challenging the same NRC action (or inaction), raising the same issues, and seeking the same remedy as it seeks at the Commission. For this reason alone, the Petition for Review should be dismissed.

First, Petitioner challenges the same action before the Commission and this Court: NRC's alleged "approval" of UFSAR Revision 21. To the Commission, Petitioners claim that the NRC has acted improperly "by approving [UFSAR] Revision 21."¹⁰ To this Court, Petitioner also has stated that the action challenged is the NRC's "approval of Revision 21 to the [UFSAR]."¹¹ Before the Commission, Petitioner did not specifically challenge the June 23, 2014 "Bamford Memorandum"¹² first identified by Respondents in the Motion to Dismiss, because Petitioner apparently was unaware of the Bamford memo at that time.

¹⁰ Friends of the Earth's Reply to NRC Staff's and [PG&E's] Answers and Proposed *Amicus Curiae* Nuclear Energy Institute's Brief in Response to Petition to Intervene and Request for Hearing (Oct. 14, 2014) ("Friends of the Earth Reply") at 11 [Exhibit 2 to Motion to Dismiss].

¹¹ Petitioner's Attachment to Docketing Statement (Dec. 1, 2014) at 1.

¹² Memorandum, P. Bamford to M. Markley, "Diablo Canyon Power Plant, Units 1 and 2 – Review of Final Safety Analysis Report Update, Revision 21 (TAC NOS. MF2946 and MF 2946" (June 23, 2014) [Exhibit 3 to Motion to Dismiss].

Nonetheless, the Bamford Memorandum is now simply held out by Petitioner to be the vehicle for NRC's "approval" of UFSAR Revision 21. The purported NRC action at issue ("approval" of the revision) is still exactly the same in both forums.

Second, Petitioner raises the same legal issue before the Commission and this Court. The Petitioner argues before the Commission that "[t]he [NRC] Staff has improperly issued a *de facto* license amendment by approving [UFSAR] Revision 21" without providing "an opportunity for the public to participate as required by § 189a of the Atomic Energy Act."¹³ Identically, Petitioner here argues that the NRC's failure "to provide notice to the public of Revision 21 to the [UFSAR] for Diablo Canyon . . . and an opportunity for a hearing on the same, deprived Petitioner of its hearing rights in a license amendment proceeding under section 189a of the Atomic Energy Act."¹⁴

Petitioner's factual assertions before the Commission and the Court are also the same – namely, that Diablo Canyon is operating outside of its licensing basis and beyond its operating authority by virtue of the information included in

¹³ Friends of the Earth Reply at 11, 12 [Exhibit 2 to Motion to Dismiss]. Petitioner's claim at the Commission is distinctly not about the agency's decision to address Diablo Canyon seismic issues through a separate process it established for reassessing seismic hazards after the accident at Fukushima Daiichi. Petitioner mentions the post-Fukushima process in its briefs before the Commission only to support its fundamental challenge that Diablo Canyon is operating outside of its licensing basis through an improperly granted *de facto* license amendment. Petition to Intervene and Request for Hearing by Friends of the Earth (Aug. 26, 2014) at 5, 20, 41, 57 [Exhibit 1 to Motion to Dismiss].

¹⁴ Petitioner's Non-Binding Statement of Issues to be Raised (Dec. 1, 2014) at 1-2.

Revision 21. Before the Commission, Petitioner states that “until [UFSAR] Revision 21 . . . the [Hosgri Earthquake] was not part of Diablo Canyon’s seismic design basis.”¹⁵ (Without getting into the merits here, suffice it to say that PG&E has disputed those assertions at the Commission.¹⁶) Before this Court, Petitioner again maintains that “[t]he main subject of Revision 21 is the addition of a different method of analysis (and attendant assumptions) required to evaluate new information about the seismic conditions (i.e., capability of faults) around [Diablo Canyon].”¹⁷ (In this regard Petitioner is in some respects challenging inputs used in the Hosgri Earthquake evaluation and approved by the NRC prior to plant licensing 30 years ago.) The complicated factual issues underlying the hearing request at the NRC and the current Petition for Review are undeniably identical.

Finally, Petitioner seeks the exact same remedy before this Court and the Commission: shutting down Diablo Canyon pending an NRC hearing on the alleged license amendment. Petitioner has argued to the Commission that “PG&E should be ordered to suspend operations at Diablo Canyon pending [] conclusion of the process to amend Diablo Canyon’s operating license....”¹⁸ Here, Petitioner

¹⁵ Friends of the Earth Reply at 5 [Exhibit 2 to Motion to Dismiss].

¹⁶ Pacific Gas and Electric Company’s Answer to Friends of the Earth Hearing Request (Oct. 6, 2014) (Exhibit 1).

¹⁷ Petitioner’s Attachment to Docketing Statement at 1.

¹⁸ Petition to Intervene and Request for Hearing by Friends of the Earth (Aug. 26, 2014) at 91 [Exhibit 1 to Motion to Dismiss].

requests that the Court “remand the matter to NRC for proper execution of the public hearing requirements for license amendments under the Atomic Energy Act and the agency’s own regulations” and “order that Diablo Canyon temporarily suspend operation until those proceedings are complete.”¹⁹ At bottom, in both forums, Petitioner is seeking identical remedies.

The ripeness doctrine is intended to “prevent the courts, through avoidance of premature adjudication, from entangling themselves in abstract disagreements over administrative policies, and also to protect the agencies from judicial interference until an administrative decision has been formalized and its effects felt in a concrete way by the challenging parties.” *Abbott Lab. v. Gardner*, 387 U.S. 136, 148-49 (1967). The two-part test for ripeness requires courts to evaluate the fitness of the issue for judicial decision, as well as the hardship to the parties of withholding court consideration. *Id.* at 149. Fitness of the issue for review turns on whether the issue is a purely legal one, and whether the agency or court will benefit from deferring review until the issue arises in a more concrete and final form. *Id.*; *Eagle-Pitcher Indus., Inc. v. EPA*, 759 F.2d 905, 915 (D.C. Cir. 1985) (quotations omitted); *see also Andrade v. Lauer*, 729 F.2d 1475, 1481 (D.C. Cir. 1984) (fitness “is primarily an inquiry into whether the factual setting of the case is sufficiently clear to be susceptible to adjudication”).

¹⁹ Petition for Review (Oct. 28, 2014) at 3.

The Petition for Review is not fit for judicial decision. The issue of whether a Diablo Canyon license amendment is necessary is not a purely legal issue. Petitioner argues that it is entitled to a hearing on seismic issues under Section 189.a of the Atomic Energy Act. It supports that argument by characterizing seismic information reported by PG&E and reviewed by the NRC, and argues that the plant is operating outside its licensing basis. Addressing that argument involves complex facts regarding the NRC licensing history of Diablo Canyon and the application of NRC's regulatory requirements and processes to those facts. As discussed in PG&E's response to the petition filed with the Commission,²⁰ Petitioner's arguments are based on a flawed understanding of both the licensing history of Diablo Canyon and the implications of the seismic information developed by PG&E related to the Shoreline Fault. Petitioner mischaracterizes the requirements of the NRC operating license and the plant's licensing basis, and errs in asserting that the NRC must approve (or has approved) UFSAR Revision 21. *But these matters are all still before the Commission.* This Court will benefit greatly from allowing the Commission to develop the record and apply its expertise in addressing the issues in a final agency decision.

With respect to the second test for ripeness, there would be no hardship to the parties resulting from this Court withholding judicial review at this time. The

²⁰ Exhibit 1 at 2-12.

matter is fully briefed at the agency and only awaits a Commission decision. Petitioner would retain the right to seek review of the Commission's final action on its administrative hearing request. Conversely, the Commission might grant the Petitioner's request and thereby eliminate any need for review. The Motion to Dismiss therefore should be granted based on a clear and simple application of the traditional ripeness principle.

B. There Is No Reviewable Final Agency Order

In addition to not being ripe, there is no final agency action or reviewable order in a proceeding under Section 189 of the Atomic Energy Act for the Petitioner to challenge. As described above, the Commission has not yet acted on Petitioner's hearing request; thus, there is no final action on that request. Petitioner cites *PG&E's* revision to its UFSAR as the agency action for which it seeks review. But, as discussed here, the NRC does not "approve" UFSAR revisions, and hence there is no approval related to UFSAR Revision 21 (much less a proceeding below leading to a reviewable final action) for this Court to review.

As explained by Respondents, PG&E submitted UFSAR Revision 21 in accordance with 10 C.F.R. § 50.71(e)(4). Any NRC's review of a UFSAR revision would be conducted as part of the agency's routine inspection and enforcement (*i.e.*, oversight) functions. If a licensee fails to update its report appropriately, the licensee is subject to NRC enforcement action.

But the UFSAR revision itself is not a license, license amendment, *or even an NRC document*. The NRC requires licensees, after the plant has been licensed, to periodically update the UFSAR to “assure that the information included in the [UFSAR] contains the latest information developed.” 10 C.F.R. § 50.71(e). The NRC under its rules does not approve UFSAR revisions and there is no administrative proceeding on those revisions. As explained by the Commission in adopting its regulations, submitting a UFSAR revision under Section 50.71(e):

. . . does not constitute a licensing action but is only intended to provide information. . . . Thus, for example, approvals of license amendments and technical specification changes are independent of the FSAR updating process. . . . The material submitted may be reviewed by the NRC staff but will not be formally approved.²¹

In fact, PG&E’s September 2013 revisions of sections of the UFSAR related to geoscience issues and the seismic design of the plant were intended to accomplish two goals: (1) to clarify the licensing history with respect to seismic issues and the basis for NRC’s issuance of the license; and (2) to incorporate a summary of the Shoreline Fault evaluations that have been completed since 2008, consistent with the NRC’s independent conclusion in 2012 that the Shoreline Fault should be considered “a lesser included case” under the licensing basis Hosgri Earthquake evaluation.

²¹ Periodic Updating of Final Safety Analysis Reports, Final Rule, 45 Fed. Reg. 30,614, 30,615 (May 9, 1980).

In this case the Respondents refer to the “Bamford memo”²² documenting the NRC’s receipt and initial review of PG&E’s UFSAR Revision 21. That review found no compliance issues. But the Bamford memo does not “approve” PG&E’s UFSAR Revision 21. It does not curtail further NRC inspection of PG&E’s documentation or assessment of the revisions. NRC inspectors remain free to audit underlying information within their discretion. The memorandum also does not decide whether the revisions included in UFSAR Revision 21 required a license amendment. (That issue is pending before the Commission, as discussed above.) The Bamford memo is an internal NRC document. And, at most, it documents only a preliminary agency review. It is no more reviewable under the Hobbs Act than either an NRC inspection report or an internal NRC memorandum.

Under the Hobbs Act, 28 U.S.C. § 2342(4), and the Atomic Energy Act, 42 U.S.C. § 2239.b this Court has jurisdiction to review final orders of the NRC in agency licensing proceedings. The Hobbs Act gives the United States Courts of Appeals “exclusive jurisdiction to enjoin, set aside, suspend (in whole or in part), or to determine the validity of . . . all final orders of the [Nuclear Regulatory Commission] made reviewable by Section 2239 of title 42.” 28 U.S.C. § 2342(4).

²² Respondents’ Motion to Dismiss (Dec. 10, 2014), at 14-16 [Exhibit 3 to Motion to Dismiss].

Under 42 U.S.C. § 2239, final orders include “[a]ny final order entered in any proceeding” for granting or amending a license.

Under *Bennett v. Spear*, the two-part test for final agency action requires that there be an action that: (1) marks “the consummation of the agency’s decisionmaking process” and (2) is one by which rights, obligations, or “legal consequences will flow.” 520 U.S. 154 (1997) (quotations and citations omitted). In considering whether an agency action is final, courts evaluate whether the administrative decision-making process is sufficiently developed such that judicial review will not disrupt the orderly process of adjudication. *Natural Res. Def. Council v. NRC*, 680 F.2d at 816 n.11, citing *Port of Boston Marine Terminal Ass’n v. Rederiaktiebolaget Transatlantic*, 400 U.S. 62 (1970). The Bamford memo, like the UFSAR revision itself, is not a reviewable final order of the agency. It is not the consummation of any administrative process. Nor does it impose an obligation, deny a right, or fix a legal relationship. In fact, judicial consideration at this time will certainly disrupt the NRC administrative process on the pending hearing request. The Petition for Review should be dismissed for lack of a reviewable final order.

C. Petitioner Has Not Exhausted Administrative Remedies

The Motion to Dismiss should be granted for a third, independent reason. Petitioner’s issue goes squarely to NRC’s oversight and enforcement functions –

that is, whether the NRC has taken sufficient regulatory action related to the seismic issues addressed in PG&E's latest UFSAR revision. Under NRC regulations, if an interested party seeks additional NRC's oversight or enforcement – including that the agency revoke, modify, or suspend a license – that party must file a petition seeking enforcement under 10 C.F.R. § 2.206.²³ While the regulation is permissive (a party “may” seek enforcement action), it is nonetheless the required process when a party seeks enforcement action. The regulation allows a petitioner to initiate a proceeding before the agency to determine whether enforcement action is necessary. If the NRC agrees, enforcement action may be appropriate.²⁴ And a license amendment may be required – in which case Petitioner would have its hearing opportunity.²⁵ Or, if the petition for enforcement is denied, there would be a final agency order. Petitioner has simply failed to

²³ Before the NRC, Petitioner has filed a “Petition to Intervene and Request for Hearing,” described above. This is different from a Section 2.206 petition for enforcement.

²⁴ The NRC may reject a Section 2.206 petition if it seeks to deny a license amendment, because that type of request should be addressed in the context of the licensing action. NRC Management Directive 8.11, “Review Process for 10 CFR 2.206 Petitions,” Handbook III at 12. But nothing precludes a petitioner from using the Section 2.206 process to ultimately require a license amendment (and related hearing opportunity).

²⁵ For example, if Petitioner asserts that a change was made inappropriately under 10 C.F.R. § 50.59, it can raise that issue in an administrative Section 2.206 petition for enforcement.

follow the available administrative process necessary to reach a final, reviewable agency action.²⁶

The Petitioner filed its hearing request at the Commission on the same issue that they could have (and should have) challenged via the agency's Section 2.206 process. The Petitioner simply bypassed the NRC's process for seeking agency enforcement action and challenging the agency's allegedly lax oversight.²⁷ A petitioner must exhaust its administrative remedies before proceeding to court. *Myers v. Bethlehem Shipbuilding Corp.*, 303 U.S. 41, 50-51 (1938). The exhaustion requirement discourages flouting of administrative procedures; protects agency autonomy by allowing the agency to rule in the first instance; aids judicial review by developing the factual record; and promotes judicial economy by

²⁶ The Commission recently ruled on a similar request for hearing on an alleged *de facto* license amendment involving replacement steam generators installed under 10 C.F.R. § 50.59 (*i.e.*, without a license amendment). The Commission held that "hearing opportunities do not attach to licensee changes made under section 50.59 because they do not require NRC approval, and we decline to grant a discretionary hearing under these circumstances. We have long held that a member of the public may challenge an action taken under section 50.59 only by means of a petition for enforcement action under 10 C.F.R. § 2.206." *Florida Power & Light Co.* (St. Lucie Plant, Unit 2), CLI-14-11, 79 NRC __ (Dec. 19, 2014, slip op. at 16-17) (footnotes omitted; emphasis added).

²⁷ This Court and the Commission have both recognized the viability of 10 C.F.R. § 2.206. See *Bellotti v. NRC*, 725 F.2d 1380, 1383 (D.C. Cir. 1983) ("A petition is not a futile gesture, for the Commission may not deny it arbitrarily."); *State of Alaska Dep't of Transp. and Pub. Facilities*, CLI-04-26, 60 NRC 399, 407 n.35 (2004) (indicating that if an individual believes that NRC has not gone far enough to remedy a safety concern, then they are free to file a Section 2.206 petition); *Pub. Serv. Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438, 442 (1980) ("[T]he NRC already provides a separate procedure, under 10 C.F.R. 2.206, for any interested person to seek enforcement actions beyond those adopted.").

potentially obviating judicial involvement. *Andrade v. Lauer*, 729 F.2d at 1484. Petitioner failed to exhaust administrative remedies by not challenging, through the appropriate administrative process, either the agency's oversight of UFSAR Revision 21 or the agency's enforcement of the plant's seismic licensing basis.²⁸ This failure contravenes the exhaustion principle.²⁹ Petitioner has argued to the Commission that the Section 2.206 process is neither viable nor necessary under its circumstances. But that argument is still before the Commission, and therefore only confirms the first point above – the Petition for Review is not ripe.

²⁸ The NRC's denial of a Petition for Enforcement under 10 C.F.R. § 2.206 is appealable to the courts of appeals. *Florida Power & Light Co. v. Lorion*, 470 US 729, 746 (1985).

²⁹ *Darby v. Cisneros*, 509 U.S. 137 (1993), which applies to suits brought under the Administrative Procedure Act, is distinguishable. First, Petitioner's lawsuit is based, at least in part, on Section 189.a of the Atomic Energy Act. Second, the NRC's regulation 10 C.F.R. § 2.206 establishes an exhaustion requirement in that the regulation provides the sole mechanism by which citizens may seek enforcement action.

CONCLUSION

The Respondents' Motion to Dismiss should be granted.

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Dated: December 29, 2014

ORAL ARGUMENT NOT YET SCHEDULED

UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

FRIENDS OF THE EARTH

Petitioner,

v.

UNITED STATES NUCLEAR
REGULATORY COMMISSION
and the UNITED STATES OF AMERICA,

Respondents,

No. 14-1213

PACIFIC GAS AND ELECTRIC COMPANY,

Intervenor

CERTIFICATE OF SERVICE

I hereby certify that on this 29th day of December, copies of “Intervenor’s Response to Respondents’ Motion to Dismiss” in the captioned proceeding have been served by Electronic Case Filing (“ECF”).

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EXHIBIT 1

Intervenor PG&E's Response to Respondents' Motion to Dismiss

No. 14-1213 (D.C. Cir.)

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of:)	
)	
PACIFIC GAS AND ELECTRIC)	Docket No. 50-275-LR
COMPANY)	Docket No. 50-323-LR
)	
(Diablo Canyon Power Plant, Units 1 and 2))	

PACIFIC GAS AND ELECTRIC COMPANY'S ANSWER TO
FRIENDS OF THE EARTH HEARING REQUEST

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October 6, 2014

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October 6, 2014

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of:)	
)	
PACIFIC GAS AND ELECTRIC)	Docket No. 50-275-LR
COMPANY)	Docket No. 50-323-LR
)	
(Diablo Canyon Power Plant, Units 1 and 2))	

PACIFIC GAS AND ELECTRIC COMPANY’S ANSWER TO
FRIENDS OF THE EARTH HEARING REQUEST

INTRODUCTION

On August 26, 2014, Friends of the Earth (“FOE”) filed a petition seeking a hearing on seismic issues related to the Diablo Canyon Power Plant (“Diablo Canyon” or “DCPP”).¹ The Petition does not reference any pending licensing action or notice of opportunity for hearing. Instead, FOE asserts that the NRC Staff has taken insufficient action to assure safe operation in light of seismic information developed in recent years about the Shoreline fault zone (“Shoreline Fault”) and other faults near Diablo Canyon. FOE contends that allowing continued operation of Diablo Canyon constitutes a *de facto* license amendment that entitles it to a hearing.

In accordance with 10 C.F.R. § 2.309(i), Pacific Gas and Electric Company (“PG&E”) herein answers the Petition and opposes the hearing request. There is no license amendment pending, *de facto* or otherwise, that creates a hearing opportunity under the Atomic Energy Act. In fact, FOE mischaracterizes the seismic licensing basis for Diablo Canyon. Since self-identifying and reporting information related to the Shoreline Fault in 2008, PG&E has demonstrated (and the

¹ “Petition to Intervene and Request for Hearing by Friends of the Earth,” dated August 26, 2014 (“Petition”). Formal service was made by the NRC Office of the Secretary on August 27, 2014.

NRC Staff has confirmed) that Diablo Canyon is being operated safely and within the licensing basis for the Hosgri fault, which is the dominant seismic hazard in the region of the plant. FOE's Petition is also entirely inconsistent with the process that the NRC has established for all U.S. plants to reevaluate the seismic hazards and seismic licensing bases following the accident at the Fukushima plant in Japan. Any plant or licensing basis changes found to be necessary, and any required license amendments and hearing opportunities, will be identified in due course in accordance with that process and relevant NRC regulations.

FACTUAL BACKGROUND

A. FOE Mischaracterizes the Diablo Canyon Seismic Licensing Basis

FOE's Petition is premised on an inaccurate characterization of the Diablo Canyon seismic licensing basis and the implications of the Shoreline Fault, and on a Differing Professional Opinion pursued by Dr. Michael Peck that was recently rejected by NRC Staff management (and that did not, in any event, identify any immediate or significant safety concern). FOE contends that the NRC Staff has "embarked on a drastic departure from accepted Standard Review Plan methods of evaluating seismic risk to allow PG&E to use an analytical method less rigorous than provided in the licensing basis to evaluate the danger posed by a seismic fault."² FOE characterizes this alleged "departure" from the licensing basis as a *de facto* license amendment subject to a hearing. However, PG&E has in fact demonstrated (and the NRC Staff has agreed) that operation of Diablo Canyon is safe and is *within* the plant's seismic licensing basis.³

During the Diablo Canyon construction permit review, the NRC's current regulation governing seismic design (10 C.F.R. Part 100, Appendix A) was still under development,

² Petition at 25.

³ This Factual Background section is based on the Declaration of William R. Horstman, PG&E Senior Civil Engineer, appended to this brief ("Hortsman Declaration").

including the Appendix A concepts of the Operating Basis Earthquake (“OBE”)⁴ and Safe Shutdown Earthquake (“SSE”).⁵ The original seismic design was based on consideration of four specific earthquake scenarios. Based on predicted ground motions at the site, PG&E developed the Design Earthquake (“DE”) response spectra. The Double Design Earthquake (“DDE”) was defined as twice the DE. However, by the time the operating license application was submitted in 1973, PG&E had identified research related to the Hosgri fault that is now placed at about 3 miles offshore from the Diablo Canyon site. As a result, the licensing basis and the seismic design of the plant evolved during the NRC’s operating license review. When the operating license was issued in 1984, the NRC approved a seismic licensing basis that was unique and plant-specific.

The Diablo Canyon seismic licensing basis is comprised of three separate seismic evaluations: the original DE and DDE evaluations, and a later Hosgri Earthquake (“HE”) evaluation. Contrary to FOE’s assertions, the HE evaluation is a deterministic licensing evaluation, not a probabilistic seismic risk evaluation; it is part of Diablo Canyon licensing basis; and it addresses the dominant seismic hazard in the region of the plant. All safety related equipment for Diablo Canyon was designed and is required to be qualified for the seismic loads calculated for the DE, DDE, and HE. PG&E has since demonstrated that ground motions from the Shoreline Fault and other nearby faults are bounded by the licensing basis HE evaluation.

⁴ The OBE is a postulated earthquake that could reasonably be expected during the operating life of a plant, for which the plant would continue to operate without undue risk to the public.

⁵ The SSE is the postulated earthquake based on the maximum earthquake potential in the region of the plant which produces the maximum vibratory ground motions at the site for which the plant must be designed to remain functional to safely shut down the plant.

The three licensing basis seismic evaluations were described in the NRC's Supplemental Safety Evaluation Report ("SSER") 7, issued May 26, 1978 (at 2-3 – 2-5).⁶ The DE and DDE were hypothetical earthquakes (based on the four specific scenarios originally considered) with conservative elements that were initially used to develop seismic design margin for plant structures, systems, and components. The NRC Staff recognized that the DE and DDE had been developed before Part 100, Appendix A, but explained the terminology it would use in comparison to Appendix A "to avoid confusion" about the earthquake design basis. The DE was a horizontal peak ground acceleration (or ground motion) of 0.2g and was equated to an Appendix A OBE. The DDE was a horizontal peak ground acceleration (or ground motion) of 0.4g (two times the DE) and was originally equated to the Appendix A SSE. However, as stated in Section 2.5 of SSER 7, even though PG&E maintained at the time that the DDE was equivalent to the SSE, the NRC considered the HE to be "the safe shutdown earthquake for this site, or at least its equivalent." FOE repeatedly overlooks this key portion of the Diablo Canyon licensing basis.⁷

The NRC Staff had addressed the Hosgri fault and recommended further evaluations for plant licensing in SSER 4, issued May 11, 1976.⁸ The HE was developed to address the actual Hosgri fault and the earthquake that could cause the maximum vibratory motion at the site. The NRC Staff, based on recommendations from technical consultants, determined that a magnitude

⁶ NUREG-0675, "Safety Evaluation Report Related to the Operation of Diablo Canyon Power Plant, Units 1 and 2" ("NUREG-0675"), Supplement No. 7, dated May 26, 1978.

⁷ SSER 7 reflected a disagreement between PG&E and the NRC Staff at the time regarding whether the DDE or the HE would be considered the equivalent to the Appendix A SSE. PG&E maintained that the DDE would be the SSE, while the plant would still be qualified for the HE. Notwithstanding the disagreement, the NRC Staff's SSER 7 clearly shows that the basis for NRC acceptance was the Hosgri event and that this would be "equivalent" to an Appendix A safe shutdown earthquake for the Diablo Canyon site.

⁸ NUREG-0675, Supplement No. 4, dated May 11, 1976.

7.5 earthquake should be assumed on the Hosgri fault. The Staff accepted an effective horizontal peak ground acceleration (or ground motion) of 0.75g at the site as the basis for ground motion response spectra (the “1977 HE”). In the structural analysis for plant structures, systems, and components for the HE, numerous parameters were considered, including damping values and actual material strengths. These differed in some respects from those used for the DE and DDE, but their acceptability was considered during the licensing process.⁹ In SSER 7, in Section 3.7, the NRC Staff acknowledged (at 3-13 – 3-14) that the Hosgri reevaluation of equipment did not incorporate the same assumptions and acceptance criteria as the original DE and DDE evaluations (emphasis added):

In the following sections we often compare the methods used in the seismic reevaluation with our current standard acceptance criteria. These comparisons can facilitate evaluating the methods used. However, it is important to keep in mind that the object of the reanalysis is to determine whether or not the plant can safely withstand the Hosgri event. *It is not necessary to meet all of the standard acceptance criteria for new plants in order to determine acceptability. Since the plant has been built it is possible to evaluate specific situations such as actual material strengths without providing the same allowances for possible variations as are included in the standard acceptance criteria.*

In a few individual cases, the applicant has demonstrated that the double design earthquake loads determined from the original analysis are more limiting than Hosgri event loads. It can happen in a few cases due to highly conservative assumptions or methods in the original analysis. In any event, if the applicant has used a load in the original design and can now demonstrate that the Hosgri event load is less, we consider this to be a sufficient load determination.

Where the original analysis is more limiting, the applicant has chosen not to take credit for the lesser Hosgri event loads, but rather to use the more limiting double design earthquake loads.

⁹ For example, damping values were updated from those used in the DE and DDE analyses, based on those recommended by the NRC at the time in Regulatory Guide 1.61 (October 1973). Because of the limited data available at the time of the DE and DDE seismic design, the original damping values were not realistic and were overly conservative. See Horstman Declaration at ¶ 14.

The NRC Staff's assessment in SSER 7 reflects that the DDE seismic loads remained part of the licensing basis and that safety related equipment remained qualified to those loads even when more conservative than the HE loads. This consideration did not change the NRC Staff's determination that the Hosgri event corresponds to the SSE for Diablo Canyon or that the HE is part of the licensing basis.

The Diablo Canyon seismic design basis was the subject of extensive hearings in the operating license review and was addressed by the NRC's Atomic Safety and Licensing Board ("ASLB" or "Licensing Board"). The ASLB resolved a number of contentions challenging the response spectra, given an acceleration of 0.75g from the Hosgri event.¹⁰ This discussion was reviewed by the Atomic Safety and Licensing Appeal Board ("Appeal Board").¹¹ The Appeal Board recited the history of the hearings before the ASLB (footnotes omitted):

Following a long trial, the Board rendered its seismic decision on September 27, 1979. LBP-79-26, 10 NRC 453. In it, the Board below concluded that the "Hosgri Fault" had been fully and properly analyzed and found it capable of producing an earthquake of 7.5 magnitude (7.5M) (*id.* at pp. 468-78). The Board deemed that value "very conservative and an appropriate basis for the Diablo "Safe Shutdown Earthquake" or "SSE" (*id.* at pp. 478-85). An SSE is the seismic event "which produces the maximum vibratory ground motion for which certain structures, systems, and components are designed to remain functional." A nuclear power plant must be able to withstand the forces of an SSE without releasing dangerous quantities of radioactivity.

The Licensing Board also predicted the maximum vibratory ground motion (in terms of acceleration, measured in units of gravity, "g") that an SSE might induce at the plant site. Intervenors' evidence was that this would be 1.15g. The Board, however, credited the staff and applicants' witnesses who testified that a 7.5M event on the Hosgri Fault would produce an "effective" acceleration no greater than 0.75g. The Board

¹⁰ *Pacific Gas and Electric Co.* (Diablo Canyon Power Plant, Units 1 and 2), LBP-79-26, 10 NRC 453 (1979).

¹¹ *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-644, 13 NRC 903 (1981).

approved that figure as the anchor point for determining the basic *response spectrum* used to evaluate the Diablo Canyon plant's ability to withstand an SSE. 10 NRC at pp. 486-89.¹²

The Appeal Board was specifically called upon to address an intervenor's contention regarding the adequacy of the DE as the OBE, given that the DE ground motions are less than one-half the 0.75g for the Hosgri event. The Appeal Board upheld the adequacy of the DE as an OBE, and did not disturb the ASLB's conclusion that the SSE equivalent for Diablo Canyon would be the HE. There can be no doubt from the extensive licensing record that the HE is part of the Diablo Canyon licensing basis, along with the DE and DDE.

The Diablo Canyon seismic licensing basis has one more unique feature. The Unit 1 operating license was issued on September 22, 1981. Subsequently, on April 14, 1984, based on a recommendation of the Advisory Committee on Reactor Safeguards ("ACRS"), the NRC issued an amendment to the Unit 1 license imposing License Condition 2.C(7). The condition required PG&E to develop and implement a program to reevaluate and confirm the seismic design basis. To meet that condition, PG&E developed and implemented the Long Term Seismic Program ("LTSP"). An LTSP Final Report was submitted to the NRC in July 1988, including detailed evaluations of existing and new geologic and seismologic data of significance to the site. The LTSP used seismic margins, fragilities, and probabilistic risk assessment methodologies. The LTSP was not a deterministic licensing basis analysis, but was a technically advanced basis to confirm the adequacy of the Diablo Canyon licensing basis. The LTSP methodology showed that a maximum earthquake of magnitude 7.2 on the Hosgri fault would provide a very conservative basis for analyzing the adequacy of the plant and equipment. Equipment qualified for the DE, DDE, and HE loads remained qualified.

¹² *Id.* at 910 - 11.

The NRC's extensive review of the LTSP (including by the ACRS) is described in SSER 34, issued in June 1991.¹³ The NRC Staff closed the license condition, concluding that PG&E had confirmed the adequacy of the design and licensing bases. Consistent with SSER 34 (at 1-5 – 1-7), “the seismic qualification basis for Diablo Canyon remains the original design basis plus the Hosgri evaluation basis, along with the associated methods, initial conditions, etc.” Notwithstanding that the license condition was satisfied, PG&E's geosciences team has continued to work with the U.S. Geological Survey (“USGS”) and independent seismic experts on an ongoing basis to evaluate new seismic information and assess seismic safety under the LTSP. Based on its ongoing commitment to the LTSP, and through its ongoing collaboration with independent seismic experts, PG&E identified the Shoreline Fault and reported preliminary information to the NRC in November 2008.

B. PG&E Has Demonstrated that Diablo Canyon Is Operating Safely

The safety of Diablo Canyon following discovery of the Shoreline Fault has been confirmed by multiple PG&E evaluations and NRC Staff reviews. In November 2008, PG&E promptly completed an initial deterministic evaluation of the Shoreline Fault and concluded that predicted ground motions did not exceed the ground motions anticipated for the Hosgri fault.¹⁴

¹³ NUREG-0675, Supplement No. 34, dated June 30, 1991 (ADAMS Accession No. 9107100057). The LTSP and the NRC review extended over seven years, from April 1984 to September 1991. During this time over sixty noticed public meetings were held, including the NRC, NRC consultants, the ACRS, the U.S. Geological Survey, University of Nevada professors and graduate students, a Ground Motion Panel consisting of four distinguished professors, a Soil Structure Interaction Panel consisting of four distinguished professors, a Fragility Panel consisting of distinguished engineers from the Brookhaven and Sandia National Laboratories and engineers from EQE, Inc., and a PRA Advisory Panel consisting of distinguished engineers from Brookhaven Laboratory. In addition, several independent studies were conducted for the NRC.

¹⁴ This initial comparison was based on the Hosgri ground motions determined in the 1991 LTSP and reviewed by the NRC Staff and other experts, as documented in SSER 34.

PG&E later documented a formal assessment in accordance with PG&E procedures and NRC inspection guidance for addressing the operability of safety related equipment.¹⁵ That assessment addressed the seismic safety of Diablo Canyon systems, structures, and components in light of new seismic information (including the Shoreline Fault and new information regarding the Los Osos and San Luis Bay faults).¹⁶ While predicted ground motions may exceed the DDE ground motions at certain frequencies, they do not at any frequency exceed the licensing basis 1977 HE ground motions. Because safety related equipment is qualified for the 1977 HE ground motions and seismic loads (as well as for the DE and DDE loads if more conservative), it necessarily follows that the equipment is qualified for the maximum loads expected from the Shoreline Fault. Therefore, since the Shoreline Fault was first identified, there has always been a sound basis for the safety of plant operation.

In early 2009, the NRC Staff completed its first independent assessment of PG&E's new seismic information, as documented in a letter to PG&E on April 8, 2009, attaching Research Information Letter ("RIL") 09-001.¹⁷ The NRC Staff's preliminary assessment was a best-estimate

¹⁵ NRC Inspection Manual Part 9900: Technical Guidance – "Operability Determinations and Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety," April 2008 ("Part 9900 Operability Guidance").

¹⁶ The Part 9900 Operability Guidance process applies to equipment identified as degraded or nonconforming relative to the current licensing basis. PG&E maintained that the operability process for degraded or nonconforming equipment is not necessarily the proper regulatory process for evaluating new seismic information; that no regulatory process was defined at the time for reevaluating the adequacy of the seismic licensing basis; and that the LTSP was the best process for evaluating the safety significance of new seismic information. The NRC has since clarified that the process for addressing new seismic information post-Fukushima will be the Section 50.54(f) process discussed below.

¹⁷ Memorandum, B.W. Sheron to E.J. Leeds, "Research Information Letter 09-001: Preliminary Deterministic Analysis of Seismic Hazard at Diablo Canyon NPP from newly Identified 'Shoreline Fault'," dated April 8, 2009 (ADAMS Accession No. ML090330278).

deterministic hazard analysis. The Staff's analysis confirmed that the seismic loading levels predicted for a maximum magnitude earthquake on the Shoreline Fault are below those for which Diablo Canyon was previously analyzed for all frequencies of interest.

PG&E submitted a comprehensive report on the Shoreline Fault to the NRC on January 7, 2011.¹⁸ The Shoreline Fault Report confirmed the seismic safety of continued operation of Diablo Canyon. In particular, Figure ES-1 from the Shoreline Fault Report demonstrated that, utilizing a deterministic methodology, the updated ground motion response spectra for the four regional faults (Shoreline, Los Osos, San Luis Bay, and Hosgri faults) are bounded by the licensing basis 1977 HE response spectrum (as well as the LTSP response spectrum).¹⁹ Plant safety equipment is qualified for earthquakes as large as the magnitude 7.5 Hosgri design earthquake. The new seismic data for the Shoreline Fault is enveloped by the 1977 HE ground motions. Therefore, it necessarily follows that the plant can be safely shut down in the event of an earthquake on the Shoreline Fault.

In a September 2012 report, the NRC Staff documented its review of PG&E's Shoreline Fault Report and confirmed its earlier, preliminary assessment in RIL 09-001.²⁰ In RIL 12-01 the

¹⁸ PG&E Letter No. DCL-11-005, "Report on the Analysis of the Shoreline Fault Zone, Central Coastal California," dated January 7, 2011 ("Shoreline Fault Report") (ADAMS Accession No. ML110140431).

¹⁹ See Hortsman Declaration, ¶¶ 24 – 25 (Figure ES-1 from the Shoreline Fault Report). As is typical in deterministic seismic evaluations of this type, PG&E utilized deterministic 84th percentile ground motions. This corresponds to the median plus one standard deviation as was applied in the development of the 1977 HE ground motion. The Shoreline Fault Report included an updated ground motion response spectrum for the Hosgri fault, which shows much lower postulated ground motions than the earlier estimates for the Hosgri – and therefore demonstrates margin in the seismic design.

²⁰ Research Information Letter 12-01 "Confirmatory Analysis of Seismic Hazard at the Diablo Canyon Power Plant from the Shoreline Fault Zone" (September 2012) (ADAMS Accession No. ML121230035) ("RIL 12-01").

NRC Staff presented a “conservative deterministic (scenario-based) viewpoint . . . intended to allow the NRC Staff to determine if a safety concern exists as a result of the Shoreline fault.”²¹

The Staff noted that, while current NRC guidance uses a probabilistic seismic hazard assessment approach to assess overall risk, the deterministic approach focuses on safety margin for a specific earthquake scenario, such as the Shoreline Fault.²² As summarized in an October 12, 2012 letter to PG&E:

It should be reiterated that the NRC staff has concluded that deterministic seismic-loading levels predicted for the Shoreline fault earthquake scenarios developed and analyzed by NRC are at, or below, those levels for the HE ground motion and the LTSP ground motion. The HE ground motion and the LTSP ground motion are those for which the plant was evaluated previously and demonstrated to have reasonable assurance of safety. Therefore the existing design basis for the plant already is sufficient to withstand those ground motions.²³

On September 10, 2014, PG&E issued a comprehensive Central Coastal California Seismic Imaging Project Report²⁴ based on advanced seismic studies completed following the recommendation by the California Energy Commission in response to state legislation (California Assembly Bill 1632). These studies have given PG&E, as well as scientists and regulators, unprecedented insight into the seismic characteristics of the region near Diablo Canyon. Applying deterministic methodology to the updated seismic information — and consistent with its prior conclusions and the NRC Staff’s conclusion in RIL 12-01 — PG&E again found that the ground

²¹ RIL 12-01 at xii.

²² *Id.*

²³ NRC Letter to E.D. Halpin, “Diablo Canyon Power Plant, Unit Nos. 1 and 2 – NRC Review of Shoreline Fault (TAC Nos. ME5306 and ME5307),” dated October 12, 2012 (ADAMS Accession No. ML120730106) (“October 2012 NRC Letter”), at 4.

²⁴ PG&E Letter DCL-14-081, “Central Coastal California Seismic Imaging Project, Shoreline Fault Commitment,” dated September 10, 2014 (ADAMS Accession No. ML14260A106) (“Seismic Imaging Report”).

motions from the updated Shoreline Fault and other regional faults remain bounded by the 1977 Hosgri design ground motions, for which the plant was previously evaluated and demonstrated to have reasonable assurance of safety.²⁵ Therefore, all evaluations of the Shoreline Fault to date — whether by PG&E or the NRC — have confirmed the safety of continuing operation at Diablo Canyon.

C. New Seismic Information Is Being Evaluated In the NRC's Section 50.54(f) Process

Seismic licensing bases, such as the DE, DDE, and HE, for Diablo Canyon are self-contained, “one moment in time” analyses completed at the time of licensing. The licensing basis evaluations each have their own deterministic methodology and associated set of assumptions and inputs. The evaluations are used to establish the seismic design or qualification of safety related plant equipment. The evaluations and licensing basis do not evolve over time based on new seismic information.²⁶ Instead, the implications of new seismic information must be addressed as a regulatory oversight matter. As discussed above, PG&E identified the Shoreline Fault issue based on its unique, ongoing commitment to analyzing geotechnical information through the process established for the LTSP. But no specific regulatory process was designated for addressing that information until 2012.

Indeed, the NRC Staff realized over a decade ago that there is no specific requirement for licensees to periodically evaluate new seismic information or update a plant's licensing basis. Generic Issue (“GI”) 199 was initiated to address new seismic information for plants in the Central

²⁵ PG&E has submitted the Seismic Imaging Report to the NRC and the California Public Utilities Commission Independent Peer Review Panel (“IPRP”). PG&E expects to receive feedback from the NRC and IPRP on the study results. The study results will support the NRC-mandated seismic hazard risk assessment for Diablo Canyon that is required of all nuclear power plants in the United States, as discussed below.

²⁶ This is not unique to seismic issues. The licensing basis for other external event hazards, such as flooding, also do not evolve over time.

and Eastern U.S., based on new seismic information or analyses suggesting hazards greater than the original licensing bases.²⁷ Following the Fukushima accident, the NRC's Japan Lessons-Learned Near-Term Task Force also recognized that NRC regulations do not require periodic seismic re-evaluations after initial licensing. The Near-Term Task Force therefore recommended that the NRC require all operating plant licensees to reevaluate the design basis seismic bases (and flooding protection) for structures, systems, and components.²⁸

Within approximately one year of the Fukushima event, the NRC directed specific actions to address the Near-Term Task Force Recommendations, including requesting that licensees reevaluate seismic hazards using present day methods and guidance to identify vulnerabilities. The NRC sent a letter on March 12, 2012, to all power reactor licensees pursuant to 10 C.F.R. § 50.54(f) requesting the reevaluation of seismic hazards.²⁹ The Section 50.54(f) Letter effectively subsumed the GI-199 process for plants in the Central and Eastern U.S. and applied a similar process to plants in the Western U.S. Because Diablo canyon is a Western plant, PG&E must submit its updated seismic hazards analysis within three years of the Section 50.54(f) request (*i.e.*,

²⁷ "GI-199: Implications of Updated Probabilistic Seismic Hazards Estimates on Central and Eastern United States," dated June 9, 2005 (ADAMS Accession No. ML051600272).

²⁸ "Recommendations for Enhancing Reactor Safety in the 21st Century: The Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident," July 12, 2011 (*see* Recommendation 2) (ADAMS Accession No. ML112510271).

²⁹ NRC Letter to All Power Reactor Licensees and Holders of Construction Permits in Active or Deferred Status, "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights for the Fukushima Dai-Ichi Accident," dated March 12, 2012 (ADAMS Accession No. ML12053A340) ("Section 50.54(f) Letter").

by March 2015). On April 29, 2013, PG&E submitted to the NRC a plan and schedule for the Diablo Canyon seismic reevaluation.³⁰

PG&E had previously submitted the January 2011 Shoreline Fault Report. Therefore, the NRC Staff sent the October 2012 NRC Letter to PG&E, informing PG&E of RIL 12-01 and the results of NRC Staff's review of PG&E's report. But equally important for present purposes, the NRC Staff explained that its ongoing review of Diablo Canyon seismic issues would be considered in the NRC's Section 50.54(f) process. As stated in the October 2012 NRC Letter: "[t]he first phase is to perform a reevaluation of the seismic hazards at the [Diablo Canyon] site using updated seismic information and present-day regulatory guidance and methodologies and then compare the results to the current seismic design basis. The second phase is based on the results of the first phase and consists of NRC staff determining whether additional regulatory actions are necessary (e.g., update the design basis and structures, systems, and components important to safety) to provide additional protection against updated hazards."³¹ PG&E will be incorporating the data from its ongoing advanced seismic studies into this process.

To address the Section 50.54(f) request for information, PG&E is — as expected by the NRC — utilizing a probabilistic seismic hazards analysis ("PSHA") similar to the LTSP methodology.³² As outlined by the NRC for plants in the Western U.S., the PSHA will consider all relevant data, models, and methods in the evaluation of seismic sources and ground motion

³⁰ PG&E Letter DCL-13-044, "Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Seismic Aspects of Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident," dated April 29, 2013 (ADAMS Accession No. ML13120A275).

³¹ October 2012 NRC Letter at 3-4.

³² PG&E first developed the Diablo Canyon PSHA for the LTSP. It has been maintained and updated since that time. PG&E is currently updating the PSHA to respond to the Section 50.54(f) Letter. *See* Horstman Declaration at ¶ 37.

models. Consistent with Reg. Guide 1.208,³³ PG&E is employing an enhanced peer review process using a Senior Seismic Hazard Analysis Committee (“SSHAC”). The NRC Staff has also clarified its expectations for comparing new information to the existing licensing basis earthquakes: “Because DCPD is unique in having three earthquake scenarios (DE, DDE, and HE) in its design and licensing basis rather than the normal two (OBE and SSE),” PG&E’s response to the Section 50.54(f) Letter is expected to include comparisons of the updated ground motion response spectra to the current licensing basis.³⁴ Notwithstanding the licensing history discussed above, the NRC Staff in the letter refers to the DDE as the SSE. The NRC Staff noted, however, that it expects that using the DDE as the basis for comparison “will most likely result in the Shoreline fault and Hosgri earthquake being reported as having greater ground motions than the SSE.”³⁵ In a February 20, 2014, letter to all licensees, the NRC Staff also clarified that it considers the seismic hazard reevaluation being performed pursuant to the Section 50.54(f) Letter to be distinct from the current design and licensing basis of operating plants. Consequently, the results of the analysis performed would not generally be expected to call into question the operability or functionality of plant equipment.³⁶ But the requested information will allow PG&E and the NRC

³³ Reg. Guide 1.208, “A Performance-Based Approach to Define the Site-Specific Ground Motion.”

³⁴ October 2012 NRC Letter at 4.

³⁵ *Id.*

³⁶ See NRC Letter to All Power Reactor Licensees and Holders of Construction Permits in Active or Deferred Status, “Supplemental Information Related to Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Seismic Hazard Reevaluations for Recommendation 2.1 of Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident,” dated February 20, 2014 (ADAMS Accession No. ML14030A046), at 2 (except in cases such as an error in the current design or licensing basis, the NRC Staff “considers the seismic hazard reevaluations being performed pursuant to the 50.54(f) letter to be distinct from the current design or licensing basis of operating plants. Consequently, the results of the analysis performed using present-day regulatory

Staff to make determinations regarding seismic margins and any need to update the plant or the licensing basis.

FOE assigns substantial significance to PG&E's proposed License Amendment Request 11-05, originally submitted to the NRC on October 20, 2011.³⁷ LAR 11-05 was a reflection of the uncertainty that existed at the time regarding the licensing basis and the regulatory process for addressing new seismic information (the Shoreline Fault information) and assessing the need for licensing basis changes. PG&E specifically recognized that neither the Diablo Canyon license nor NRC regulations require a re-evaluation of seismic information, or specify a methodology to do so. PG&E voluntarily proposed to use the LTSP model as the approach to identify any need for plant upgrades or licensing basis changes given updated seismic information. LAR 11-05 was mooted by the NRC Staff's Section 50.54(f) Letter to all licensees in March 2012 and the specific guidance to PG&E in the October 2012 NRC Letter. PG&E therefore withdrew LAR 11-05.³⁸

DISCUSSION OF CONTENTIONS

A. Contention 1: There Is No *De Facto* License Amendment

Section 189.a of the Atomic Energy Act requires the NRC to provide an opportunity for a hearing only for certain specified actions, including license amendments.³⁹ There is currently no

guidance, methodologies, and information would not generally be expected to call into question the operability or functionality of [systems, structures, and components].”)

³⁷ PG&E Letter DCL-11-097, “License Amendment Request 11-05, ‘Evaluation Process for New Seismic Information and Clarifying the Diablo Canyon Safe Shutdown Earthquake,’” dated October 20, 2011 (ADAMS Accession No. ML11312A166).

³⁸ PG&E Letter DCL-12-108, “Withdrawal of License Amendment Request 11-05, ‘Evaluation Process for New Seismic Information and Clarifying the Diablo Canyon Power Plant Safe Shutdown Earthquake,’” dated October 25, 2012 (ADAMS Accession No. ML12300A105).

³⁹ 42 U.S.C. § 2239.a.

license amendment pending on the issues raised in the Petition that would trigger an opportunity to request a hearing.⁴⁰ PG&E has withdrawn the license amendment voluntarily proposed in LAR 11-05, and no other relevant opportunity for hearing has been published. Contention 1 is FOE's argument that, in the absence of an actual amendment application, there is a *de facto* amendment. However, for the reasons discussed below, this threshold argument should be dismissed as a matter of law. There is no *de facto* license amendment involved in the continued operation of Diablo Canyon. Instead, FOE is raising issues that may only be pursued through other regulatory processes.

The concept of a *de facto* amendment is often attributed to the Commission's decision in *Cleveland Electric Illumination Company* (Perry Nuclear Power Plant, Unit 1), CLI-96-13, 44 NRC 315, 326 (1996) (citations omitted):

In evaluating whether challenged NRC authorizations effected license amendments within the meaning of Section 189a, courts repeatedly have considered the same key factors: did the challenged approval grant the licensee any "greater operating authority," or otherwise "alter the original terms of a license"? If so, hearing rights likely were implicated.

Here, the NRC Staff has not granted PG&E any increase in operating authority. There has been no change either to the operating license conditions or to the operating limits or other restrictions in the Technical Specifications. There has been no change to the licensing basis (or licensing basis earthquakes), and all plant equipment is presumed to conform to the licensing basis seismic qualification. Contention 1 — and the Petition as a whole — should be rejected as a matter of law.

The premise for Contention 1 is FOE's recurring suggestion that the HE is not part of the Diablo Canyon licensing basis. But, as discussed in detail above, the HE is undeniably part of the

⁴⁰ See *State of New Jersey* (Department of Law and Public Safety's Requests dated October 8, 1993), CLI-93-25, 38 NRC 289, 292 (1993) (explaining that intervention is not available where there is no pending "proceeding" of the sort specified in the Atomic Energy Act, Section 189.a).

licensing basis and represents the bounding design ground motions. Safety related equipment has been demonstrated to be qualified for those ground motions. The NRC Staff's full review of information relating to the Shoreline Fault "confirmed [the NRC's] preliminary conclusion that the [Diablo Canyon] ground motions from the Shoreline fault are at or below those for which the plant was evaluated previously and demonstrated to have reasonable assurance of safety."⁴¹ As a result, there is no basis for FOE to claim that the plant is "operating outside of the licensing basis." In completing its assessment and issuing RIL 12-01 in October 2012, the NRC Staff also did not amend the license. As noted in *Perry*, by merely ensuring that required standards have been met, the NRC Staff "does not alter the terms of the license, and does not grant the Licensee greater operating authority."⁴² Instead, the Commission explained, such a review actually *enforces* license requirements.⁴³ In fact, as discussed above, safety related equipment at Diablo Canyon is still required to be fully qualified to the DE, DDE, and HE seismic loads.⁴⁴

In the absence of a pending license amendment request or an increase in operating authority, FOE contends that "[t]he NRC Staff's attempt to insert an analytic procedure for new seismic data, where none exists in Diablo Canyon's current license, constitutes a *de facto* license amendment."⁴⁵ But, the NRC Staff is not now inserting a new analytic procedure into the Diablo

⁴¹ October 12, 2012 NRC Letter at 1, summarizing RIL 12-01.

⁴² *Perry*, CLI-96-13, 44 NRC at 328-29.

⁴³ *Id.*

⁴⁴ Any challenge to the current licensing basis or operational safety, or to NRC's oversight, must be brought under Section 2.206. See *Fla. Power & Light Co.* (Turkey Point Nuclear Generating Station, Units 3 & 4), CLI-01-17, 54 NRC 3, 23, 24 n.18 (2001); *Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 and 3), LBP-08-13, 68 NRC 43, 73 (2008) (explaining that the proper vehicle to challenge the adequacy of a final safety analysis report would be a Section 2.206 petition).

⁴⁵ Petition at 32.

Canyon license.⁴⁶ FOE's Petition seems to recognize, on its face, that its assertion is premature. FOE argues that "the NRC Staff *proposes* to de facto amend" the license and claims that "[i]f the Staff were to designate a new seismic evaluation method, Commission regulations require that Diablo Canyon's technical specifications be changed accordingly."⁴⁷ Hearing opportunities cannot be founded on speculation regarding future NRC Staff actions or inchoate plans of a licensee. And, to the extent FOE is arguing that the HE is being inserted into the licensing basis, FOE is tardy — the HE has been in the Diablo Canyon licensing basis since at least SSER 7 in May 1978.

PG&E's ongoing reevaluation of new seismic information as part of the post-Fukushima 10 C.F.R. § 50.54(f) process also does not constitute or involve a *de facto* license amendment. The Section 50.54(f) process is not a licensing process and is not subject to the hearing requirement of the Atomic Energy Act.⁴⁸ The NRC's Section 50.54(f) Letter on Near-Term Task Force Recommendation 2 directed all plants to develop and evaluate new seismic information, and directed a specific state-of-the art methodology that intentionally is not the licensing basis methodology. The Section 50.54(f) Letter is part of the NRC's regulatory oversight process. It

⁴⁶ FOE is incorrect in its implication that, because PG&E voluntarily proposed a license amendment in 2011, a license amendment is now necessary for Diablo Canyon to operate. On its face, the purpose of LAR 11-05 was to "define an evaluation process for newly identified seismic information" and "clarify, consistent with the NRC Supplemental Safety Evaluation Report 7, that the 1977 Hosgri earthquake is the equivalent of DCP's safe shutdown earthquake, as defined in 10 CFR 100, Appendix A." The purpose of the LAR — to voluntarily establish a *licensee-specific process* to be followed for addressing new seismic information — was mooted by the NRC's establishment of a *generic process* for evaluating new seismic information under Section 50.54(f) and the adequacy of the existing licensing basis.

⁴⁷ *Id.* at 32, 39 (emphasis added).

⁴⁸ As discussed above, Diablo Canyon is subject to the same process as all U.S. nuclear plants. In light of the NRC-endorsed process being applied to all plants, PG&E withdrew LAR 11-05 because it was no longer necessary to define a plant-specific process for assessing new seismic information.

does not insert a new analytic procedure into the license, and it does not direct or cause any immediate changes to the plant or the licensing basis. Indeed, the purpose of Section 50.54(f) as stated in the regulation itself is “to enable the Commission to determine whether or not the license should be modified, suspended, or revoked.”⁴⁹ Based on review of the information from licensees, and the Staff’s determinations regarding acceptable risks, the NRC will consider whether any changes to the plant or its licensing basis are necessary. Any plant or licensing basis changes deemed necessary at that time will be subject to the FSAR update process in 10 C.F.R. § 50.71(e), as well as the 10 C.F.R. § 50.59 process and, as appropriate, the 10 C.F.R. § 50.90 license amendment process. At present, as in *Kelley v. Selin*, 42 F.3d at 1515, “[t]here is no licensing decision being made here.” Therefore, there is nothing that constitutes an amendment, *de facto* or otherwise.⁵⁰

To the extent the Petition seeks a hearing on plant or procedure modifications (or licensing basis changes) that may be necessary in the future *following* completion of the Section 50.54(f)

⁴⁹ See also Section 50.54(f) Letter at 1.

⁵⁰ FOE cites (Petition at 29, n. 82) a Licensing Board decision in *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), LBP-13-07, 77 NRC 307 (2013), *vacated* CLI-13-09, 78 NRC ___ (slip op. Dec. 5, 2013) (“*SONGS*”). Even if that decision had precedential value (it does not, because it was vacated), the present case is clearly distinguishable. First, there is no pending NRC action — whether a licensing action or an enforcement action such as the Confirmatory Action Letter (“CAL”) in *SONGS* — that could be construed as a *de facto* license amendment. In *SONGS*, the NRC Staff issued a CAL to the licensee as an enforcement mechanism to confirm the licensee’s commitments to support safe restart by limiting operations with degraded steam generators as specified in the CAL. The petitioner, and ultimately the Licensing Board, viewed the CAL as a *de facto* license amendment. In the present case there is no NRC enforcement action involved and no modification of operating authority. There is simply no order, CAL, or written confirmation of a licensee commitment at issue that could be construed as a license amendment. Additionally, *SONGS* involved errors in the design of the replacement steam generators that resulted in degraded equipment performance relative to the licensing basis. In contrast, the present case involves new seismic information where the ground motions *are enveloped by* the bounding licensing basis ground motions (HE).

process, FOE's Petition is premature. The NRC may issue an order requiring changes. Or, in evaluating any necessary plant or procedure changes, PG&E will determine whether a license amendment is necessary by applying the 10 C.F.R. § 50.59 process at the appropriate time. If a license amendment is required, then there will be an opportunity for FOE and others to request a hearing as appropriate (including on the issue of whether any changes adequately address new seismic information). If no amendment is required, then PG&E may implement the change without prior NRC approval and without a hearing opportunity.⁵¹ FOE is not entitled to a hearing in anticipation of a potential and undefined license amendment request that may or may not be required in the future.

As discussed at length in the Factual Background above, pending completion of the Section 50.54(f) process, PG&E and the NRC Staff have demonstrated the safety basis for operation of Diablo Canyon — based on extensive analyses of new seismic information and comparison to the existing licensing basis. Any disagreement that FOE may have with that safety basis for operation, or even an expectation that the revised seismic evaluations will result in the Shoreline Fault having greater ground motions than the historic DDE, would not constitute a *de facto* license amendment. Instead, these would be challenges to the adequacy of NRC oversight and inspection activities related to the Shoreline Fault, and must be brought under 10 C.F.R. § 2.206.⁵² FOE's Petition, and the NRC hearing process, simply are not the appropriate vehicles for disputing the sufficiency of

⁵¹ If FOE disagreed with the licensee's Section 50.59 evaluation, it could at that time challenge the evaluation by seeking NRC Staff enforcement action under the 10 C.F.R. § 2.206 process.

⁵² In *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), CLI-13-09, 78 NRC __ (December 5, 2013) (slip op. at 3-4, n.10), the Commission reiterated that Section 2.206 is the appropriate method to challenge licensee changes made under Section 50.59 and reaffirmed that the Section 2.206 process remains a viable method for obtaining relief.

NRC inspection and enforcement activities. Likewise, the hearing process is not the appropriate forum for disputing the NRC's policy with respect to a response to the Fukushima accident and to the Near-Term Task Force recommendations on seismic issues.

Even if PG&E or the NRC Staff had identified a non-conformance with the licensing basis (which they did not), there still would not be a *de facto* license amendment. There is no right to a hearing on NRC enforcement actions or on exercises of discretion to allow continued operation notwithstanding a non-conformance. Quite simply, the Atomic Energy Act, Section 189.a, does not require a hearing opportunity for every alleged non-compliance, performance deficiency, or non-conforming or degraded equipment condition. Assuming a non-compliance exists, licensees are obligated to take corrective actions in accordance with guiding principles such as 10 C.F.R. Part 50, Appendix B, Criterion XVI, as well as plant Technical Specifications and the NRC's Part 9900 Operability Guidance. A license amendment may be required if corrective actions involve a plant or licensing basis change, and the change does not meet the criteria of 10 C.F.R. § 50.59.⁵³ But requests for enforcement action still must be pursued under 10 C.F.R. § 2.206.⁵⁴

In sum, because FOE failed to identify either a pending license amendment or a *de facto* amendment, there is no present right to a hearing on seismic issues for Diablo Canyon. Seismic issues already are being pursued through the generic regulatory process adopted by the Commission after the Fukushima event. Contention 1, and the Petition, should be summarily

⁵³ Corrective actions that involve licensing basis changes are evaluated under 10 C.F.R. § 50.59 to determine whether a license amendment (and therefore a hearing opportunity) is necessary. Corrective actions that restore compliance with the licensing basis do not increase the licensee's operating authority, require an amendment, or trigger a hearing opportunity.

⁵⁴ Applications of agency enforcement discretion, including decisions to take no action, are ordinarily not reviewable by courts. *See Heckler v. Cheney*, 470 U.S. 821, 832 (1985) (“[A]n agency's decision not to take enforcement action should be presumed immune from judicial review” under the Administrative Procedure Act.).

denied. The NRC's existing processes — including public meetings, opportunities to pursue specific additional actions through the Section 2.206 process, and NRC review and approval of license and licensing basis changes if those are later identified — provide ample opportunities for stakeholder input and participation.

B. Contention 2: FOE Has Not Demonstrated An Issue For Hearing

1. The Hearing Process is Not the Proper Forum for Contention 2.

Contention 2 is FOE's attempt to specify a contention for hearing. FOE asserts that "NRC Staff's determination that the new seismic information, including the Shoreline Fault and its effects on the San Luis Bay and Los Osos faults, is a lesser-included case within the Hosgri Earthquake is insufficient to insure that Diablo Canyon is operating safely with an adequate margin of safety."⁵⁵ This contention seeks to litigate the adequacy of the seismic licensing basis for Diablo Canyon and the sufficiency of the NRC Staff's oversight of the plant. However, absent a prerequisite showing under Contention 1 that there is a licensing action on which to request a hearing, there can be no admissible contention. A challenge to the licensing basis or to continued operation should be brought as a petition for enforcement action or plant shut down under 10 C.F.R. § 2.206. Likewise, challenges to the merits of the October 2012 NRC Letter would need to be brought through the 10 C.F.R. § 2.206 process.⁵⁶ Litigation of Contention 2 would also be at

⁵⁵ Petition at 46. In contrast to the statement of the contention, the October 2012 NRC Letter did not in fact address the San Luis Bay and Los Osos faults as a "lesser included case" under the HE. All new seismic information, including information related to these faults, will be addressed in the Section 50.54(f) process.

⁵⁶ The October 2012 NRC Letter also stated that in light of the deterministic evaluations that had been completed, the Shoreline Fault scenario should be considered a "lesser included case" under the HE, and that PG&E should update the Diablo Canyon Updated Final Safety Analysis Report ("UFSAR") as necessary in accordance with the requirements of 10 C.F.R. § 50.71(e). A challenge to PG&E's update to the UFSAR to incorporate the Shoreline Fault as "a lesser included case" under the HE — completed in accordance with 10 C.F.R. § 50.71(e) — would also need to be brought under 10 C.F.R. § 2.206.

odds with the industry-wide regulatory process that the agency has adopted for post-Fukushima seismic reevaluations.

2. *PG&E Has Established That Diablo Canyon Can Be Shut Down Safely Following An Earthquake On The Shoreline, San Luis Bay, And Los Osos Faults.*

Contention 2 is also factually unfounded. As discussed above, PG&E has demonstrated, and the NRC Staff has independently confirmed, that Shoreline Fault scenarios are bounded by the HE ground motions. In contrast, FOE's contention and "supporting evidence" is a confused mishmash of concepts drawn from the Diablo Canyon licensing history and Dr. Peck's DPO. The recitation is replete with errors and unsupported assertions that do not establish a genuine dispute regarding the safety of Diablo Canyon.

For example, paragraph 3 is simply incorrect.⁵⁷ In fact, as discussed above, the NRC in SSER 7 accepted the HE as equivalent to an SSE, and accepted the HE evaluation methodology as part of the licensing basis. Diablo Canyon was not explicitly a Part 100, Appendix A plant, and the HE evaluation was not an "exception to SSE analysis" as FOE suggests. The HE was not "designated as the LTSP" and the HE did not employ the same methodology as the later LTSP. In the HE evaluation PG&E utilized assumptions and methodologies that were more up-to-date than those used for the earlier DE and DDE evaluations, but the assumptions and methodologies used for the HE still were reviewed and accepted by the NRC as part of the lengthy Diablo Canyon operating license review and extensive licensing hearing process.

FOE asserts in paragraph 4 that a comparison against the HE "captures only some of the safety risks to Diablo Canyon's structures, systems, and components, and leaves others

⁵⁷ See Petition at 47 (asserting that the NRC and PG&E "negotiated an exception to SSE analysis, designated the Long Term Seismic Plan," after discovery of the Hosgri fault, and claiming that neither NRC or PG&E designated the HE as the SSE).

unanalyzed.”⁵⁸ This appears to be based on a misbelief that the HE was a risk evaluation like the LTSP. But this is simply not true. The HE is part of the deterministic licensing basis of the plant, addressing specific maximum ground motions predicted from the Hosgri fault that were (and remain) bounding for the site. To the extent the HE structural evaluation used different assumptions or inputs than for the earlier DDE evaluation, those were generally based on more up-to-date information, were reviewed, and were approved as sufficiently conservative with adequate safety margin.

FOE asserts in paragraph 6 that “comparing updated ground motion levels from the [Shoreline, Los Osos, and San Luis Bay] faults to the ground motions of the Hosgri Earthquake is not a sufficient basis for concluding that the plant may continue to operate with an adequate margin of safety.”⁵⁹ However, there is no explanation or basis for this assertion and it is completely contrary to the regulatory record on the Shoreline Fault since 2008, discussed above.

At bottom, in Paragraph 11, FOE asserts that “[w]ithout a license amendment, a comparison of the new seismic data to the Hosgri Fault cannot be used to comply with the regulatory duty to insure that all safety-related [structures, systems, and components] can withstand for maximum vibratory ground motion that can occur at the plant.”⁶⁰ But FOE’s argument that a license amendment is necessary is incorrect, based on its intermingling of the HE and the LTSP, and on its impression that there are “relaxed” assumptions and acceptance criteria in the HE and the LTSP. Both the HE and LTSP have been reviewed and accepted by the NRC. Both methodologies have demonstrated the seismic safety of Diablo Canyon. PG&E’s subsequent

⁵⁸ *Id.* at 48.

⁵⁹ FOE asserts (*id.*) that the “HE was approved as a deviation from the accepted SSE evaluative process as a one-time exception.” There is no citation for this claim.

⁶⁰ Petition at 50.

comparisons of Shoreline Fault ground motions to the HE ground motions have confirmed the safety of continued operation within the licensing basis.

3. *Neither the HE nor the LTSP Are a “Weaker Seismic Evaluation Method” Than the NRC’s “Recommended Method.”*

FOE’s next argument in support of Contention 2 is based on LAR 11-05, which FOE argues supports a conclusion that the licensing basis methods used to establish the safety of Diablo Canyon are “weaker” than the current SRP.⁶¹ But this argument does nothing to demonstrate an admissible issue for hearing. Diablo Canyon was licensed based on the HE evaluation, which the NRC Staff approved based in part on the 1975 SRP. That licensing basis was accepted by the NRC Staff, litigated in the operating license hearing process, and ultimately confirmed through the LTSP and the NRC Staff and ACRS reviews of that program. The current NRC “recommended method,” whatever that might be, is not relevant for current purposes. If FOE is arguing for more up-to-date criteria to be applied, they are arguing for a backfit subject to 10 C.F.R. § 50.109.⁶² And that argument, under NRC regulations and precedent, must be pursued through a 10 C.F.R. § 2.206 petition.⁶³ FOE has not invoked that process. And the issue of the need for upgrades to the licensing basis using the most up-to-date methods and information is being addressed in the Section 50.54(f) seismic reevaluation discussed above.

⁶¹ *Id.* at 53.

⁶² It should also be noted that in seismic evaluations, “more up-to-date” does not always equate to “more rigorous.” More recent methodologies and inputs may be based on more (or better) information, which allows elimination of unnecessary conservatism adopted in prior criteria. This was true even with respect to the HE versus the earlier DE and DDE evaluations.

⁶³ *See, e.g., Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), CLI-10-27, 72 NRC 481, 492 (2010); *Pacific Gas and Elec. Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-11-11, 74 NRC 427, 437 (2011); *U.S. Army Installation Command* (Schofield Barracks, Oahu, Hawaii, and Pohakuloa Training Area, Island of Hawaii, Hawaii), LBP-10-04, 71 NRC 216, 230-31 n.16 (2010).

FOE seizes upon a comparison of the Diablo Canyon licensing basis to the 2007 SRP prepared by PG&E in conjunction with LAR 11-05, and PG&E's proposal at the time to clarify and update the licensing basis to clearly show the HE as an Appendix A SSE.⁶⁴ However, the LAR was overtaken by events as discussed above and was withdrawn. A reevaluation of the licensing basis is being pursued instead in the Section 50.54(f) process using the seismic hazards and peer review methodologies established by the NRC. To the extent that process results in changes to the plant or the licensing basis, those changes could be mandated by orders or could be subject to the 10 C.F.R. § 50.59 and license amendment processes as appropriate. If a license amendment is deemed to be required, an appropriate hearing opportunity will be afforded. Meanwhile, contrary to the unsupported statements in Contention 2, there is ample safety basis for current operation under the current licensing basis.

Referring to the NRC's Part 9900 Operability Guidance, FOE also asserts that the NRC's "policy" on operability does not allow PG&E or the NRC to rely upon probabilistic evaluation to establish that "a plant is safely operable."⁶⁵ But PG&E's and the NRC Staff's evaluations of the Shoreline Fault have been deterministic evaluations, as was the HE evaluation. Moreover, new seismic information is being addressed in the Section 50.54(f) process for reevaluation of the seismic licensing basis. This process is not the same as the Part 9900 Operability Determination process that applies when addressing the operability of Technical Specification equipment that does not conform to the *current* licensing basis. The "policy" from the Part 9900 Operability Guidance that FOE cites does not apply to the Section 50.54(f) process or the analysis specifically requested by the NRC. As discussed above, the NRC Staff has stated that it views the seismic

⁶⁴ The NRC Staff requested this comparison as an aid to their review of the voluntary LAR.

⁶⁵ Petition at 57.

hazards reevaluations to be distinct from operability under the current licensing basis.⁶⁶ Moreover, a probabilistic seismic methodology such as PG&E's LTSP process can demonstrate (and indeed has demonstrated) the safety of Diablo Canyon operation.

4. *USGS Data and Research is Subject to the Ongoing Seismic Review Process.*

FOE next cites the research of USGS geophysicist Dr. Jeanne Hardebeck.⁶⁷ Dr. Hardebeck's research suggests that the possibility of a joint rupture of the Shoreline and Hosgri faults cannot be ruled out, and therefore could be more capable than previously evaluated. This, however, is precisely the type of issue that is being reviewed as part of the response to the Section 50.54(f) Letter – and is being considered through the SSHAC process requested by the NRC. Moreover, there is also no basis to conclude that Dr. Hardebeck's research means that current operation of the plant poses an undue risk. PG&E's most recent Seismic Imaging Report addresses this issue in detail. Dr. Hardebeck's research and PG&E's geoscience reviews suggest that a joint rupture of the faults may result in an increase in the magnitude of an earthquake. The increased magnitude is addressed in the Seismic Imaging Report and will be reflected in the probabilistic seismic hazards assessment to respond to the NRC's Section 50.54(f) Letter. FOE is raising an issue out-of-process and ignoring the evidence of record.

5. *Dr. Peck's DPO Does Not Demonstrate that the HE is an Insufficient "Safety Metric."*

FOE's Petition next offers a recitation on Dr. Peck's DPO.⁶⁸ A DPO is one process that the NRC uses to allow individuals within the agency to document differing views.⁶⁹ NRC Staff

⁶⁶ See n.36, above.

⁶⁷ Petition at 58.

⁶⁸ *Id.* at 60-63.

⁶⁹ Management Directive MD 10.159, "The NRC Differing Professional Opinions Program."

management recently completed its review of the DPO.⁷⁰ The NRC's Executive Director for Operations ("EDO") reviewed an appeal from an earlier DPO Panel Report, and did not agree with Dr. Peck's position that the Diablo Canyon "licensing basis and approved methodology for seismic evaluation [is] limited to the methodology associated with the DDE from the original license application."⁷¹ The EDO recognized that the Hosgri evaluation and associated methodologies are part of the plant's historic licensing basis. The Staff's DPO panel had also previously concluded that an amendment to the license was not required.⁷² Dr. Peck, the EDO, and DPO panel also have all agreed that "issues raised in the DPO do not result in a significant or immediate safety concern."⁷³ In total, Dr. Peck's opinion as expressed in his DPO does not reflect either the licensing history of Diablo Canyon or the position of the agency. Nor does it indicate the existence of a significant safety issue. The DPO does not establish a *de facto* license amendment or an issue to be resolved in a plant-specific hearing.

FOE principally argues, based on the DPO, that the LTSP methodology and the HE methodology (FOE refers to the two interchangeably with no clear awareness of differences) "are

⁷⁰ Letter, M.A. Satorius to M.S. Peck, "Differing Professional Opinions Appeal Decision Involving Seismic Issues at Diablo Canyon (DPO-2013-002)," dated September 9, 2014 (ADAMS Accession No. ML14252A743) ("DPO Appeal Letter").

⁷¹ *Id.* at 5.

⁷² *Id.* at 3. Dr. Peck had also previously raised his issues through the NRC's Non-Concurrence Process (Management Directive MD 10.158, "NRC Non-Concurrence Process."). His views were addressed in that process by NRC Region IV management and generally rejected. *See* "Non-Concurrence Process Record for NCP-2012-001" (ADAMS Accession No. ML12151A173).

⁷³ DPO Appeal Letter at 5. In any event, the Part 9900 Operability Guidance (Appendix C, Section C.4) does specifically allow use of alternate methodologies to establish operability or functionality of equipment.

inadequate to insure that Diablo Canyon can be safely shutdown”⁷⁴ because of “weak” or “relaxed” assumptions in the HE and LTSP or perceived “deviations from the Standard Review Plan.”⁷⁵ Again, it is not clear exactly what assumptions FOE is claiming to be “relaxed.” But, as previously discussed, it is well-documented that updated damping values and other assumptions (such as material strengths) were used in connection with the 1977 HE structural evaluation and excess (and unnecessary) conservatism was eliminated. And the Standard Review Plan (especially the current SRP) was never part of the Diablo Canyon seismic licensing basis. FOE’s argument amounts to a challenge to the Diablo Canyon licensing process that was completed over 30 years ago. And it ignores the post-Fukushima Section 50.54(f) process that the agency has adopted going forward for all plants to reevaluate the seismic licensing basis.

Dr. Peck’s concern in his DPO was with not the current safety of Diablo Canyon.⁷⁶ By its terms, the DPO addressed *the sufficiency of the Staff’s enforcement actions* based on his views on the licensing basis, the process to be used to evaluate new information, and the manner in which old methodologies should be applied to new seismic information. As discussed above, and contrary to FOE and the DPO, seismic licensing bases, such as the DE, DDE, and HE for Diablo Canyon, are each a self-contained evaluation completed at the time of licensing. The licensing basis evaluations each have their own “one moment in time” set of methodologies and input values. It is true that assumptions vary among the analyses completed for the DE, DDE, and HE evaluations. But the regulations and guidance do not require that the most conservative assumptions from the 30-year old analyses be combined with new seismic hazards information to

⁷⁴ Petition at 60

⁷⁵ *Id.* at 62.

⁷⁶ See DPO Appeal Letter at 5 (noting Dr. Peck’s agreement that the issues raised in his DPO do not result in a significant or immediate safety concern).

address the present operability of safety related equipment. Rather, the safety of current operation has been established by showing that revised ground motions are less than the licensing basis Hosgri ground motions. Equipment qualified to the HE remains qualified. The LTSP methodology also continues to confirm the safety of Diablo Canyon operation. The adequacy of the licensing basis will be further addressed to respond to the Section 50.54(f) Letter, using the most up-to-date seismic information analysis methods and assumptions. The Atomic Energy Act does not require a hearing at this time on issues being considered in the Section 50.54(f) process.

CONCLUSION

For the foregoing reasons, the Commission should deny FOE's Petition.

Respectfully submitted,

/s/ signed electronically by

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Executed in accord with 10 C.F.R. 2.304(d)

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COUNSEL FOR THE PACIFIC GAS
AND ELECTRIC COMPANY

Dated at Washington, District of Columbia
this 6th day of October 2014

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of:)	
)	
PACIFIC GAS AND ELECTRIC)	Docket No. 50-275-LR
COMPANY)	Docket No. 50-323-LR
)	
(Diablo Canyon Power Plant, Units 1 and 2))	

CERTIFICATE OF SERVICE

I hereby certify that copies of “Pacific Gas and Electric Company’s Answer to Friends of the Earth Hearing Request” and “Declaration of Mr. William R. Horstman in Support of Pacific Gas & Electric Company’s Answer Opposing Friends of The Earth’s Request for Hearing” in the captioned proceeding have been served via the Electronic Information Exchange (“EIE”) this 6th day of October 2014, which to the best of my knowledge resulted in transmittal of the foregoing to those on the EIE Service List for the captioned proceeding.

Respectfully submitted,

/s/ signed electronically by
David A. Repka
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COUNSEL FOR THE PACIFIC GAS
AND ELECTRIC COMPANY

October 6, 2014

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of:)	
)	
PACIFIC GAS AND ELECTRIC)	Docket No. 50-275-LR
COMPANY)	Docket No. 50-323-LR
)	
(Diablo Canyon Power Plant, Units 1 and 2))	

DECLARATION OF MR. WILLIAM R. HORSTMAN IN SUPPORT OF
PACIFIC GAS & ELECTRIC COMPANY’S ANSWER OPPOSING
FRIENDS OF THE EARTH’S REQUEST FOR HEARING

Mr. William R. Horstman states as follows under penalty of perjury:

1. I am a Senior Consulting Civil Engineer at Pacific Gas & Electric Company’s (“PG&E”) Diablo Canyon Power Plant (“DCPP”).

2. My educational background and qualifications include a B.S. in Civil Engineering from the University of California, Berkeley in 1979, and an M.S. in Structural Engineering and Structural Mechanics from the University of California, Berkeley in 1980. I am a registered Professional Engineer in the State of California, and a member of the American Society of Civil Engineers, the American Concrete Institute, and the Structural Engineers Association of Northern California. I have over 34 years of experience in the commercial nuclear power industry.

3. I began my career in 1980 as a civil and structural engineer with Cynga Energy Services, where I conducted seismic evaluations of various systems and consulted with various nuclear power plants on seismic design-related issues. In 1988, I became a Section Manager for the Engineering Mechanics Section of Cynga’s Walnut Creek, CA, office, and later the Division Manager for the Engineering Division of Cynga’s Walnut Creek office. From 1990 – 1996, I

was assigned as a consultant to PG&E's Civil/Architectural Engineering Group associated with DCPD, where I prepared and maintained Design Criteria Documents for the seismic analysis of structures and systems. I also conducted finite element modeling and seismic analyses of plant structures to determine the effects of physical modifications on member forces/stress, seismic response spectra, and seismic displacements. In 1996, I became a PG&E employee as a Senior Consulting Civil Engineer. From 1996-2010, I continued to work in PG&E's Civil/Architectural Engineering Group at DCPD, where I was the responsible engineer and subject matter expert for the wind, tornado, tsunami, and seismic design basis of major plant structures. In this capacity, I prepared engineering calculations, design drawings, and design changes to support plant modifications.

4. From 2010-2012, I completed a rotational assignment to the PG&E Senior Director of Engineering to address issues associated with the Shoreline Fault. I was a member of the team that developed a strategy to evaluate new and updated seismic information under the PG&E Long Term Seismic Program and prepared License Amendment Request 11-05 regarding new and updated seismic information. In addition, I interacted with the PG&E Geosciences Department on preparation of PG&E's January 2011 Shoreline Fault Report, and assisted the PG&E Manager of Project Engineering in the development of the formal Prompt Operability Assessment addressing the seismic safety implications of the Shoreline Fault.

5. Currently, I am a Senior Consulting Civil Engineer with PG&E's Seismic Engineering Group. My responsibilities include updating elements of the DCPD Probabilistic Seismic Hazards Assessment ("PSHA"); interacting with the PG&E Geosciences Department to update the DCPD seismic hazards evaluation; participating in DCPD's response to post-Fukushima NRC requirements; and supporting the DCPD Licensing Basis Verification Project.

6. I have reviewed the Friends of the Earth (“FOE”) request for hearing on an alleged *de facto* license amendment of PG&E’s operating license for DCP. ¹

7. During the construction permit review for DCP, 10 C.F.R. Part 100, Appendix A was under development. As discussed in NRC’s Supplemental Safety Evaluation Report (“SSER”) 4, issued on May 11, 1976, in connection with the DCP operating license application, the original seismic design for DCP, accepted by the NRC for the construction permit, was based upon consideration of four earthquake scenarios:

- A. Magnitude 8-1/2 along the San Andreas fault 48 miles from the site.
- B. Magnitude 7-1/4 along the Nacimiento fault 20 miles from the site.
- C. Magnitude 7-1/2 along the off-shore extension of the Santa Ynez fault 50 miles from the site.
- D. Magnitude 6-3/4 aftershock near the site associated with Earthquake (A).

Based on a review of predicted ground motions at the site, PG&E developed the Design Earthquake (“DE”) response spectra. The Double Design Earthquake (“DDE”) was defined as twice the DE.

8. In 1973, when PG&E submitted the DCP operating license application, it identified research related to the Hosgri fault offshore from DCP. That fault is now placed approximately three miles from the site. As discussed in SSER 4 (at 2-4, 3-1), the criteria to be used in the Hosgri evaluation were developed jointly by the NRC, PG&E, and outside consultants. The Hosgri evaluation used accepted deterministic methodology.

9. DCP’s operating license, issued in 1984, was ultimately based on three separate seismic evaluations: the original DE and the DDE, and the Hosgri Earthquake (“HE”) response

¹ “Petition to Intervene and Request for Hearing by Friends of the Earth,” dated August 26, 2014.

spectra. These evaluations are described in the NRC Staff's SSER 7, issued May 26, 1978 (at 2-3 – 2-5).

10. The DE had a horizontal peak ground acceleration (or ground motion) of 0.20g, and the DDE had a horizontal peak ground acceleration of 0.40g. As addressed in SSER 4, the NRC Staff concluded based on its consultations with outside experts that for the HE, a magnitude 7.5 earthquake should be assumed on the Hosgri fault with an effective horizontal peak ground acceleration of 0.75g.

11. The 10 C.F.R. Part 100 Appendix A concepts of "operating basis earthquake" ("OBE") and "safe shutdown earthquake" ("SSE") did not exist when the DE and DDE were developed. In SSER 1, issued on January 30, 1975, the NRC first stated that the DE (0.20g) was equivalent to an OBE and the DDE (0.40g) was equivalent to an SSE. SSER 1, Section 2.5.2. However, after the Hosgri fault was identified, the NRC stated that the HE was considered to be the SSE, or at least the equivalent. SSER 7, Section 2.5.

12. The three DCPD licensing basis earthquakes can be summarized as follows:

Licensing Basis Earthquake	Peak Ground Acceleration
DE	0.20g
DDE	0.40g
HE	0.75g

The licensing basis ground motions for each of the DE, DDE, and HE are reflected in a deterministic licensing basis ground motion response spectrum used for the design and seismic qualification of safety related equipment. The peak acceleration corresponds to an acceleration

at a period of 0.01 seconds on a response spectrum (or roughly 100 hertz if plotted against the frequency).

13. PG&E did not update the DCPD Updated Final Safety Evaluation Report (“UFSAR”) to reflect that the NRC considered the HE to be the SSE. The UFSAR reflects PG&E’s view at the time that the DDE was considered to be the SSE. The NRC Staff noted this discrepancy in SSER 7, Section 2.5.2, but nonetheless equated the HE to the SSE. The HE was described in the UFSAR and was clearly part of the licensing basis.

14. The 1977 Hosgri evaluation of seismic qualification of equipment was not based on the same methods, assumptions, or acceptance criteria as the DE and DDE evaluations. SSER 7, Section 3.7, at 3-13 – 3-14. For example, damping values associated with specific structures or components being evaluated were updated from those used for the DE and DDE analyses, based on those recommended by the NRC in Regulatory Guide 1.61 (October 1973). Because of the limited data available at the time of the DE and DDE seismic design of DCPD, the original damping values were not realistic and were overly conservative. The NRC Staff stated: “Allowing the use of higher damping values in this reevaluation is realistic and should not be regarded as an arbitrary lowering of the margins of safety.” SSER 7, Section 3.8.5.3 at 3-19. Similarly, actual as-built material strengths could be used rather than assumed material strengths as in the original evaluations. The NRC Staff concluded in SSER 7 that if PG&E “used a load in the original design and can now demonstrate that the Hosgri event load is less, we consider this to be a sufficient load determination. Where the original analysis is more limiting, [PG&E] has chosen not to take credit for the lesser Hosgri event loads, but rather to use the more limiting [DDE] loads.” *Id.* PG&E continues to qualify safety related equipment for the DE, DDE, and HE seismic loads.

15. The NRC Atomic and Safety Licensing Board (“ASLB”) and the Atomic Safety and Licensing Appeal Board (“Appeal Board”) considered DCP’s seismic design basis during hearings on the operating license. The DE was upheld as an OBE, and the HE was found to be the equivalent of an SSE.

16. The DCP Unit 1 Facility Operating License was amended after initial licensing to address a recommendation of the NRC’s Advisory Committee on Reactor Safeguards (“ACRS”) to add License Condition 2.C.(7). This condition required PG&E to “develop and implement a program to reevaluate the seismic design basis used for [DCP].” In particular, Condition 2.C.(7) required PG&E to “identify, examine, and evaluate all relevant geologic and seismic data, information, and interpretations that have become available since the 1979 ASLB hearing....” The report was to be issued to the NRC three years after NRC Staff approval of a program plan.

17. To satisfy Condition 2.C.(7), PG&E developed the Long Term Seismic Program (“LTSP”) for Diablo Canyon. On July 31, 1988, PG&E submitted an LTSP Final Report to the NRC, which included detailed evaluations of existing and new geologic and seismic data. The criteria used in the LTSP evaluation were developed jointly by PG&E and outside consultants, and are a combination of deterministic seismic margin assessment and the seismic probabilistic risk assessment/seismic hazard analysis (the Diablo Canyon PSHA). The LTSP Final Report demonstrated that a maximum earthquake of magnitude 7.2 on the Hosgri fault constituted a very conservative basis for analyzing the plant and its equipment, and concluded that equipment qualified for the DE, DDE, and HE seismic loads remained qualified.

18. The LTSP and associated NRC review took place from April 1984 – September 1991. The process involved over sixty noticed public meetings, which included the NRC, NRC

consultants, the ACRS, the U.S. Geological Survey, University of Nevada professors and graduate students, a Ground Motion Panel consisting of four distinguished professors, a Soil Structure Interaction Panel consisting of four distinguished professors, a Fragility Panel consisting of distinguished engineers from the Brookhaven and Sandia National Laboratories and engineers from EQE, Inc., and a PRA Advisory Panel consisting of distinguished engineers from Brookhaven Laboratory. In addition, independent studies for the NRC were conducted by Dr. David B. Slemmons, University of Nevada, on geology, seismology, and tectonics; Dr. Kenneth Campbell of EQE on empirical ground motions; Dr. Anestis S. Veletsos on soil/structure interaction; Dr. Michael Bohn, Sandia National Lab, on seismic risk; Dr. James Johnson, EQE, Inc., and Dr. M. K. Ravinda, EQE, Inc., on fragility; and the Brookhaven National Laboratory on probabilistic risk assessment. All of these activities were reviewed at a series of public meetings of the Advisory Committee on Reactor Safeguards.

19. On June 30, 1991, the NRC Staff issued SSER 34, which described the Staff's review of the LTSP. The NRC stated that, "[t]he seismic qualification for Diablo Canyon will continue to be the original design basis plus the Hosgri evaluation basis, along with the associated analytical methods, initial conditions, etc. The LTSP has served as a useful check on the adequacy of the seismic margins and has generally confirmed that the margins are acceptable." SSER 34, Section 1.4. The NRC found that PG&E had satisfied Condition 2.C.(7).

20. The LTSP therefore had no effect on the DE, DDE, or HE evaluations – that is, no change in the licensing basis earthquakes for DCPD used in the seismic design of safety related equipment.

21. After PG&E completed one confirmatory item resulting from SSER 34 (evaluating the impact of the differences between the NRC's estimate of the 50th and 84th

percentile horizontal and vertical ground motion and PG&E's estimates), the NRC closed Condition 2.C.(7).²

22. In closing out Condition 2.C.(7), PG&E committed to maintaining "a strong geosciences and engineering staff to keep abreast of new geological, seismic, and seismic engineering information and evaluate it with respect to its significance to [DCPP]." SSER 34, Section 2.5.2.4. PG&E in fact has continued to implement this program throughout the operating life of the plant. As a result of its ongoing collaboration with independent scientists and the U.S. Geological Survey, PG&E identified and reported to the NRC new information related to the Shoreline zone of seismicity (referred to as the "Shoreline Fault") in November 2008.

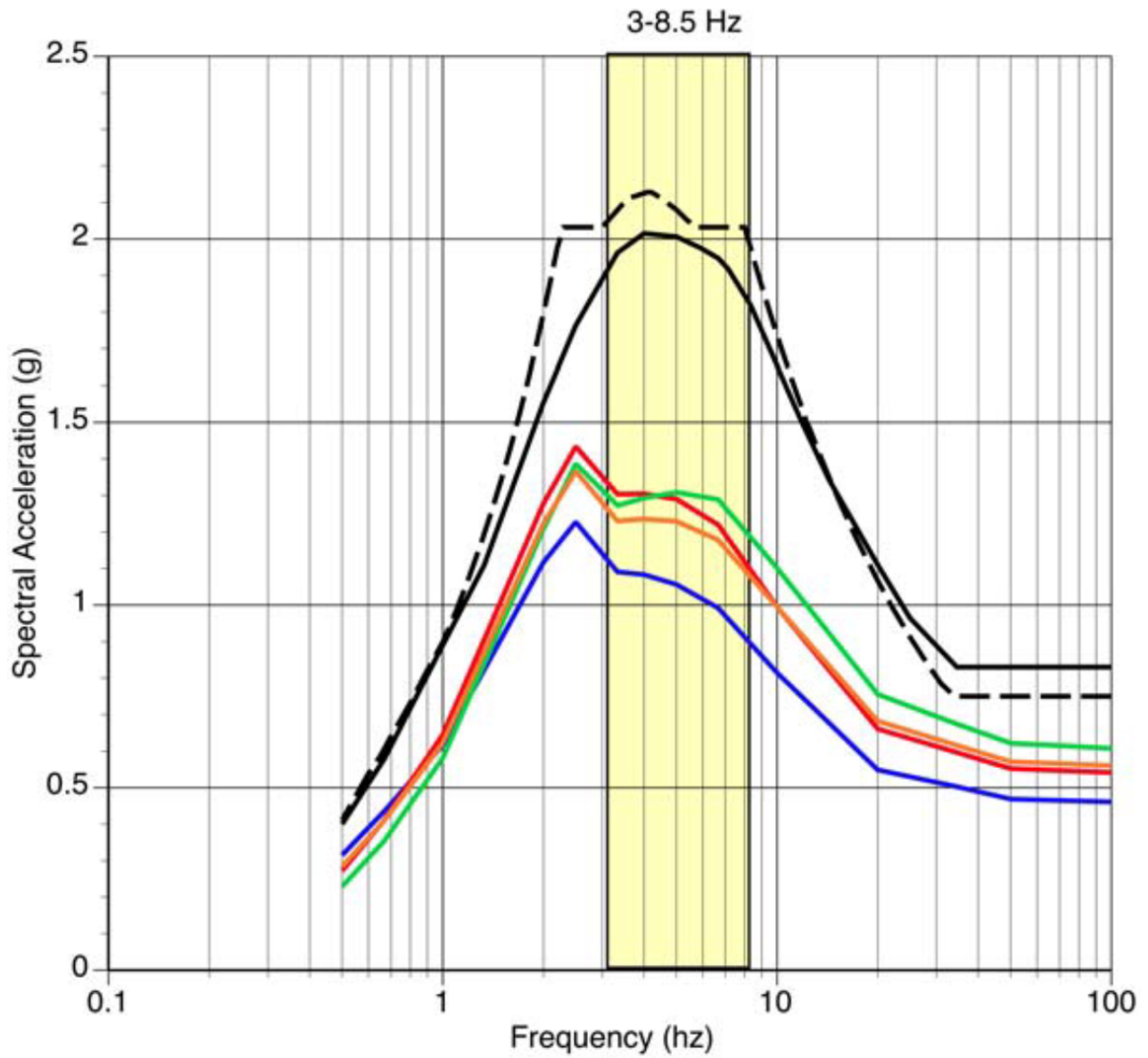
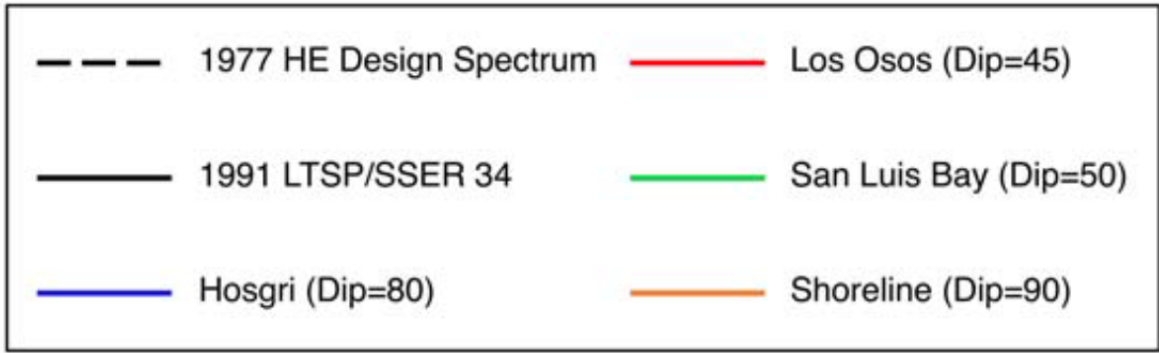
23. On November 14, 2008, the Shoreline Fault was entered into DCP's Corrective Action Program for an initial deterministic engineering assessment of plant safety; that is, to address whether the existing seismic design of safety related equipment is adequate for new or updated ground motion response spectra developed for the Shoreline Fault. Because new seismic information had been identified as a result of the ongoing LTSP research and evaluation process for Diablo Canyon, this initial assessment was based on a comparison of the ground motion levels hypothesized for the Shoreline Fault to the Hosgri ground motion levels considered in the 1991 LTSP. The assessment found that the ground motions for the Shoreline Fault would be bounded by the ground motions from the larger Hosgri fault for which the plant design was previously found to be acceptable. Plant structures, systems, and components qualified by the licensing basis seismic evaluations would be qualified for the maximum ground motions predicted for the Shoreline Fault based on the most up-to-date geoscience methods.

² Letter from H. Rood, NRC, to G. M. Rueger, PG&E, "Transmittal of Safety Evaluation Closing Out Diablo Canyon Long-Term Seismic Program (TAC Nos. M80670 and M80671)" (April 17, 1992).

24. In early 2009, the NRC Staff completed its first independent assessment of PG&E's new seismic information, documented in a letter to PG&E on April 8, 2009, attaching Research Information Letter ("RIL") 09-001.³ The NRC Staff's assessment was a best-estimate deterministic hazard analysis. The Staff's analysis confirmed that seismic loading levels predicted for a maximum magnitude earthquake on the Shoreline Fault are below those for which Diablo Canyon was previously analyzed for all frequencies of interest.

25. On January 7, 2011, PG&E submitted to the NRC a detailed report on the Shoreline Fault. Based on a deterministic methodology, PG&E created new or updated ground motion response spectra for the Shoreline, Los Osos, Hosgri, and San Luis Bay faults. The Shoreline Fault Report demonstrated that the response spectra for the four regional faults are bounded by the licensing basis 1977 HE response spectrum. Figure ES-1 from the Shoreline Fault Report (appearing below) depicts the relevant ground motion response spectra. As is typical in deterministic seismic evaluations of this type, PG&E utilized deterministic 84th percentile ground motions. This corresponds to the median plus one standard deviation as was applied in the development of the 1977 HE response spectrum.

³ Research Information Letter 09-001, "Preliminary Deterministic Analysis of Seismic Hazard at Diablo Canyon NPP from Newly Identified 'Shoreline Fault'" (April 8, 2009) (ADAMS Accession No. ML090330523).



26. Note that Figure ES-1 includes the 1977 HE design (licensing basis) response spectrum as well as the 1991 LTSP (SSER 34) response spectrum. It also includes a “Hosgri (Dip=80)” spectrum. The latter is a deterministic ground motion developed by PG&E in 2011 as part of the studies leading to the Shoreline Fault Report. It is based on a magnitude 7.1 event on the Hosgri fault using ground motion prediction methods that were available in 2011. The differences between the 1977, 1991, and 2011 Hosgri response spectra are due to the evolution in the intervening years in the understanding of the characteristics of the Hosgri fault and updates to the ground motion prediction methods. The 2011 Hosgri (Dip=80) response spectrum has no direct relationship to the 1977 HE licensing basis spectrum, other than to show that the latter is conservative. The fact that in 2011, the Shoreline Fault, Los Osos fault, or San Luis Bay fault spectra may exceed the 2011 Hosgri spectrum does not mean that the predicted ground motions for those three faults will exceed the 1977 HE licensing basis or the design capabilities of safety related plant equipment.

27. In June 2011, based on interactions with the NRC, PG&E also documented a formal Prompt Operability Assessment in accordance with Diablo Canyon procedures, addressing the seismic safety implications of the Shoreline Fault. The assessment again addressed the Shoreline Fault, as well as new information regarding the other regional faults. PG&E compared new or updated ground motion response spectra to the three licensing basis earthquake (DE, DDE, and HE) response spectra. The assessment found that although the ground motions for the Shoreline Fault exceed the DDE in some frequencies, they do not at any frequency exceed the licensing basis 1977 HE ground motions.. Because the Shoreline Fault (and other regional faults) ground motions are enveloped by the 1977 HE, and because DCPD can safely shutdown during events associated with the 1977 HE, DCPD can also safely shutdown

down during events associated with the Shoreline Fault and San Luis Bay and Los Osos faults. The fact that equipment is qualified in some cases to even greater loads generated from the conservative, and hypothetical, DDE evaluation adds design margin in those cases. Because the maximum predicted loads did not exceed the licensing basis seismic loads, plant equipment was not in an unanalyzed condition.

28. Dr. Michael Peck, the NRC Senior Resident Inspector at Diablo Canyon at the time, urged PG&E to address new seismic information through the process in PG&E's procedures adopted in accordance with NRC Inspection Manual Chapter Part 9900: Technical Guidance – "Operability Determinations and Functionality Assessments for Resolution of Degraded and Nonconforming Conditions Adverse to Quality or Safety" (April 2008). That process applies to equipment identified as degraded or nonconforming relative to the licensing basis. PG&E maintained that the operability process for degraded or nonconforming equipment is not the proper regulatory process for evaluating new seismic information; that no regulatory process was defined at the time; and that the LTSP was the best process for evaluating new seismic information. The NRC has since clarified that the process for addressing new seismic information post-Fukushima will be the Section 50.54(f) request for information process.

29. Dr. Peck also advocated use of the original DDE methodology and response spectra as the appropriate method and benchmark for evaluating new seismic information. Assumptions vary among the analyses completed for the DE, DDE, and HE evaluations. However, each licensing basis evaluation, such as the DE, DDE, and HE, is a self-contained analysis completed at the time of licensing. The licensing basis evaluations each have their own "one moment in time" set of methodologies and input values. It is not technically valid to take the most conservative assumptions from among the three licensing basis evaluations and apply

those to seismic hazards information unknown at the time of licensing, to address the present operability of safety related equipment or to demonstrate the safety of current operation. The NRC Staff management, in addressing his Differing Professional Opinion, ultimately rejected Dr. Peck's view and recognized that the HE response spectrum was accepted as a part of the Diablo Canyon licensing basis.⁴

30. The NRC's Part 9900 Operability Guidance also specifically allows use of an alternate methodology to establish operability or functionality of safety related equipment (Part 9900 Operability Guidance, Appendix C at Section C.4).

31. On October 20, 2011, because of the uncertainty that existed at the time at DCPD surrounding the regulatory process for evaluating the new seismic information, PG&E submitted License Amendment Request ("LAR") 11-05 to the NRC, requesting: (1) to clearly define the process for evaluating newly-identified seismic information based on the LTSP, and (2) to clarify – consistent with SSER 7 – that the HE is the DCPD equivalent to an SSE. Request 1 corresponded to PG&E's ongoing commitment to keep abreast of new geological, seismic, and seismic engineering information. Request 2 sought to establish consistency between the FSAR and the NRC's documented position on the SSE, as established in earlier regulatory correspondence. However, LAR-11-05 was later mooted by the post-Fukushima Section 50.54(f) letter. PG&E therefore withdrew LAR-11-05.

32. Within approximately one year of the Fukushima event, the Commission directed specific actions to address the agency's Japan Lessons Learned Near-Term Task Force Recommendations. To implement Recommendation 2.1, the NRC sent a letter on March 12,

⁴ Memorandum, M.A. Satorius to M.S. Peck, "Differing Professional Opinion Appeal Decision Involving Seismic Issues at Diablo Canyon (DPO-2013-002)" (September 9, 2014).

2012, to all power reactor licensees pursuant to 10 C.F.R. § 50.54(f) requesting the reevaluation of seismic hazards reevaluate seismic hazards using present day methods and guidance to identify vulnerabilities. The Section 50.54(f) letter effectively subsumed the Generic Issue 199⁵ process previously underway for plants in the Central and Eastern U.S. and applied a similar process to plants in the Western U.S. As a Western plant, PG&E must submit its initial seismic hazards analysis within three years of the Section 50.54(f) request (*i.e.*, by March 2015). On April 29, 2013, PG&E submitted to the NRC a plan and schedule for its Diablo Canyon seismic reevaluation.

33. The NRC Staff reviewed the Shoreline Fault Report and in September 2012 documented its findings in Research Information Letter (“RIL”) 12-01.⁶ In RIL 12-01 and an October 12, 2012 letter to PG&E, the NRC confirmed its previous conclusion in RIL 09-001 that the seismic loading levels for a maximum magnitude earthquake on the Shoreline Fault are below those for which DCPD was previously analyzed. The NRC reiterated (at page 2) that “the deterministic seismic-loading levels predicted for the Shoreline fault earthquake scenarios developed and analyzed by the NRC are at, or below, those levels for the HE ground motion and the LTSP ground motions. . . . Therefore, the existing design basis for the plant already is sufficient to withstand those ground motions.” In this letter, the NRC also concluded (at page 2) that in light of the deterministic evaluations that had been completed, the Shoreline Fault

⁵ Memorandum, M.E. Mayfield to F. Eltawila, “Generic Safety Issue 199, ‘Implications of Updated Probabilistic Seismic Hazards Estimates in Central and Eastern United States on Existing Plants’” (June 9, 2005) (ADAMS Accession No. ML051600272).

⁶ Research Information Letter 12-01, “Confirmatory Analysis of Seismic Hazard at the Diablo Canyon Power Plant from the Shoreline Fault Zone” (September 2012) (ADAMS Accession No. ML121230035) (“RIL 12-01”).

scenario “should be considered as a lesser included case under the Hosgri evaluation and the licensee should update the Final Safety Analysis Report (FSAR), as necessary.”

34. The NRC’s October 12, 2012 letter regarding PG&E’s 2011 Shoreline Fault Report also stated that the NRC’s ongoing review of seismic issues at DCPD would be conducted under the Fukushima-related Section 50.54(f) process.

35. PG&E complied with the NRC Staff’s expectations stated in the October 12, 2012 letter. PG&E updated the Diablo Canyon Updated Final Safety Analysis Report (“UFSAR”) under the process established in 10 C.F.R. § 50.71(e) to clarify that the Shoreline scenario is a lesser included case under the Hosgri evaluation. No license amendment was required for this UFSAR change. This issue as well was addressed in the DPO process, with the DPO panel concluding that the NRC Staff did not fail to enforce 10 C.F.R. § 50.59 requirements.

36. On September 10, 2014, PG&E issued a report documenting the results of the Central Coastal California Seismic Imaging Project (“CCCSIP”), which was based on advanced seismic studies recommended by the California Energy Commission in response to state legislation (California Assembly Bill 1632). These studies have given PG&E and independent scientists unprecedented insight into the seismic characteristics of the region near Diablo Canyon. These studies have shown that, using the most up-to-date deterministic methodologies and information, the updated GMRS for the Shoreline Fault (and for other regional faults) remains bounded by the licensing basis 1977 HE ground motions. This report confirmed previous analyses that DCPD and its structures, systems, and components are designed to withstand and perform their safety functions during and after a seismic event on faults in the vicinity of the plant.

37. PG&E will use the information developed from its advanced seismic studies and the 2014 CCCSIP Report to support the probabilistic seismic hazard assessment requested by the NRC under 10 C.F.R. § 50.54(f) in order to respond to the agency's Japan Lessons-Learned Near-Term Task Force recommendations that licensees reevaluate the seismic hazards at their sites against present-day NRC requirements and guidance.

38. Specifically, PG&E is currently working on an updated PSHA for Diablo Canyon to address the NRC's Section 50.54(f) request for information. The PSHA was originally completed for the LTSP, was updated in 1994 to support PG&E's response to the NRC's Generic Letter and Section 50.54(f) request for information on plant-specific severe accident vulnerabilities due to external events,⁷ and has been updated from time-to-time since then. As requested in the NRC's October 12, 2012 letter, PG&E's response to the Section 50.54(f) request will compare updated Ground Motion Response Spectra to the current licensing basis. PG&E's response is due to the NRC on March 12, 2015.

39. U.S. Geological Survey geophysicist Dr. Jeanne Hardebeck has conducted research and suggested that the possibility of a joint rupture on the Shoreline and Hosgri faults cannot be ruled out, and therefore could be more capable than previously evaluated. This information is addressed in PG&E's 2014 CCCSIP Report related to PG&E's advanced seismic studies. It will also be addressed in connection with the probabilistic seismic reevaluation to respond to the Section 50.54(f) request for information.

⁷ See Generic Letter 88-20, Supplement 4, "Individual Plant Examinations of External Events (IPEEE) for Severe Accident Vulnerabilities" (June 28, 1991).

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed in accord with 10 C.F.R. § 2.304(d)

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