

**BEFORE THE UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

In the Matter of	)	
PACIFIC GAS & ELECTRIC COMPANY	)	Docket Nos. 50-275, 50-323
(Diablo Canyon Power Plant)	)	August 26, 2014

**PETITION TO INTERVENE AND REQUEST FOR HEARING  
BY FRIENDS OF THE EARTH**

In 2008, a U.S. Geological Survey geophysicist discovered a previously unknown fault just offshore from Diablo Canyon Power Plant (Diablo Canyon) near San Luis Obispo, California. Despite its being located just 300 meters from Diablo Canyon’s intake structure, Nuclear Regulatory Commission (NRC or Commission) and Pacific Gas & Electric (PG&E) scientists had failed to discover the fault during the approximately 30 years since Diablo Canyon began operations or in the approximately 45 years since the plant’s construction permits were issued. Six years after the discovery of this fault, later named the Shoreline Fault, PG&E has not demonstrated that the plant can be safely operated under its existing operating license; to the contrary, studies done so far indicate that the Shoreline Fault and the nearby Los Osos and San Luis Bay faults are capable of producing an earthquake with ground acceleration that far exceeds the limits in the plant’s current licensing basis, posing a serious safety risk to the public and environment near the plant.

Despite both the NRC's and PG&E's acknowledgement of this startling information, the NRC has not required PG&E to propose a license amendment and make a public demonstration that the plant remains safe to operate. Meanwhile the Staff has allowed the reactors to continue to operate outside their licensing basis, effectively amending the license *de facto*. In fact, the NRC appears to have suppressed a report by NRC's Chief Resident Inspector for Diablo Canyon, Dr. Michael Peck, stating flatly that the plant is no longer operating within its licensing basis. On August 25, 2014, the Associated Press (AP) issued a major article disclosing that Dr. Peck had filed a Dissenting Professional Opinion (DPO) with the NRC.<sup>1</sup> In his DPO, Dr. Peck concluded that "that [these] three local earthquake faults [the Shoreline, San Luis Bay, and Los Osos faults] are capable of generating significantly greater vibratory ground motion than was used to establish the facility safe shut down earthquake (SSE) design basis."<sup>2</sup> Since Diablo is not operating within its licensing basis, Dr. Peck asserted, the plant must suspend operations while the NRC considers a license amendment. Dr. Peck further noted that NRC's actions "[i]n response to this issue . . . have been inconsistent with existing regulatory requirements and the facility design bases and Operating License."<sup>3</sup> Despite Dr. Peck's explicit request that his DPO be made public, the existence of the report itself was not publically known until the AP's report.

The Atomic Energy Act (AEA or Act) requires a plant to have a valid license and operate within its licensing basis. The scope of the licensing basis, as described by the NRC, is

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<sup>1</sup> The Associated Press, *AP Exclusive: Expert Calls for Nuke Plant Closure*, N.Y. Times, Aug. 25, 2014, <http://www.nytimes.com/aponline/2014/08/25/us/ap-us-nuclear-reactor-dispute.html?hp&action=click&pgtype=Homepage&version=WireFeed&module=pocket-region&region=pocket-region&WT.nav=pocket-region>.

<sup>2</sup> NRC, Dr. Michael Peck, Differing Professional Opinion (*hereinafter* "DPO"), at 2. The DPO is provided as Attachment A to this Petition..

<sup>3</sup> DPO, at 2.

comprised of the requirements imposed on the plant by its design basis, facility-specific technical specifications, NRC regulations, and other requirements. When a plant cannot operate within the specific parameters described in the current licensing basis, the AEA requires the licensee to seek a license amendment, triggering a public process with an adjudicatory hearing in which other interested parties may participate. Thus NRC regulations, and public safety, require that the plant suspend operations, as requested by Dr. Peck, the NRC official at the site most directly responsible for public safety, until PG&E can show, with evidence reviewed in a public hearing on a license amendment, that the plant can be operated safely.

Diablo Canyon's licensing basis requires that the plant's integral systems and parts be qualified to withstand stress caused by the strongest potential earthquake that can occur at the plant. Currently, Diablo Canyon's licensing basis provides that the plant is qualified to withstand an earthquake with ground acceleration of 0.4 g.<sup>4</sup> The Shoreline Fault has the potential to cause an earthquake with ground acceleration of up to 0.62 g—much higher than what the licensing basis allows.<sup>5</sup> The Los Osos and San Luis Bay faults have peak ground acceleration of 0.60 g and 0.70 g, respectively—also well above what Diablo Canyon's licensing basis allows.<sup>6</sup> Yet the NRC Staff (herein sometimes referred to as the Staff or the Commission Staff) continues to allow the plant to operate without a public review of whatever evidence the

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<sup>4</sup> “g” is a measure of acceleration due to Earth's gravity. 1.0 g equals 9.81 m/s<sup>2</sup>. See NRC, Fact Sheet on Seismic Issues for Nuclear Power Plants, <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/fs-seismic-issues.html>.

<sup>5</sup> DPO, at 22. Peak ground acceleration is at 100 Hz. *Id.* See also PG&E Report to NRC, “Report on the Analysis of the Shoreline Fault Zone, Central Coast California,” (Jan. 2011), ADAMS Accession No. ML110140400, at 6-51.

<sup>6</sup> PG&E Report to NRC, “Report on the Analysis of the Shoreline Fault Zone, Central Coast California,” ADAMS Accession No. ML110140400, at ES-5.

NRC and the licensee can produce that it can safely withstand this far greater force, or without even PG&E's making changes to its licensing basis.

Following discovery of the Shoreline Fault, PG&E consulted with NRC Staff regarding how to evaluate the seismic risk posed by the three faults. Acting upon NRC Staff's advice, PG&E concluded that a change to its licensing basis was necessary and that the Staff would have to approve any new method used to evaluate the Shoreline Fault. Accordingly, PG&E filed a License Amendment Request.

Initially, NRC Staff determined internally to deny PG&E's request on grounds that amending Diablo Canyon's license as PG&E requested would lessen the plant's safety requirements below acceptable standards.<sup>7</sup> After reviewing the License Amendment Request, NRC Staff found that the method proposed by PG&E was "unacceptable from technical and regulatory perspectives."<sup>8</sup> NRC Staff thus recognized that it could not lawfully grant PG&E's amendment request.

Rather than deny the License Amendment Request, however, PG&E—with NRC's assistance—managed to achieve effectively the same result as requested in the License Amendment Request. Approximately one year after the License Amendment Request was submitted, NRC Staff permitted PG&E to withdraw its request, and began a private process to amend Diablo Canyon's license through closed-door negotiations with PG&E, in violation of the AEA, which requires the NRC to provide an opportunity for a public adjudicatory hearing on any

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<sup>7</sup> NRC draft document, "Basis for DE Denial of Diablo Canyon 1&2 LAR 11-05," at 3, ADAMS Accession No. ML13354B992. This document, which was attached from an NRC email, was obtained through the Freedom of Information Act, NRC Request No. FOIA/PA-2014-0065.

<sup>8</sup> *Id.*

amendment to a nuclear reactor operating license. NRC Staff took this striking position notwithstanding, and in direct contradiction to, its own prior determinations (1) that a formal license amendment was required to make the changes PG&E wanted to make; (2) that the License Amendment Request submitted by PG&E was insufficient to ensure that the plant would remain safe; and (3) that the NRC Staff could not lawfully grant the License Amendment Request.

Rather than requiring PG&E to provide a deterministic evaluation of the ability of the plant's structures, systems, and components (SSCs) to withstand the destructive forces of the worst-case earthquake caused by the Shoreline fault system, the Staff indicated that performance of the probabilistic analysis called for under the Commission's Fukushima review would provide sufficient assurance that the plant was safe to operate. But NRC policy requires a deterministic analysis of the plant's ability to survive a worst-case earthquake, and prohibits use of a probabilistic analysis of the chances such an earthquake will occur to demonstrate a plant's safety. PG&E cannot show, through its Fukushima analysis, that the plant's SSCs would survive a worst-case earthquake caused by the Shoreline fault system, and it has not made such a showing through other means.

In allowing PG&E to avoid a license amendment proceeding, NRC Staff relied upon a claim by PG&E that, although the potential ground motion from the Shoreline, Los Osos, and San Luis Bay faults exceeded that contained in Diablo Canyon's licensing basis, the seismic risk posed by the faults was less than the risk posed by another fault, the Hosgri Fault, near the plant. But the Hosgri analysis is not part of the licensing basis for Diablo Canyon, as the Commission made clear decades ago when it licensed the plant. Since it is not part of the licensing basis of

the plant, the Hosgri analysis therefore cannot be used to authorize continued operation under the current license.

Moreover, it has not been shown that Diablo Canyon is capable of being safely shut down following an earthquake. Although the Hosgri Fault is indeed a large fault that poses a significant risk to Diablo Canyon, the methodologies and assumptions used to evaluate the Hosgri Fault's risk to the plant are materially weaker than the assumptions that NRC regulations provide for use in determining whether a plant can safely withstand earthquakes. Indeed, PG&E has admitted that the projected ground motion at the plant site caused by an earthquake on one of the three faults is equal to or greater than potential ground motion caused by a Hosgri earthquake.<sup>9</sup> As a result, the Hosgri Event is not a valid basis for comparison to new seismic data.

By permitting PG&E to amend its license through back channels and informal discussions, rather than through the license amendment process required by the Atomic Energy Act, NRC is conducting a *de facto* license amendment proceeding, in violation of the AEA and NRC decisions. Rather than holding a public hearing process as required by the AEA, where the public could challenge the NRC Staff's and PG&E's unsubstantiated assertions that the plant is safe, the Staff has used a closed-door process between itself and the licensee to work a *de facto* license amendment. Using PG&E's self-serving assumptions as its basis for evaluating the new ground motion data relating to the Shoreline, Los Osos, and San Luis Bay faults, the Staff continues to grant PG&E operating authority not set forth in the current operating license for Diablo Canyon. Thus, the Staff is currently permitting Diablo Canyon to continue operating in

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<sup>9</sup> *Id.* at ES-2.

the face of a serious seismic threat that has not undergone comprehensive and transparent study, posing a serious safety risk to the public near Diablo Canyon.

Petitioner Friends of the Earth (Petitioner or FoE) therefore requests (1) that it be permitted to intervene in the *de facto* license amendment proceeding; (2) that the Commission empanel an Atomic Safety and Licensing Board to conduct a public adjudicatory hearing regarding Diablo Canyon's ability to be safely shut down in the event of the peak ground motion that can be expected given today's understanding of the potential earthquakes that could affect the plant, as required by the section 189a(a)(1)(A) of Atomic Energy Act, 42 U.S.C. § 2239(a)(1)(A); and (3) in accordance with past NRC practice, that the NRC order PG&E to suspend operations at Diablo Canyon pending a determination, following a public hearing, that it can be safely operated under its license as amended.

## **I. FACTUAL BACKGROUND**

### **1. Seismic Evaluations At Diablo Canyon In The 1970s**

Diablo Canyon Unit 1 received its construction permit in April 1968, some 46 years ago. The construction permit for Unit 2 followed in December 1970.<sup>10</sup> Construction of Diablo Canyon took place throughout the 1970s amid continuing controversy during the hearings before the Atomic Energy Commission on the operating license. The then-recently created Nuclear Regulation Commission did not approve full power operating licenses for Units 1 and 2 until November 1984 and August 1985, respectively, some 15 years after construction began.

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<sup>10</sup> See NRC, "Extension of Construction Permit Completion Dates," ADAMS Accession No. ML022320331 (Feb. 2, 1980), encl. at 1.

Diablo Canyon is located on top of a web of seismic faults. Although the area had been subjected to extensive seismic study prior to the issuance of Diablo Canyon's construction permit, PG&E seismologists failed to identify the Hosgri Fault, which is located about 6 miles from the plant.<sup>11</sup> Seismologists have determined that the Hosgri Fault has the potential to cause a devastating magnitude 7.5 earthquake—nearly twice as powerful as the earthquake the plant had been designed to withstand.

In response to the 1971 discovery of the Hosgri Fault, after the issuance of Diablo Canyon's construction permit, a condition unique among U.S. nuclear power plants was inserted into Diablo Canyon's Operating License. That condition required PG&E to “develop and implement a program to reevaluate the seismic design bases used for [Diablo Canyon].”<sup>12</sup> To implement this program, PG&E modified the NRC's standard earthquake design criteria used for all other plants and developed the Long Term Seismic Program (LTSP). A panel of the Atomic Safety and Licensing Board (ASLB) then found that, using the new Hosgri Evaluation (HE) methodology, Diablo Canyon was capable of withstanding the postulated Hosgri Event.<sup>13</sup> The ASLB refused to hear testimony offered by independent experts that the modified design criteria had no scientific basis.

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<sup>11</sup> PG&E, License Amendment Request 11-05, “Evaluation Process for New Seismic Information and Clarifying the Diablo Canyon Power Plant Safe Shutdown Earthquake,” ADAMS Accession No. ML11312A166 (Oct. 20, 2011), encl. at 4.

<sup>12</sup> Diablo Canyon Nuclear Power Plant, Unit 1, Operating License, Condition 2(C)(7), ADAMS Accession No. ML053140349.

<sup>13</sup> *See Pac. Gas & Elec. Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-79-26, 10 NRC 453 (1979), *aff'd in part*, ALAB-644, 13 NRC 903 (1981).



Rather than require PG&E to employ the assumptions that the company was required to use in the plant’s design basis earthquakes—the Double Design Earthquake (DDE) and Design Earthquake (DE)—the Commission treated the Hosgri Evaluation as a “special case,” permitting the seismic evaluation under the LTSP to use materially weaker assumptions than in the NRC standard method.<sup>14</sup> The Commission also confirmed that the LTSP would not alter the current licensing basis or seismic qualification basis for Diablo Canyon.<sup>15</sup> The Commission permitted PG&E to conduct its seismic analysis of the Hosgri Fault using the weaker, limited Hosgri Evaluation, rather than the comprehensive methodology used in the DDE and DE analyses.<sup>16</sup> The ASLB determined, based on the Hosgri Evaluation, that Diablo Canyon would continue to operate with an adequate margin of safety despite the discovery of a fault with potential ground acceleration that far exceeded the plant’s design basis.

The evaluation of seismic information and maintenance of an adequate seismic margin are paramount considerations in ensuring the plant’s ability to withstand seismic events. Yet, despite the discovery of the Hosgri Fault following the issuance of Diablo Canyon’s construction permit and the plant’s location in one of the most seismically active areas in the United States, Diablo Canyon’s operating license contains no clear direction or guidelines regarding how PG&E is required to analyze newly discovered seismic data.<sup>17</sup>

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<sup>14</sup> The Hosgri Evaluation is a seismic analysis within the LTSP.

<sup>15</sup> Diablo Canyon Nuclear Power Plant, Units 1 and 2, Final Safety Analysis Report Update, Section 2.5, “Geology and Seismology,” ADAMS Accession No. ML11145A034 (Rev. May 19, 2010), at 2.5-1 (hereinafter “FSARU”). *See also* NRC, “Additional Branch Chief Comments Related to NCP 2012-001 With Annotations,” ADAMS Accession No. ML12284A066, at 3.

<sup>16</sup> For purposes of this Petition, this evaluation is referred to as the Hosgri Evaluation or HE.

<sup>17</sup> PG&E, License Amendment Request 11-05, “Evaluation Process for New Seismic Information and Clarifying the Diablo Canyon Power Plant Safe Shutdown Earthquake,” ADAMS Accession No.

## 2. Discovery Of The Shoreline Fault

In November of 2008, history in a sense repeated itself. The U.S. Geological Survey discovered a previously unknown line of epicenters less than a quarter mile offshore from Diablo Canyon's intake structure. This line of epicenters became known as the Shoreline Fault. A January 2011 PG&E report concluded that the Shoreline Fault may be significantly stronger than any of the postulated earthquakes studied in Diablo Canyon's license:

The magnitude of deterministic earthquakes for the Shoreline fault (M6.5) is less than the magnitudes for the Hosgri (M7.1), but due to the shorter distance, the ground motions from the 84th percentile ground motions for Shoreline fault are greater than the updated ground motions from the Hosgri fault source.<sup>18</sup>

The 2011 private PG&E report concluded that the Shoreline Fault was not connected to the Hosgri Fault and that the Shoreline Fault is divided into segments that would act as barriers to earthquake rupture. An earthquake rupturing the Shoreline Fault and a part of the Hosgri Fault, which would be possible if the two faults are connected or are sufficiently close to each other that rupturing on one fault could trigger rupturing on the other, would produce a greater earthquake than by rupturing on only the Shoreline Fault.<sup>19</sup> The geophysicist who discovered the Shoreline Fault, Dr. Jeanne Hardebeck of the U.S. Geological Survey, vigorously disagrees with PG&E's unsubstantiated conclusion that the two faults are not connected. Dr. Hardebeck's published research concludes that the Shoreline Fault likely is connected to the Hosgri Fault and

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ML11312A166 (Oct. 20, 2011), encl. at 2 ("The current DCPD licensing basis lacks a clear process for evaluating new seismic information.").

<sup>18</sup> PG&E Report to the NRC, "Report on the Analysis of the Shoreline Fault Zone, Central Coastal California," ADAMS Accession No. ML ML110140425 (Jan. 2011), at ES-2.

<sup>19</sup> See Hardebeck, J, Geometry and Earthquake Potential of the Shoreline Fault, Central California," *Bulletin of the Seismological Society of America*, Vol. 103, No. 1, pp. 447-462, February 2013, doi: 10.1785/0120120175.

that, even if the two faults are not connected, the discontinuity is so small that it would not serve as a barrier to earthquake rupture across the two faults.<sup>20</sup> Based on her finding that rupturing on the Shoreline Fault could lead to further rupturing on the Hosgri Fault, resulting in a M7.5 earthquake, Dr. Hardebeck concluded that PG&E and NRC are wrong to rule out the possibility of a joint rupture that could cause a much larger earthquake than either fault alone.

Based on the discovery of the Shoreline Fault, PG&E also revised upward the risk posed to the plant by the nearby San Luis Bay and Los Osos faults.<sup>21</sup>

### 3. PG&E Submits License Amendment Request 11-05

After the discovery of the Shoreline Fault, the Staff and PG&E held a series of meetings regarding whether PG&E was required to amend its licensing basis in order to designate a method of evaluation for the Shoreline Fault. PG&E was concerned that “[t]he current DCCP licensing basis lacks a clear process for evaluating new seismic information.”<sup>22</sup> Following these meetings, the Staff concluded that a license amendment was “a necessary and appropriate step to clarify and resolve” the issue.<sup>23</sup>

PG&E therefore filed License Amendment Request 11-05 (LAR 11-05), seeking to fill the gap in the plant’s operating license and designate such a process. Through the LAR, PG&E

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<sup>20</sup> *Id.* at 447.

<sup>21</sup> PG&E Report to NRC, “Report on the Analysis of the Shoreline Fault Zone, Central Coastal California,” ADAMS Accession No. ML110140400, at ES-5.

<sup>22</sup> PG&E, License Amendment Request 11-05, “Evaluation Process for New Seismic Information and Clarifying the Diablo Canyon Power Plant Safe Shutdown Earthquake,” ADAMS Accession No. ML11312A166 (Oct. 20, 2011) (*hereinafter* “LAR 11-05”), at 2.

<sup>23</sup> NRC, “Additional Branch Chief Comments Related to NCP 2012-001 With Annotations,” ADAMS Accession No. ML12284A066 (Feb. 8, 2012).

“propose[d] to revise the current licensing basis, as described in the Final Safety Analysis Report as Updated (FSARU) and Technical Specifications, to provide requirements for the actions, evaluations, and reports necessary when PG&E identifies new seismic information relevant to the design and operation of [Diablo Canyon].”<sup>24</sup> In all, the LAR contained 408 pages of proposed changes to the FSARU and technical specifications and supporting documentation for those changes.

More specifically, through the amendment request, PG&E sought to:

- (1) clearly define an evaluation process for newly identified seismic information and incorporate ongoing commitments associated with the Long Term Seismic Plan [] into the FSARU;
- and (2) clarify . . . that the 1977 Hosgri earthquake is the equivalent of [Diablo Canyon]’s safe shutdown earthquake, as defined in 10 CFR 100, Appendix A.<sup>25</sup>

Recognizing that the LTSP was not intended to be a part of Diablo Canyon’s current licensing basis and was not intended for use in future discoveries of new faults, the Staff directed PG&E to submit an accounting of precisely how the LTSP differed from the NRC’s approved seismic evaluation methods. (Collectively, the set of NRC-approved methodologies, assumptions, and acceptance criteria is called the “Standard Review Plan.”) In response, PG&E submitted a 331-page document outlining the LTSP’s deviations from the Standard Review Plan.<sup>26</sup> Among many other differences, discussed in more detail below, the document demonstrates that the LTSP:

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<sup>24</sup> LAR 11-05, at 1.

<sup>25</sup> LAR 11-05, at 1.

<sup>26</sup> See PG&E Letter DCL-11-124, “Standard Review Plan Comparison Tables for License Amendment Request 11-05, ‘Evaluation Process for New Seismic Information and Clarifying the Diablo Canyon

- Uses less conservative “damping values” for certain integral plant structures, systems, and components (SSCs), resulting in a finding that over-predicts how much kinetic energy will be dissipated as the energy travels from the fault to the SSC itself;<sup>27</sup> and
- Uses relaxed seismic stress standards to determine the amount of seismic stress that certain SSCs can withstand.<sup>28</sup>

LAR 11-05 itself contains a summary of how the LTSP deviates from the Standard Review Plan criteria.<sup>29</sup>

4. The Staff Changes Its Mind That A License Amendment Is Necessary And Permits PG&E To Withdraw License Amendment Request 11-05

Initially, NRC Staff determined that the changes to Diablo Canyon’s license proposed in LAR 11-05 would weaken the plant’s safety requirements below acceptable standards. The Staff therefore internally proposed to deny the request to designate the Hosgri Evaluation as the plant’s Safe Shutdown Earthquake:

The staff finds PG&E license amendment request unacceptable based on two counts. . . . To evaluate the proposed HE as an SSE utilizing acceptance limits exceeding those specified in the SRP for the SSE is unacceptable from technical and regulatory perspectives. [First, t]here are implicit design margins for structures and components that are associated with the design for SSE. The proposed amendment explicitly reduces the accepted inherent margins in the design for SSE.

The second reason for not accepting the proposed LAR is that, despite the staff’s disagreement on the evaluation criteria proposed for the SSE as discussed above, PG&E stated that it has not completed its reevaluation of the Reactor Coolant System (RC) for

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Power Plant Safe Shutdown Earthquake,” ADAMS Accession No. ML11342A238 (Dec. 6, 2011), and attachments thereto (*hereinafter* “Standard Review Plan Comparison Tables”).

<sup>27</sup> Standard Review Plan Comparison Tables, encl. attachment 5, at 3.

<sup>28</sup> DPO, at 17.

<sup>29</sup> LAR 11-05, encl., at 18 *et seq.*

the seismic and [loss-of-coolant-accident] loads. . . . The RCS is a major part of ASME class 1 systems.<sup>30</sup>

Early in 2012 the Staff reversed course. Ignoring its earlier view that a license amendment request was “a necessary and appropriate step” for evaluating new seismic information, the Staff permitted—indeed, nearly invited—PG&E to withdraw LAR 11-05 and instead use an evaluation method to be selected in a non-public, informal proceeding.<sup>31</sup>

Following the filing of the LAR and the March 2011 accident at the Fukushima Dai-ichi plant in Japan, the newly created Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident (the Task Force or Fukushima Task Force) issued a report in which it made recommendations intended to insure the U.S. nuclear fleet could withstand earthquakes.<sup>32</sup> One of these recommendations was to “[o]rder licensees to reevaluate the seismic and flooding hazards at their sites.”<sup>33</sup> In implementing this recommendation, NRC issued two documents that PG&E contends permitted it to withdraw LAR 11-05: (1) a letter dated March 12, 2012, to all U.S. power reactor licensees requesting information necessary to support the Task Force’s

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<sup>30</sup> NRC, “Basis for DE Denial of Diablo Canyon 1&2 LAR 11-05,” at 3, ADAMS Accession No. ML13354B992.

<sup>31</sup> FoE determined not to petition the Commission to intervene in LAR 11-05 because, after LAR 11-05 was filed and remained pending, PG&E and the NRC Staff had properly committed to proceed through a public and transparent license amendment process in compliance with the Atomic Energy Act. Therefore, the grounds that gave rise to Petitioner’s objections in this matter did not arise until after LAR 11-05 was withdrawn and after Dr. Peck’s DPO was publicly released.

<sup>32</sup> The Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, “Recommendations for Enhancing Reactor Safety in the 21st Century,” (July 12, 2011), *available at* <http://pbadupws.nrc.gov/docs/ML1118/ML111861807.pdf>.

<sup>33</sup> *Id.* at 74.

evaluation (the “March 12 letter”),<sup>34</sup> and (2) a letter dated October 12, 2012, directing PG&E, in conducting its seismic study ordered in the March 12 letter, to compare the hypothetical Shoreline Earthquake against the largest hypothetical earthquake included within Diablo Canyon’s licensing basis—the DDE, which has a peak ground motion acceleration of 0.4 g (the “October 12 letter”).<sup>35</sup> The Staff directed PG&E to complete this study by March 2015.<sup>36</sup>

Less than two weeks after the issuance of the October 12 letter, PG&E withdrew the LAR, asserting that the actions required by these two documents would remedy the deficiencies in its operating license that PG&E had sought to remedy through the LAR. In its withdrawal letter, PG&E made four “regulatory commitments”:

- a. To update Diablo Canyon’s FSARU “to include the Shoreline scenario in accordance with the requirements of 10 CFR 50.71(e)”<sup>37</sup>;
- b. To update its LTSP “to state that PG&E will evaluate new seismic information consistent with the evaluation process defined in [the March 12 letter]”;
- c. To “use the double design earthquake for comparison with the reevaluated seismic hazard ground motion response spectrum”; and
- d. If new faults are discovered or information shows that the Shoreline fault is more capable than currently believed, to “provide the NRC

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<sup>34</sup> NRC Letter, “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 from the Fukushima Dai-Ichi Accident,” ADAMS Accession No. ML12053A340 (Mar. 12, 2012).

<sup>35</sup> NRC Letter, “Diablo Canyon Power Plant, Units Nos. 1 and 2 – NRC Review of Shoreline Fault (TAC Nos. ME5306 and ME5307),” ADAMS Accession No. ML 120730106 (Oct. 12, 2012).

<sup>36</sup> “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 from the Fukushima Dai-Ichi Accident” ADAMS Accession No. ML12053A340, encl. 1, at 9.

<sup>37</sup> 10 C.F.R. § 50.71(e) provides in relevant part: “Each person licensed to operate a nuclear power reactor . . . shall update periodically the final safety analysis report (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.”

with an interim evaluation that describes actions taken or planned to address the higher seismic hazard relative to the design basis, as appropriate, prior to completion of the evaluations requested in [the March 12 letter].”<sup>38</sup>

These regulatory commitments propose, in effect, (1) to amend the license without an opportunity for a public adjudicatory hearing called for by the Atomic Energy Act and NRC regulations, and (2) to allow PG&E to continue operating Diablo Canyon without complying with conditions in its operating license requiring assurance that safety-related elements will remain functional in the event of an earthquake.

As will be discussed below, PG&E was careful not to commit to amend its technical specifications, since such an action automatically requires a license amendment.<sup>39</sup> PG&E declined to promise such action, even though in License Amendment Request 11-05 the company recognized that incorporating a new method of seismic evaluation would require a change to the technical specifications.<sup>40</sup>

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<sup>38</sup> PG&E Letter, “Withdrawal of License Amendment Request 11-05, ‘Evaluation Process for New Seismic Information and Clarifying the Diablo Canyon Power Plant Safe Shutdown Earthquake,’” ADAMS Accession No. ML12300A105 (Oct. 25, 2012), encl., at 1.

<sup>39</sup> 10 C.F.R. § 50.59(c)(1).

<sup>40</sup> LAR 11-05, encl., at 2 (proposing two additions to Diablo Canyon’s technical specifications “administrative controls” programs).



5. The Staff Determines That The Task Force Recommendations And Other NRC Directives Clarify How PG&E Must Collect And Analyze New Seismic Information, Thus Agreeing With PG&E That A Public License Amendment Designating Such A Method Is Not Necessary

In an internal memorandum sent on November 19, 2012, the Staff took the position that recently issued documents had clarified NRC's "expectations for addressing new seismic information."<sup>41</sup> The memo concluded that:

The NRC's letter dated October 12, 2012, and the request for information dated March 12, 2012, provide guidance for assessing new seismic information and what PG&E is expected to do in the event that it becomes apparent that the new seismic information will lead to a [ground motion response spectrum] that is higher than the DDE.<sup>42</sup>

The memo also noted that in the "[l]onger term, it should be noted that the NRC Staff plans to address Recommendation 2.2 of the Japan Lessons Learned Near-Term Task Force," which recommends that the NRC "[i]nitiate rulemaking to require licensees to confirm seismic hazards and flooding hazards every 10 years and address any new and significant information[, and] [i]f necessary, update the design basis for systems, structures, and components important to safety to protect against the updated hazards."<sup>43</sup> Based on the March 12 and October 12 letters, and the expected implementation of the Task Force's Recommendation 2.2, the Staff concluded:

"Therefore, expectations related to *collection and assessment of new seismic hazards information*

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<sup>41</sup> Memo from Sher Bahadur, Deputy Director, Division of Policy and Rulemaking, Office of Nuclear Reactor Regulation, NRC, to Kriss M. Kennedy, Director, Division of Reactor Projects, Region IV, NRC, "Revised Response to Task Interface Agreement – Diablo Canyon Seismic Qualification Current Licensing and Design Basis, TIA 2011-010 (TIA 2012-012) (TAC Nos. ME9840 and ME9841)", ADAMS Accession No. ML12297A199 (Nov. 19, 2012).

<sup>42</sup> *Id.* at 2.

<sup>43</sup> *Id.* at 2.

would likely be addressed as part of this response.”<sup>44</sup> In effect, the memo recognized that Diablo Canyon’s licensing basis is being amended *de facto* to provide a method of evaluation for new seismic data.

Thus, ironically, the NRC Staff implemented the Fukushima Task Force’s recommendations, which were intended to “enhance U.S. reactor safety in the 21st century” following the Fukushima tragedy,<sup>45</sup> in such a way that it in fact *reduced* the safety of Diablo Canyon. Perversely, the NRC relied on the Task Force’s recommendations to allow PG&E to bypass the AEA’s public participation provision and to conduct an abbreviated seismic safety evaluation, thus permitting Diablo Canyon to continue to operate in the face of a critical and insufficiently analyzed seismic safety issue.

## II. SUMMARY OF ARGUMENT

At the time the Shoreline Fault was discovered, neither Diablo Canyon’s licensing basis nor NRC regulations contained any provision as to how PG&E was required to evaluate the newly discovered fault to insure that Diablo Canyon could continue to operate with an adequate margin of safety. The Atomic Energy Act and its implementing regulations require this information to be included in a plant’s licensing basis.<sup>46</sup> Recognizing the significance of these

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<sup>44</sup> *Id.* at 2 (emphasis added).

<sup>45</sup> “Recommendations for Enhancing Reactor Safety in the 21<sup>st</sup> Century,” at x.

<sup>46</sup> 10 C.F.R. § 50.59(c).

deficiencies, NRC acknowledged that a license amendment request was necessary in order to fill this gap in Diablo Canyon's licensing basis.<sup>47</sup>

Accordingly, PG&E filed LAR 11-05, which sought to amend Diablo Canyon's licensing basis by adding a method of evaluation for the Shoreline Fault and for other faults, should any be found in the future. The proposed method of evaluation included a set of assumptions to be employed in analyzing the new seismic data, requirements regarding how the newly discovered fault is to be characterized, the criteria by which PG&E would determine that the plant is sufficient to withstand an earthquake caused by the analyzed fault, and many other requirements.<sup>48</sup> By filing the LAR, PG&E correctly recognized that adding such provision to its licensing documents would require a license amendment, and could not be achieved through other, less formal means. Filing the LAR triggered the requirements of section 189a of the Atomic Energy Act (AEA or the Act), 42 U.S.C. § 2239(a)(1)(A), which requires the NRC to provide interested parties with an opportunity for a public hearing regarding the proposed license amendment.

Through LAR 11-05, PG&E proposed that it be permitted to evaluate the Shoreline Fault and other newly discovered seismic information under its Long Term Seismic Plan. PG&E proposed the LTSP as the appropriate evaluation method for two reasons: first, the LTSP and its associated Hosgri Evaluation permitted PG&E to use different methodologies, and less

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<sup>47</sup> See, e.g., NRC, "Summary of June 20, 2011, Pre-Licensing Meeting with Pacific Gas and Electric Company on Proposed License Amendment for a New Seismic and Design Evaluation Process (TAC Nos. ME5033 and ME5034)," ADAMS Accession No. ML111920567 (July 29, 2011), at 1-2; NRC, "Additional Branch Chief Comments Related to NCP 2012-001 With Annotations," ADAMS Accession No. ML12284A066 (Feb. 8, 2012).

<sup>48</sup> LAR 11-05, encl. at 11.

demanding assumptions and acceptance criteria than the Standard Review Plan criteria, which were used to designate the Design Earthquake and Double Design Earthquake—the hypothetical earthquakes that constitute the seismic design basis for Diablo Canyon. For example, the LTSP employs less conservative seismic assumptions in its evaluation, thereby artificially increasing the likelihood that the evaluation will result in a finding that Diablo Canyon can withstand the seismic risk posed by the Shoreline Fault; and, second, the LTSP required a comparatively less comprehensive analysis to insure that the plant could safely shut down in the event of an earthquake. The NRC’s seismic evaluation programs that were used in the original licensing of Diablo Canyon would have required a more comprehensive and much more rigorous evaluation. NRC itself has conceded that the ground motion from the Shoreline Fault would exceed the ground motion level of the Double Design Earthquake<sup>49</sup>—the greatest earthquake in Diablo Canyon’s licensing basis.<sup>50</sup>

Because of these deficiencies, the LTSP and its Hosgri Evaluation method are inadequate to insure that the plant is safe in light of the discovery of the Shoreline Fault. The Hosgri Evaluation and the LTSP were the result of a highly controversial compromise after the late discovery of the Hosgri Fault, which was intended to be a one-time exception from the Standard Review Plan methodologies used in Diablo Canyon’s licensing basis.<sup>51</sup> Use of the Hosgri

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<sup>49</sup> The Double Design Earthquake is also known as the Safe Shutdown Earthquake.

<sup>50</sup> NRC Letter, “Diablo Canyon Power Plant, Unit Nos. 1 and 2 – NRC Review of Shoreline Fault (TAC Nos. ME5306 and ME5307),” ADAMS Accession No. ML 120730106, at 4 (“The NRC recognizes that using the DDE as the basis of comparison will most likely result in the Shoreline fault and the Hosgri earthquake being reported as having greater ground motion than the SSE.”).

<sup>51</sup> Diablo Canyon’s Updated Final Safety Analysis Report states that the LTSP “does not alter the design bases for DCP.” FSARU, Section 2.5.

Evaluation and LTSP methods outside of their intended purposes poses a serious risk of harm to the public health and environment surrounding Diablo Canyon in the event of an earthquake.

In March 2012, while License Amendment Request 11-05 was still pending, the Staff abruptly decided to reconsider its determination that a license amendment was necessary to provide a new seismic evaluation method, and permitted PG&E to withdraw LAR 11-05.<sup>52</sup> As the basis for this decision, PG&E cited its ongoing effort to implement recommendations made by the Fukushima Task Force. In accordance with these recommendations, the Staff instructed PG&E to conduct an updated seismic review of Diablo Canyon.<sup>53</sup>

PG&E then withdrew LAR 11-05 on the grounds that the Staff's directive to conduct a seismic review of Diablo Canyon rendered the license amendment request superfluous. The NRC Staff has not challenged this assertion, even though the seismic review ordered by NRC is "distinct from the current design or licensing basis of operating plants."<sup>54</sup> The NRC Staff is thus attempting to amend *de facto* Diablo Canyon's license through an evaluation process that the Staff acknowledges is outside of the licensing basis.

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<sup>52</sup> NRC Letter, "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 from the Fukushima Dai-Ichi Accident," ADAMS Accession No. ML12053A340.

<sup>53</sup> This review is expected to be complete by March 2015.

<sup>54</sup> 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 the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident," ADAMS Accession No. ML14030A046 (Feb. 20, 2014), at 2.

By its sudden reversal, NRC Staff would foreclose the public process required by the AEA when an operating license is amended.<sup>55</sup> The AEA and its implementing regulations provide that any change to a “method of evaluation” used to establish a “safety analysis” requires an amendment to the plant’s operating license.<sup>56</sup>

Adding a new method of evaluation requires a change to the plant’s technical specifications.<sup>57</sup> Any change to a plant’s technical specifications, in turn, may be achieved only through a license amendment.<sup>58</sup> Rather than invoke the license amendment process required by the AEA and NRC regulations, the Staff is effectively seeking to make a *de facto* amendment to the Diablo Canyon license through an informal process, inaccessible to the public.

Moreover, the NRC Staff has failed to require PG&E to conduct the analysis necessary to show that the plant continues to be safe in light of the discovery of the Shoreline Fault. The Staff, relying on a report concluding that the seismic loading levels predicted for the Shoreline Fault and other faults, including the San Luis Bay and Los Osos faults, would not exceed the seismic loading levels predicted for the Hosgri Fault, determined that the plant could continue to be safely operated. But this finding is contradicted by the NRC Staff’s own admission that, due to the Shoreline Fault’s location within a quarter mile of the plant, a Shoreline earthquake could cause more extreme ground motion at the plant site than a Hosgri earthquake.<sup>59</sup>

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<sup>55</sup> See 42 U.S.C. § 2239(a)(1)(A).

<sup>56</sup> 10 C.F.R. § 50.59(c)(2)(viii).

<sup>57</sup> 10 C.F.R. § 50.36(c).

<sup>58</sup> 10 C.F.R. § 50.59(c)(1)(i).

<sup>59</sup> PG&E Report to NRC, “Report on the Analysis of the Shoreline Fault Zone, Central Coastal California,” ADAMS Accession No. ML110140400, at ES-2.

Moreover, the seismic safety of a nuclear power plant—its ability to shut down safely and remain shut down following an earthquake—depends on two major factors: (1) the energy transmitted from the earthquake; and (2) the ability of the plant structure and systems to continue to safely shut down the plant despite the shaking caused by the ground movement. Simply comparing the ground acceleration numbers for the Shoreline Fault and the Hosgri Fault therefore is not a sufficient basis for determining whether Diablo Canyon is safe to operate. Diablo Canyon’s licensing basis provides that the plant is certified to withstand an earthquake of up to 0.4 g—significantly less than the potential ground acceleration of the Shoreline, San Luis Bay, or Los Osos faults. Therefore, a determination that seismic loading levels from the Shoreline Fault are no more than those of the Hosgri Fault does not satisfy either the terms of Diablo Canyon’s operating license requirements or Commission regulations requiring that each plant be certified to be able to withstand the maximum potential earthquake that can occur at the plant. The Staff’s cavalier reliance on the HE and LTSP was challenged by the NRC official bearing the most direct responsibility to assure the safety of Diablo Canyon—Dr. Michael Peck, at the time the NRC Senior Resident Inspector for the plant.<sup>60</sup> Dr. Peck was so concerned by the Staff approach to the discovery of the Shoreline Fault that he took the highly unusual step of filing a Differing Professional Opinion (DPO), detailing his profound disagreement with NRC’s handling of Diablo Canyon’s seismic issues and recommending that the plant be shut down until it could be determined that it could operate safely.<sup>61</sup>

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<sup>60</sup> Dr. Peck is currently a Senior Reactor Instructor at NRC’s Technical Training Center.

<sup>61</sup> DPO, at 3.

Dr. Peck demonstrated that evaluating the Shoreline Fault and other nearby faults under the methodologies and assumptions of the LTSP and HE is insufficient to show that the plant is operating with an adequate margin of seismic safety. Among the inadequacies pointed out by Dr. Peck are the following:

- Use of the HE and LTSP evaluative methodologies fails to demonstrate that the plant can withstand an earthquake caused by the Shoreline, San Luis Bay, and Los Osos faults.<sup>62</sup>
- Use of the HE and LTSP methods “over-predicts” the performance of Diablo Canyon’s structures, systems, and components when compared to methods prescribed by the plant’s Current Licensing Basis, thus leading to a deceptively optimistic picture of the plant’s seismic safety.<sup>63</sup>
- The HE and LTSP methods are not approved for use in a seismic safety analysis.<sup>64</sup>
- Discovery of the Shoreline Fault “resulted in a condition outside of the bounds of the existing Diablo Canyon design basis and safety analysis.”<sup>65</sup>
- Allowing PG&E to demonstrate that the plant can continue to safely operate “independent of existing facility design bases and safety analyses requirements [would] establish[] a new industry precedent.”<sup>66</sup>
- PG&E may not simply add the Shoreline “scenario” to the plant’s existing licensing basis because such a change triggers NRC regulations that require an amendment to the plant’s license.<sup>67</sup>
- The Staff failed to address adequately the risk posed by the San Luis Bay and Los Osos faults, each of which is “capable of producing ground motions in excess of the current plant SSE design basis.”<sup>68</sup>

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<sup>62</sup> *Id.* at 38.

<sup>63</sup> *Id.* at 3.

<sup>64</sup> *Id.*

<sup>65</sup> *Id.*

<sup>66</sup> *Id.*

<sup>67</sup> *Id.* at 2.

<sup>68</sup> *Id.*



For these reasons, Dr. Peck forcefully contends that “[c]ontinued reactor operation outside the bounds of the NRC-approved safety analyses *challenges the presumption of nuclear safety*.”<sup>69</sup>

The Staff thus embarked upon 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. The Staff’s proposal—a *de facto* license amendment—is inadequate to insure that Diablo Canyon can withstand an earthquake caused by a fault that stands only 300 meters from the plant’s intake structure and that may be capable of producing a magnitude 7.5 earthquake.<sup>70</sup>

Finally, it is worth noting that, given the surrounding seismic features that have been discovered since PG&E received its construction permits in 1968, the Commission almost certainly would not now permit a nuclear power plant to be built or operated at the Diablo Canyon site. After discovery of the Hosgri Fault, PG&E was permitted to analyze the fault using a controversial one-time exception from its licensing basis. The NRC would be unlikely today to allow the use of this controversial methodology given the multiple faults now known to pose risks to the Diablo Canyon plant.

Petitioner thus requests to intervene in the ongoing *de facto* license amendment proceeding outlined above and requests that the proceeding be conducted with a public hearing

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<sup>69</sup> *Id.* at 3 (emphasis added).

<sup>70</sup> PG&E’s preliminary report on the Shoreline Fault concluded that the fault could produce a magnitude 6.5 earthquake. See PG&E Report to NRC, “Report on the Analysis of the Shoreline Fault Zone, Central Coast California,” ADAMS Accession No. ML110140400, at ES-2. Further study of the fault indicates that it could generate a magnitude 7.2-7.5 earthquake. See, e.g., Hardebeck, J, Geometry and Earthquake Potential of the Shoreline Fault, Central California,” *Bulletin of the Seismological Society of America*, Vol. 103, No. 1, pp. 447–462, at p. 458, February 2013, doi: 10.1785/0120120175.

in compliance with section 189a of the AEA, 42 U.S.C. § 2239(a)(1)(A). Such a hearing will insure that the Commission obtains the benefit of the testimony of Petitioner's witnesses, and will provide other interested parties with their statutorily afforded right to participate in the license amendment process. At an adjudicatory hearing, Petitioner's experts would show that use of the HE and LTSP methods to evaluate the Shoreline Fault, and the potentially related San Luis Bay and Los Osos faults, is inadequate to insure that Diablo Canyon can continue to operate with an adequate margin of seismic safety.

Petitioner further requests that PG&E be ordered to suspend operations at Diablo Canyon pending conclusion of the license amendment process described above. The heart of the AEA, section 101, 42 U.S.C. § 2131, and 10 C.F.R. § 50.10, make it unlawful to operate a nuclear power plant except in accordance with a duly issued operating license. Diablo Canyon's operating license itself provides that the Commission "licenses" PG&E to "operate the facility . . . in accordance with the procedures and limitations set forth in this license."<sup>71</sup> It follows that where PG&E is unable to comply with the terms of its operating license, Diablo Canyon cannot be lawfully operated. The NRC therefore should order PG&E to suspend operations at Diablo Canyon pending conclusion of the license amendment proceeding.

The NRC has on a number of occasions in the past ordered a licensee to suspend reactor operations due to a licensee's failure to adequately evaluate seismic risk. In 1977, following discovery of a seismic fault near the General Electric Test Reactor near Pleasanton, California, that was demonstrated to be capable of causing ground motion in excess of the plant's design,

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<sup>71</sup> Diablo Canyon Nuclear Power Plant, Unit 1, Operating License, Condition 2(B)(1), ADAMS Accession No. ML053140349.

the NRC ordered the plant to be placed in a cold shutdown condition and ordered GE to show cause why suspension of activities should not be continued.<sup>72</sup> In 1979, the NRC ordered five reactors to suspend operations after it discovered that faulty inputs had been used to analyze stress levels on piping components at the reactors.<sup>73</sup> In 1982, after it became apparent that the now-shuttered San Onofre Nuclear Generating Station might no longer be able to meet its original 0.5 g design basis, the NRC ordered the plant to suspend operations until certain modifications were completed and the NRC approved restart.<sup>74</sup>

For the reasons outlined above, PG&E is unable to operate Diablo Canyon in accordance with the terms of its license. Diablo Canyon therefore must suspend operations pending (1) conclusion of the process to amend the plant's operating license to provide a method to evaluate new seismic data, including the Shoreline Fault, and (2) a demonstration that Diablo Canyon is able to be safely shut down following the occurrence of potential earthquakes that could affect the plant, including an earthquake occurring on the Shoreline Fault.

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<sup>72</sup> See *General Elec. Co.* (Vallecitos Nuclear Center—General Electric Test Reactor), LBP-82-64, 16 NRC 596, 600-01 (1982).

<sup>73</sup> See NRC, "Information Notice No. 79-06, Stress Analysis of Safety-Related Piping," (Mar. 22, 1979), available at <http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/1979/in79006.html>. The affected reactors were Beaver Valley Unit 1, Maine Yankee, FitzPatrick, and Surry Units 1 and 2. *Id.*

<sup>74</sup> *Southern California Edison Co. and San Diego Gas & Electric Co. (San Onofre Nuclear Generating Station, Unit No. 1); Order Confirming Licensee Commitments on Seismic Upgrading*, 47 Fed. Reg. 36,058, 36,059 (Aug. 18, 1982).

### III. LEGAL STANDARDS REGARDING ADMISSIBILITY OF CONTENTIONS

Commission regulations require that an admissible contention include (1) a specific statement of the legal or factual issue proposed; (2) a brief explanation of its basis; (3) a demonstration that the issue is within the scope of the proceeding; (4) a demonstration that the issue is material to the findings the NRC must make to support the action involved in the proceeding; (5) a concise statement of the alleged facts or expert opinions; and (6) sufficient information to show that a genuine dispute exists with regard to a material issue of law or fact.<sup>75</sup> This standard “does not call upon the intervenor to make its case at [the contention] stage of the proceeding, but rather to indicate what facts or expert opinions, be it one fact or opinion or many, of which it is aware at that point in time which provide the basis for its contention.”<sup>76</sup> “The requirement generally is fulfilled when the sponsor of an otherwise acceptable contention provides a brief recitation of the factors underlying the contention or references to documents and texts that provide such reasons.”<sup>77</sup>

In addition, a contention of “omission” that focuses on the absence of a required analysis in the application is admissible and will not be deemed speculative because of any lack of detail

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<sup>75</sup> 10 C.F.R. § 2.309(f).

<sup>76</sup> *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), LBP-06-23, 64 NRC 257, 356 (2006) (internal quotation marks omitted).

<sup>77</sup> *Id.* (internal quotation marks and footnotes omitted).

regarding the potential content of the missing information.<sup>78</sup> Indeed, “[a] contention may be plausible enough to meet the admission standards even if it is ultimately denied on the merits.”<sup>79</sup>

#### IV. CONTENTIONS

##### CONTENTION 1

BECAUSE NRC IS CONDUCTING A *DE FACTO* LICENSE AMENDMENT PROCEEDING THAT HAS SIGNIFICANT SAFETY IMPLICATIONS, PETITIONER IS ENTITLED TO A PUBLIC HEARING UNDER SECTION 189A OF THE ATOMIC ENERGY ACT.

##### Bases For Contention

1. Section 189a of the Atomic Energy Act requires, “[i]n any proceeding under [the Act], for the . . . amending of any license . . . , the Commission shall grant a hearing upon the request of any person whose interest may be affected by the proceeding, and shall admit any such person as a party to such proceeding.”<sup>80</sup> The AEA also makes it “unlawful . . . for any person within the United States to . . . use . . . any utilization . . . facility except under and in accordance with a license issued by the Commission.”<sup>81</sup> As stated by an Atomic Safety and Licensing Board in a similar recent case, “[i]t is imperative that the terms of a reactor

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<sup>78</sup> *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 and 3), LBP-08-13, 68 NRC 43, 86, n.194 (2008).

<sup>79</sup> *Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-06-20, 64 NRC 131, 160 (2006), *rev'd in part*, CLI-07-16, 65 NRC 371 (2007).

<sup>80</sup> 42 U.S.C. § 2239(a)(1)(A).

<sup>81</sup> 42 U.S.C. § 2131. 10 C.F.R. § 50.2 defines “utilization facility” to include a commercial nuclear power reactor.

operating license be clear and unambiguous, and also that a licensee scrupulously adhere to those terms.”<sup>82</sup>

2. When the NRC authorizes activity that is at odds with the requirement under 42 U.S.C. § 2131 that a facility be operated “in accordance with” its operating license, such authorization is considered a *de facto* license amendment. The Commission in *Cleveland Electric Illuminating Co.* summarized the standard used to determine whether there has been a *de facto* license amendment:

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.<sup>83</sup>

3. Stated another way by the U.S. Court of Appeals for the First Circuit, “by its nature a license is presumptively an *exclusive*—not an *inclusive*—regulatory device. . . . Regulatory conduct

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<sup>82</sup> *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), LBP-13-07, ASLBP No. 13-924-01-CAL-BD01, slip op. at \*23, *vacated by* 2013 WL 6384599 (Dec. 5, 2013). Although the Commission subsequently vacated the Board’s decision in *Southern California Edison*, the Commission was careful to note that in vacating the ruling it did “not intimate any opinion on [the opinion’s] soundness,” but was vacating in conformance with the Commission’s past practices. *Southern California Edison Co.*, 2013 WL 6384599, at 4 n.31. The Commission stated that the ASLB opinion could be cited in future proceedings:

Regardless of vacatur, the [ASLB] decision is an agency record, and will not be excised from the public view. Like other NRC decisions that have been vacated, LBP-13-7 is, and will be, available to the public via the ADAMS system, and we expect this decision to be published as part of NUREG-0750, a compilation of Commission and Board decisions. Future litigants can cite the decision as support for an argument; we or a licensing board then may consider whether such an argument is persuasive.

*Id.* at 4 (footnotes omitted).

<sup>83</sup> *Cleveland Elec. Illuminating Co.* (Perry Nuclear Power Plant), CLI-96-13, 44 NRC 315, 326-27 (1996) (footnotes omitted).

which is neither delineated, nor reasonably encompassed within delineated categories of authorized conduct, presumptively remains unlicensed.”<sup>84</sup> NRC’s actions constitute a *de facto* license amendment when they authorize a licensee to “engage in [activities] beyond the ambit of [its] original license.”<sup>85</sup>

4. Section 50.59 requires a licensee, in certain circumstances, to request an amendment before it may “make changes in the procedures as described in the [FSARU].”<sup>86</sup> A license amendment is required if the proposed change in procedure would:

- (i) Result in more than a minimal increase in the frequency of occurrence of any accident previously evaluated in the [FSARU];
- (ii) Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety previously evaluated in the [FSARU];
- (iii) Result in more than a minimal increase in the consequences of an accident previously evaluated in the [FSARU];
- (iv) Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the [FSARU];
- (v) Create a possibility for an accident of a different type than any previously evaluated in the [FSARU];

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<sup>84</sup> *Citizens Awareness Network v. Nuclear Regulatory Comm’n*, 59 F.3d 284, 294 (1st Cir. 1995).

<sup>85</sup> *Id.*

<sup>86</sup> 10 C.F.R. § 50.59(c)(1). The FSAR is part of the application for an operating license. It contains “a description of the facility; the design bases and limits on operation; and the safety analysis for the structures, systems, and components (SSC) and of the facility as a whole.” *Changes, Tests, and Experiments: Proposed Rule*, 63 Fed. Reg. 56,098, 56,099 (Oct. 21, 1998). “When a plant is licensed, the NRC states in its Safety Evaluation Report (SER) why it found each FSAR analysis acceptable.” *Id.* Licensees must periodically update their FSARs to reflect changes to the facility “so that the [FSARU] remains a *complete* and accurate description and analysis of the facility.” *Id.* (emphasis added).

(vi) Create a possibility for a malfunction of an SSC important to safety with a different result than any previously evaluated in the [FSARU];

(vii) Result in a design basis limit for a fission product barrier as described in the [FSARU] being exceeded or altered; or

(viii) Result in a departure from a method of evaluation described in the [FSARU] used in establishing the design bases or in the safety analyses.<sup>87</sup>

These criteria “are appropriate guides for determining whether [a licensee’s action] requires a license amendment, thereby converting [the action] into a *de facto* license amendment proceeding.”<sup>88</sup>

5. Additionally, *even if none of these criteria has been met*, a licensee must request a license amendment if the proposed change in procedure requires a change to the technical specifications incorporated in the license.<sup>89</sup>

6. By prescribing a method by which PG&E is to analyze the Shoreline Fault and other new seismic information, where Diablo Canyon’s Operating License did not prescribe such a method, NRC Staff would alter Diablo Canyon’s license to grant PG&E greater operating

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<sup>87</sup> 10 C.F.R. § 50.59(c)(2).

<sup>88</sup> *Southern California Edison Co.*, LBP-13-07, ASLBP No. 13-924-01-CAL-BD01, at 23.

<sup>89</sup> 10 C.F.R. § 50.59(c)(1)(i). 10 C.F.R. § 50.59(c)(1) provides in full:

A licensee may make changes in the facility as described in the [FSARU], make changes in the procedures as described in the [FSARU], and conduct tests or experiments not described in the [FSARU] *without* obtaining a license amendment pursuant to § 50.90 *only if*:

(i) A change to the technical specifications incorporated in the license is not required, *and*

(ii) The change, test, or experiment does not meet any of the criteria in paragraph (c)(2) of this section.

(Emphases added).



authority than currently granted by the license. Thus there is a *de facto* license amendment proceeding underway with respect to the seismic licensing basis for Diablo Canyon.<sup>90</sup>

Petitioner requests that the Commission recognize that a license amendment is needed to authorize continued operation of Diablo Canyon, order a public hearing be held regarding the license amendment, as provided in section 189a of the AEA, and empanel an Atomic Safety and Licensing Board to conduct the hearing.

### **Supporting Evidence**

A. *By Allowing PG&E To Use Methodologies And Assumptions Not Prescribed In The Operating License To Analyze New Seismic Data, NRC Staff Seek To De Facto Amend Diablo Canyon's License, Sidestepping The Opportunity For A Public Adjudicatory Hearing Guaranteed Petitioner By Section 189a Of The Atomic Energy Act.*

7. The 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 in violation of section 189a of the Atomic Energy Act, 42 U.S.C. § 2239(a)(1)(A). That subparagraph requires the Commission to provide an opportunity for a hearing to any interested person in any license amendment proceeding. Rather than proceeding through the required license amendment process, the NRC Staff proposes to *de facto* amend the license through a combination of regulatory commitments and Staff directives, while avoiding a public adjudicatory hearing and other licensing proceeding requirements. In short, NRC

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<sup>90</sup> This Petition does not request that NRC initiate an enforcement action pursuant to 10 C.F.R. § 2.206. Rather, by unlawfully authorizing PG&E to "engage in [activities] beyond the ambit of [its] original license," *Citizens Awareness Network*, 59 F.3d at 295, NRC has engaged in a *de facto* license amendment proceeding. In light of the greater operating authority granted to PG&E by NRC, the proper remedy is to order a public hearing as required by section 189a of the Atomic Energy Act. See *Citizens Awareness Network*, 59 F.3d at 295-96; *Perry*, 44 NRC at 319.

Staff is attempting to fill a gap in the terms of PG&E's licensing basis without going through the required license amendment proceeding.

i. Diablo Canyon's Licensing Basis Does Not Prescribe How PG&E Is To Evaluate Newly Discovered Seismic Data

8. PG&E's withdrawal of its License Amendment Request 11-05 is an acknowledgement that the March 12 and October 12 letters are part of a *de facto* amendment proceeding relating to Diablo Canyon's operating license. PG&E filed a LAR because the current license does not provide instructions for how to analyze new seismic information to assure the plant can safely shut down in the event of the greatest foreseeable earthquake. The March 12 and October 12 NRC Staff letters order PG&E to use *specific* methodologies and assumptions to analyze new seismic data. As "[r]egulatory conduct which is neither delineated, nor reasonably encompassed within delineated categories of authorized conduct, presumptively remains unlicensed,"<sup>91</sup> any new method of seismic evaluation can only be prescribed through a license amendment.

ii. The NRC Staff And PG&E Agreed That A License Amendment Is Necessary To Determine How PG&E Must Evaluate New Seismic Data

9. As shown below, PG&E and the NRC Staff each took the position after the Shoreline Fault was discovered that a license amendment would be needed to provide proper instructions to PG&E on the methodologies and assumptions that must be used by PG&E to analyze the safety of Diablo Canyon in light of the newly discovered faults.

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<sup>91</sup> *Citizens Awareness Network*, 59 F.3d at 294.

10. In a Commission document summarizing a meeting between PG&E officials and the Staff held before PG&E filed the License Amendment Request, PG&E admitted that it could not make the changes it wanted to make without an amendment to its license:

The NRC Staff asked, given the information that PG&E states is available regarding the seismic design of [Diablo Canyon], why PG&E requested NRC approval rather than make this change under 10 CFR 50.59. PG&E stated that some of the methods used for the seismic reviews could not be reconciled under 10 CFR 50.59.<sup>92</sup>

11. At the same meeting, Staff members' comments were appropriately cautious about allowing a drastic change to the seismic qualification bases of Diablo Canyon's license without understanding in more detail how Diablo Canyon's license would change:

Mr. Kamal Manoly of the NRC staff noted that he believes this is a first of a kind request as he is not aware of any other instance where a licensee has requested to change its SSE. As such, Mr. Manoly stated that the amendment needed to describe where the methodologies and acceptance limits used in the evaluation of structures and components for the HE are deviating from the applicable provisions in the Standard Review Plan (SRP).<sup>93</sup> Mr.

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<sup>92</sup> NRC, "Summary of June 20, 2011, Pre-Licensing Meeting with Pacific Gas and Electric Company on Proposed License Amendment for a New Seismic and Design Evaluation Process (TAC Nos. ME5033 and ME5034)," ADAMS Accession No. ML111920567, at 1-2.

<sup>93</sup> The Standard Review Plan, discussed at more length below, is "the integrated result of the hundreds of conscious choices made by the staff and by the nuclear industry in developing design criteria and design requirements for nuclear power plants" and "the most definitive basis available for specifying the NRC's interpretation of an acceptable level of safety for light-water reactor facilities." NRC, NUREG-0800, "Standard Review Plan" (Rev. 2, Mar. 2007).

Manoly stated that a table providing the deviations from the SRP for the HE should be provided with this LAR.<sup>94</sup>

12. PG&E's License Amendment Request precipitated a disagreement within NRC Staff over whether a license amendment, or an enforcement action, was called for. Dr. Michael Peck, the NRC Senior Resident Inspector for Diablo Canyon, submitted to the NRC a formal "Non-Concurrence," which asserted that the Staff had failed to insure that Diablo Canyon was operating with an adequate margin of seismic safety.<sup>95</sup> Dr. Peck argued that the Commission should issue a violation charging PG&E with failing to insure that the plant was operable following discovery of the Shoreline Fault.
13. According to Commission procedure, Dr. Peck's supervisor, Branch Chief Neil O'Keefe, submitted a response to the Non-Concurrence. O'Keefe disagreed with Peck's recommended action, arguing that PG&E had correctly requested a license amendment. Significantly, neither Dr. Peck nor Mr. O'Keefe suggested that Diablo Canyon could be allowed to continue operating outside of its licensing basis.
14. In his comments, Mr. O'Keefe asserted that the PG&E License Amendment Request then pending before the Commission was sufficient to address Dr. Peck's concerns. Mr. O'Keefe stated:

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<sup>94</sup> NRC, "Summary of June 20, 2011, Pre-Licensing Meeting with Pacific Gas and Electric Company on Proposed License Amendment for a New Seismic and Design Evaluation Process (TAC Nos. ME5033 and ME5034)," ADAMS Accession No. ML111920567, at 2.

<sup>95</sup> NRC, Dr. Michael Peck, Non-Concurrence NCP-2012-001, ADAMS Accession No. ML120450843 (Jan. 26, 2012) (*hereinafter* "Non-Concurrence"). The Non-Concurrence Process and Differing Professional Opinion Program provide avenues for NRC employees to express their disagreement with NRC documents or actions. *See* <http://www.nrc.gov/about-nrc/values.html> (describing the programs and their objectives).

[T]he generic process for performing an operability evaluation requires a clear current licensing basis that directly relates to the non-conforming condition that is being analyzed. The actual seismic current licensing basis did not provide a way to evaluate new information that becomes available. Therefore, the licensee has proposed a methodology to perform the full operability evaluation to the NRC as a license amendment request, and the staff is evaluating the best way to proceed.<sup>96</sup>

15. In other comments on Dr. Peck's Non-Concurrence, Mr. O'Keefe reiterated that any method of evaluation of new seismic data would have to be submitted for Commission approval in a formal license amendment request:

The staff position is that the license amendment request was a *necessary and appropriate step* to clarify and resolve the appropriate basis of comparison to be used in the operability assessment.<sup>97</sup>

Again and again, Mr. O'Keefe remarked upon why the license amendment process was the proper way to determine a method of evaluation for the new seismic data:

[Dr. Peck] has the opinion that the new seismic information should be evaluated under the DDE using an operability determination. The staff position was that this question would be addressed in the license amendment request to clarify the CLB requirements to be used as a basis for comparison.

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There is no specific regulatory requirement to specify how new information needs to be addressed. Since DCPD has three earthquakes in the CLB and none could be considered to bound all

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<sup>96</sup> Non-Concurrence, at Section B.

<sup>97</sup> NRC, "Additional Branch Chief Comments Related to NCP 2012-001 With Annotations," ADAMS Accession No. ML12284A066 (Feb. 8, 2012).

circumstances, the staff position is that NRC approval is needed to decide how to evaluate the new ground motion information.<sup>98</sup>

16. Thus, prior to the filing of LAR 11-05, both PG&E and the Commission Staff agreed that Diablo Canyon's licensing basis did not address how to evaluate new seismic data, and both parties acknowledged that a license amendment request was the necessary and proper procedure by which the parties could designate a method of evaluation for new seismic data. Given that a nuclear power plant operating license is "by its nature . . . presumptively an *exclusive*—not an inclusive—regulatory device,"<sup>99</sup> any attempt to fill that gap in the plant's licensing basis must be accomplished through a license amendment.
17. The NRC Staff then inexplicably changed its mind, determining that any gap in its licensing basis could be filled through an informal process rather than through a Section 189a license amendment, thus shutting out the public. By attempting to amend the license through an extra-license method of evaluation, the Staff violated section 189a of the AEA.

B. *A New Seismic Evaluation Method Requires Changes To Diablo Canyon's FSARU, Which Under NRC's Regulations Requires A License Amendment*

18. NRC regulations at 10 C.F.R. § 50.59 set forth a procedure for licensees to follow to determine whether a license amendment is necessary.<sup>100</sup> If any of the factors are present, the proposed change must be submitted in a license amendment request. These factors may also be used to establish whether there has been a *de facto* license amendment. "The standards in

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<sup>98</sup> *Citizens Awareness Network*, 59 F.3d at 294.

<sup>99</sup> *Id.*

<sup>100</sup> Friends of the Earth has not had access to PG&E's analyses of these issues, if any have been performed, under § 50.59, and therefore is not currently challenging in this petition the adequacy of any such analyses.

section 50.59 . . . have the imprimatur of the Commission and therefore, *a fortiori*, are appropriate guides for determining whether [a licensee’s action] requires a license amendment, thereby converting [the action] into a *de facto* license amendment proceeding.”<sup>101</sup>

19. PG&E cannot implement the proposed change to the facility without a license amendment because the proposed change to Diablo Canyon’s operating license—to incorporate a new method of seismic evaluation—would clearly “[r]esult in a departure from a method of evaluation described in the [FSARU] used in establishing the design bases or in the safety analyses.” Section 50.59 provides further guidance as to this factor:

Departure from a method of evaluation described in the [FSARU] used in establishing the design bases or in the safety analyses means:

- (i) Changing any of the elements of the method described in the [FSARU] unless the results of the analysis are conservative or essentially the same; *or*
- (ii) Changing from a method described in the FSAR to another method unless that method has been approved by NRC for the intended application.<sup>102</sup>

20. Setting forth an entirely new evaluation method or altering an existing evaluation method for new seismic information satisfies subparagraph (i) above. Designating a new method for evaluating new seismic data represents a clear departure from the standard method of evaluation described in the FSARU used in establishing the plant’s seismic safety analysis.

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<sup>101</sup> *Southern California Edison*, LBP-13-07, at 23.

<sup>102</sup> 10 C.F.R. § 50.59(a)(2) (emphasis added).

Indeed, the change would amount to the addition of an entirely new method for evaluating new seismic data.

21. The exception to subparagraph (i) of section 50.59(a)(2), which provides that a licensee need not seek a license amendment if the proposed change to the method of analysis would lead to “results [that] are conservative or essentially the same,” does not apply. It cannot be said that the results of the new evaluation method would be “conservative or essentially the same” because there exists no previous evaluation method in the existing license for comparison; the new evaluation method is the first such evaluation program incorporated in Diablo Canyon’s license. To the extent that the new evaluation method incorporates the Hosgri “methodologies, assumptions, and acceptance criteria,”<sup>103</sup> it will produce results that are less protective, not “conservative or essentially the same” as the standard method of analysis.

C. *A New Seismic Evaluation Method Requires Changes To Diablo Canyon’s Technical Specifications, Which Under Commission Regulations Requires An Amendment To Diablo Canyon’s Licensing Basis*

22. If the Staff were to designate a new seismic evaluation method, Commission regulations require that Diablo Canyon’s technical specifications be changed accordingly. The regulations further require that any change to a plant’s technical specifications be made through a license amendment.<sup>104</sup>

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<sup>103</sup> DPO, at 20.

<sup>104</sup> 10 C.F.R. §§ 50.36(b), 50.36(c)(5), 50.59(c)(1).



i. Commission Regulations Provide That Any Change To Diablo Canyon's Technical Specifications Must Be Achieved Through A License Amendment

23. Each operating license is required to include plant-specific technical specifications.<sup>105</sup> As the Commission has noted, “[b]ecause technical specifications are an integral part of an operating license, changes to technical specifications require a license amendment.”<sup>106</sup>

24. Specifically, 10 C.F.R. § 50.59 provides that a licensee may change its FSARU without a formal license amendment “only if . . . [1] a change to the plant’s technical specifications incorporated in the license<sup>107</sup> is not required, *and* [2] the change . . . does not meet any of the criteria in paragraph (c)(2) of this section.”<sup>108</sup> In other words, PG&E *must* seek a license amendment if any change to the technical specifications is necessary. Even if a proposed change to a plant’s FSARU does not require a change to the plant’s technical specifications, a license amendment is nonetheless required if one or more of the eight criteria of 50.59 (set forth above) is triggered.

ii. PG&E And NRC Staff Each Have Admitted That Determining A Method Of Evaluation For A Newly Discovered Seismic Fault Requires A Change To Diablo Canyon's Technical Specifications

25. In LAR 11-05, PG&E *specifically recognized* that the changes it sought to make to Diablo Canyon’s license required changes to the plant’s technical specifications.<sup>109</sup> In the cover

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<sup>105</sup> 10 C.F.R. § 50.36(b).

<sup>106</sup> *Perry*, 44 NRC at 319.

<sup>107</sup> Diablo Canyon’s operating license, at Item 2(C)(2), explicitly incorporates the technical specifications into the operating license.

<sup>108</sup> 10 C.F.R. § 50.59(c)(1) (emphasis added).

<sup>109</sup> LAR 11-05, at 1, encl., attachment 1, at 1-2.

letter accompanying LAR 11-05, PG&E described the request: “The enclosed license amendment request proposes to revise the current licensing basis, as described in the [FSARU] and *Technical Specifications*, to provide requirements for the actions, evaluations, and reports necessary when PG&E identifies new seismic information relevant to the design and operation of [Diablo Canyon].”<sup>110</sup> PG&E included in the license amendment request a list of proposed changes to Diablo Canyon’s technical specifications that would have to be made to effect the proposed license amendment.<sup>111</sup>

26. Despite its earlier position, the Staff now takes the position that no such changes to the technical specifications are necessary. Both NRC Staff and PG&E now contend that the seismic reevaluation ordered by the Fukushima Task Force may be designated as the new seismic evaluation method *without* altering the plant’s technical specifications.<sup>112</sup> PG&E’s change of position is pure opportunism; NRC’s position on this point violates NRC regulations.<sup>113</sup>

27. NRC Staff’s current endorsement of PG&E’s regulatory commitments and use of the Hosgri earthquake as a basis for comparison in determining whether the plant is safe to withstand an earthquake caused by the Shoreline, San Luis Bay, or Los Osos faults amounts to a *de facto* license amendment. The Staff’s attempt to escape the procedures mandated by the

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<sup>110</sup> LAR 11-05, at 1 (emphasis added).

<sup>111</sup> LAR 11-05, encl. attachment 1.

<sup>112</sup> See, e.g., NRC Letter, “Diablo Canyon Power Plant, Units Nos. 1 and 2 – NRC Review of Shoreline Fault (TAC Nos. ME5306 and ME5307),” ADAMS Accession No. ML 120730106.

<sup>113</sup> See 10 C.F.R. §§ 50.36(b), 50.36(c)(5), 50.59(c)(1).

AEA is particularly dubious, in light of the fact that both PG&E and NRC recognized earlier that a change to the plant's technical specifications was required to effect LAR 11-05.

iii. PG&E Cannot Determine A Method Of Evaluation For New Seismic Data Without Amending Diablo Canyon's Technical Specifications

28. Leaving Diablo Canyon's technical specifications unaltered in this case violates regulations requiring certain information, including an evaluation method for new seismic data, to be incorporated into the plant's technical specifications. 10 C.F.R. § 50.36(c) provides that the technical specifications document "*will* include items in [certain] categories" listed in the regulation.<sup>114</sup> The Commission has noted that "[i]f a procedural or other requirement meets any one of the criteria [in 10 C.F.R. § 50.36], it *must* be retained in the technical specifications."<sup>115</sup>
29. One of those categories is "administrative controls," which are defined as "the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner."<sup>116</sup>
30. A program setting forth a method of evaluation for new seismic data satisfies this definition. The evaluation of newly discovered seismic data—which methodologies and assumptions to employ in analyzing a fault—is clearly necessary to assuring the safe operation of Diablo Canyon.

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<sup>114</sup> See 10 C.F.R. § 50.36(c) (emphasis added);

<sup>115</sup> *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Stations, Units 2 and 3), CLI-01-24, 54 NRC 349, 352 (2001) (emphasis added).

<sup>116</sup> 10 C.F.R. § 50.36(c)(5).

iv. In License Amendment Request 11-05, PG&E Proposed Adding Two New Sections To Diablo Canyon’s Technical Specifications

31. Recognizing that determining how it would evaluate newly discovered seismic faults required a change to the plant’s technical specifications, PG&E in LAR 11-05 proposed to add two new sections to Chapter 5 of the technical specifications, titled “Administrative Controls.” These two proposed sections were the only modifications to the plant’s technical specifications proposed by LAR 11-05.
32. The first proposed section, titled “Long Term Seismic Program,” is reproduced below. Confirming beyond dispute that the proposed change fits the definition of “administrative controls” in § 50.36(c)(5), PG&E requested that this section be added to the technical specifications, Chapter 5, titled “Administrative Controls.”<sup>117</sup>

**Insert 5.5.20**

5.5.20 Long Term Seismic Program

This program provides ongoing review and evaluation of new seismic information and associated methodologies. The program shall include the following:

- a. A staff to keep abreast of new geological, seismic, and seismic engineering information and evaluate it with respect to its significance to DCPD;
- b. Operation of a strong-motion accelerometer array and the coastal seismic network;
- c. Verification that plant seismic margins remain acceptable for plant additions and modifications when checked against insights and knowledge gained from the Long Term Seismic Program, as identified in FSARU Section 3.7.6;

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<sup>117</sup> See Technical Specifications for Diablo Canyon Power Plant, Units 1 and 2, ADAMS Accession No. ML053140349 (Rev. Feb. 27, 2014).

- d. Deterministic seismic margin acceptance criteria for operability determinations;
- e. Peer review process requirements for seismic probabilistic risk assessment revisions;
- f. Peer review processes requirements for seismic model or methodology revisions; and
- g. Minimum requirements for the Seismic Advisory Board.<sup>118</sup>

33. The second proposed section, titled “Long Term Seismic Program Report,” was to be added to the technical specifications, Chapter 5, “Administrative Controls,” Section 5.6, “Reporting Requirements.” This proposed section is reproduced below:

**Insert 5.6.11**

5.6.11 Long Term Seismic Program Report

A report shall be submitted once every 10 years, based on the submittal date of the previous update. An updated report will be submitted in less than 10 years if new peer reviewed seismic information becomes available that would significantly increase the risk to DCP. The report shall include the following information:

- a. Geology/seismology/geophysics/tectonics investigations,
- b. Seismic source characterization,
- c. Characterization of ground motions,
- d. Soil/structure interaction analysis,
- e. Probabilistic risk analysis,
- f. Deterministic evaluations,

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<sup>118</sup> LAR 11-05, encl., attachment 1, at 1.

- g. Assessment of the adequacy of seismic margins,
- h. Documentation of the review performed by the Seismic Advisory Board (SAB) and resolution of the SAB's comments if performed in less than 10 years, and
- i. Documentation of the review performed by the Senior Seismix [sic] Hazards Analysis Committee for 10 year updates.<sup>119</sup>

34. PG&E's requested addition of two separate sections within the Administrative Controls section of the plant's technical specifications demonstrates unequivocally that, if a method of evaluation of new seismic data is to be designated, it must be added to the plant's "Administrative Controls" section of the technical specifications. NRC regulations provide that such an addition must be accomplished through a license amendment.<sup>120</sup>
35. Moreover, in the section of LAR 11-05's supporting documentation titled "Applicable Regulatory Requirements/Criteria," which includes the regulatory bases for the proposed license amendment, PG&E explicitly cites 10 C.F.R. § 50.36(c)(5). That subsection requires that administrative controls be included in a plant's technical specifications.<sup>121</sup> This admission further evidences that the Commission's attempt to designate a method of evaluation of the Shoreline Fault without modifying the technical specifications accordingly is an unlawful *de facto* license amendment.
36. The Staff and PG&E will no doubt point to PG&E's "regulatory commitments" to update Diablo Canyon's FSARU "to include the Shoreline scenario in accordance with the

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<sup>119</sup> LAR 11-05, encl., attachment 1, at 1-2.

<sup>120</sup> See 10 C.F.R. §§ 50.36(b), 50.36(c)(5), 50.59(c)(1).

<sup>121</sup> See LAR 11-05, encl., at 37.

requirements of 10 C.F.R. § 50.71(e).” But the company has declined to change the plant’s technical specifications to incorporate those commitments. NRC regulations do not allow for amendment of technical specifications through a “regulatory commitment.”

37. For the reasons recited above, designating a new seismic evaluation method without including that method in the plant’s technical specifications, violates 10 C.F.R. §§ 50.36(c)(5) and 50.59(c)(1), and section 189a(a)(1)(A) of the Atomic Energy Act, 42 U.S.C. § 2239(a)(1)(A). Such a change must be made through the license amendment proceeding, with attendant rights to an adjudicatory hearing, which would consider the additional risks posed by the Shoreline Fault and the necessary revisions to Diablo Canyon’s technical specifications.

## **CONTENTION 2**

NRC STAFF’S DETERMINATION THAT THE NEW SEISMIC INFORMATION, INCLUDING THE SHORELINE EARTHQUAKE AND ITS EFFECT 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.

### **Bases for Contention**

1. To prevent a catastrophic loss of coolant accident, potentially leading to a radiation leak into the environment, Appendix A to 10 C.F.R. pt. 50 requires that each plant be qualified to withstand earthquakes while maintaining the ability to be safely shut down. To implement this requirement, Commission regulations require plants to develop a “Safe Shutdown Earthquake” (SSE) and to insure that the plant can remain safely shut down following the occurrence of the postulated SSE.

2. The SSE is defined by regulations as the “*maximum* earthquake potential considering the regional and local geology and seismology and specific characteristics of local subsurface material.”<sup>122</sup> Commission regulations and guidance documents provide evaluative methodologies and assumptions that should be used in determining the SSE. To insure that a plant can safely withstand the SSE, all safety-related structures, systems, and components must be qualified to remain functional following ground vibratory motion up to the SSE.<sup>123</sup>
3. Following an initial seismic evaluation at the time of Diablo Canyon’s licensing, the Double Design Earthquake (0.4 g peak ground acceleration) was designated as Diablo Canyon’s SSE.<sup>124</sup> After discovery of the Hosgri Fault, which has a much higher peak ground acceleration potential of 0.75 g, nearly double that of the DDE, the Commission and PG&E negotiated an exception to SSE analysis, designated the Long Term Seismic Plan, and agreed that the Hosgri Fault would be analyzed under that method.<sup>125</sup> NRC did not designate the Hosgri Earthquake as Diablo Canyon’s SSE, nor did PG&E propose it.<sup>126</sup>
4. NRC permitted PG&E to devise its own set of methodologies and assumptions to use in evaluating the risk posed by the Hosgri Fault. The methodologies and assumptions that PG&E employed in the LTSP and the associated Hosgri Evaluation were not as conservative as those required by the SSE. Thus, an evaluation of new seismic information against the

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<sup>122</sup> 10 C.F.R. pt. 100, App. A, § III(c) (emphasis added).

<sup>123</sup> 10 C.F.R. pt. 100, App. A, § VI(a)(1).

<sup>124</sup> FSARU, at 2.5-59.

<sup>125</sup> See FSARU, at 2.5-1. See also generally NRC, NUREG-0675, Supplement No. 34, Safety Evaluation Report Related to the Operation of Diablo Canyon Nuclear Power Plant, Units 1 and 2, (June 1991).

<sup>126</sup> See FSARU, at 2.5-59.



Hosgri Event captures only some of the safety risks to Diablo Canyon's structures, systems, and components and leaves others unanalyzed.

5. In September 2012, NRC issued a report analyzing the safety risk posed to the plant by the Shoreline Fault.<sup>127</sup> In the report, NRC argued that the potential seismic power of the newly discovered Shoreline Fault, and that fault's potential relationship to the San Luis Bay and Los Osos faults, was less than the larger (but more distant) Hosgri Fault and that, therefore, the plant was safe to continue operating.
6. But comparing the updated ground motion levels from the three faults to the ground motion levels of the Hosgri Earthquake is not a sufficient basis for concluding that the plant may continue to operate with an adequate margin of safety.
7. When the NRC approved the use of the Hosgri Evaluation, the Commission recognized that it was not equivalent to the SSE evaluation in terms of stringency or thoroughness. The NRC indicated that the HE was approved as a deviation from the accepted SSE evaluative process as a one-time exception, and the Commission would not allow its use in subsequent seismic

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<sup>127</sup> NRC, Research Information Letter 12-01, "Confirmatory Analysis of Seismic Hazard at the Diablo Canyon Power Plant from the Shoreline Fault Zone," ADAMS Accession No. ML121230035 (Sep. 2012), at xii.

The results indicate that deterministic seismic-loading levels predicted for all 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 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.

*Id.*

analyses.<sup>128</sup> Accordingly, the Commission directed that the LTSP was not to be a part of Diablo Canyon’s design basis or current licensing basis.<sup>129</sup>

8. Moreover, although the postulated Safe Shutdown Earthquake has much lower ground acceleration than the postulated Hosgri Earthquake —0.4 g compared to 0.75 g respectively—for many SSCs the original seismic qualification was *more limiting* under the *SSE analysis than under the Hosgri Earthquake analysis* because the former uses more conservative assumptions. For example, as Dr. Peck points out in his Differing Professional Opinion, the SSE/DDE is projected to cause more stress at the plant’s steam generator than the postulated Hosgri Earthquake, even though the SSE/DDE has just over half the peak ground acceleration of the Hosgri Earthquake.<sup>130</sup> For this reason, the Hosgri Evaluation is not the bounding seismic analysis for Diablo Canyon seismic qualification.
9. Indeed, in his comments on Dr. Peck’s “Non-Concurrence,” NRC Region IV Branch Chief Neil O’Keefe recognized that the HE/LTSP cannot be the bounding seismic analysis for Diablo Canyon for the simple reason that there is no bounding seismic analysis:

There is no real “bounding” seismic case in the DCPD seismic design and licensing basis because the larger HE ground motion was allowed to use less conservative acceptance criteria, while the smaller DDE ground motion was required to use more

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<sup>128</sup> See *Pac. Gas & Elec. Co.* (Diablo Canyon Nuclear Power Plant Units 1 and 2), LBP-79-26, 10 NRC 453 (1979).

<sup>129</sup> Diablo Canyon’s Updated Final Safety Analysis Report states that the LTSP “does not alter the design bases for DCPD.” FSARU, Section 2.5.

<sup>130</sup> DPO, at 15 (citing FSARU, section 5.2.1.15.2).

conservative acceptance criteria. Therefore, there is no one case that bounds the design.<sup>131</sup>

The Hosgri Evaluation cannot serve as the seismic event with which new seismic data is compared. Accordingly, NRC cannot determine that Diablo Canyon is safe to operate based on a mere comparison of the seismic data for the Shoreline, Los Osos, and San Luis Bay faults with the Hosgri Evaluation.

10. As a condition of its operating license, PG&E is required to investigate local seismic features, determine the maximum vibratory ground motion that can occur at the plant, designate that ground motion as the SSE, and certify all safety-related structures, systems, and components to withstand the SSE.<sup>132</sup> Merely comparing the new seismic data from the Shoreline, San Luis Bay, and Los Osos Faults to the postulated Hosgri Earthquake, which was analyzed using the less rigorous Hosgri Evaluation methodologies and calculations, does not discharge this duty.
11. Without 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 SSCs can withstand the maximum vibratory ground motion that can occur at the plant. Due to the LTSP's and Hosgri Evaluation's relaxed assumptions and acceptance criteria, which are detailed below, use of the LTSP and HE cannot assure that all safety-related SSCs can withstand ground shaking caused by the "maximum vibratory ground motion" that can occur at the plant site.

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<sup>131</sup> NRC, "Additional Branch Chief Comments Related to NCP 2012-001 With Annotations," ADAMS Accession No. ML12284A066, at 2.

<sup>132</sup> 10 C.F.R. pt. 100, App. A, § VI(a)(1).

12. For these reasons, operation of the Diablo Canyon plant based on the claim that the Hosgri Evaluation is “bounding” with regard to the seismic loading levels from the Shoreline, San Luis Bay, and Los Osos faults exceeds the limits of Diablo Canyon’s current licensing basis. PG&E’s reliance on the LTSP/Hosgri Evaluation does not provide the required demonstration that PG&E is able to safely shut down in the event of an earthquake caused by the Shoreline, Los Osos, and San Luis Bay Faults.

### **Supporting Evidence**

13. Under 10 C.F.R. § 2.309(f), Petitioner is not required to prove the merits of its contention in order to raise an admissible contention. Indeed “[a] contention may be plausible enough to meet the admission standards even if it is ultimately denied on the merits.”<sup>133</sup>

A. *PG&E Has Failed To Establish That Diablo Canyon Can Safely Shut Down Following An Earthquake Caused By The Shoreline, San Luis Bay, or Los Osos Faults*

14. Commission regulations require PG&E to investigate the surrounding seismic features, use specified conservative methods to determine the *maximum* vibratory ground motion which could occur at the plant (the SSE), and insure that safety-related structures, systems and components will withstand that ground motion.<sup>134</sup> Despite NRC studies clearly showing that the Shoreline, San Luis Bay, and Los Osos faults have the potential to cause much higher ground acceleration at Diablo Canyon than the currently designated SSE, PG&E has not certified that safety-related SSCs are able to withstand ground shaking caused by the these faults.

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<sup>133</sup> *Entergy Nuclear Vermont Yankee, LLC* (Vermont Yankee), LBP-06-20, 64 NRC 131, 160 (2006).

<sup>134</sup> 10 C.F.R. pt. 100, App. A.

15. By asserting that the Hosgri Earthquake is the bounding seismic event for Diablo Canyon and that the Shoreline scenario is a lesser included event within the Hosgri Earthquake,<sup>135</sup> the Staff seeks to substitute a less protective method for the requirement to demonstrate the safety of the plant, and to exclude the public from the process, in violation of Commission regulations and the AEA. As Dr. Peck notes in his DPO, “[n]either the HE nor the LTSP methods are approved for use in the Diablo Canyon SSE design basis or safety analysis.”<sup>136</sup> In PG&E’s own words, approved by the NRC, the LTSP was not intended to, and is not adequate to, discharge PG&E’s duty *in its license* to insure the plant’s seismic safety:

The LTSP contains extensive databases and analyses that update the basic geologic and seismic information in this section of the FSAR Update. *However, the LTSP material does not address or alter the current design licensing basis for the plant, and thus is not included in the FSAR Update.*<sup>137</sup>

NRC’s Region IV Branch Chief confirmed this:

The LTSP neither changed the CLB nor became a new part of the CLB. This is important to the operability question because the LTSP cannot be used as the basis of comparison. . . . [S]ince [the LTSP] was not used to design or license the plant, it is not a legal part of the CLB.<sup>138</sup>

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<sup>135</sup> See NRC, Research Information Letter 12-01, “Confirmatory Analysis of Seismic Hazard at the Diablo Canyon Power Plant from the Shoreline Fault Zone,” ADAMS Accession No. ML121230035, at xii.

<sup>136</sup> DPO, at 3.

<sup>137</sup> See FSARU, section 2.5 (emphasis added).

<sup>138</sup> NRC, “Additional Branch Chief Comments Related to NCP 2012-001 With Annotations,” ADAMS Accession No. ML12284A066, at 3.

- i. The Hosgri Evaluation And The Associated Long Term Seismic Plan Is A Weaker Seismic Evaluation Method Than The NRC's Recommended Method And Is Inadequate To Demonstrate That Diablo Canyon Can Safely Shut Down Following An Earthquake Caused By The Shoreline, San Luis Bay, or Los Osos Faults

16. The inadequacy of the LTSP/Hosgri Evaluation as a method to determine whether Diablo Canyon can continue to operate safely is demonstrated by the drastic deviations of the LTSP method from NRC-accepted standard methodologies and assumptions. The extent of these deviations is evident from PG&E's own description of how the LTSP methods differ from the NRC's list of generally accepted methods to analyze seismic risk to nuclear power plants.
17. Before PG&E filed LAR 11-05 seeking to designate the Hosgri Event as the plant's Safe Shutdown Earthquake, the Staff, in the course of gathering information about the proposed LAR, questioned exactly how the LTSP and its associated Hosgri Evaluation differed from the Standard Review Plan methodologies, assumptions and acceptance criteria. Accordingly, at a meeting before PG&E filed the LAR, the Staff directed PG&E to submit an accounting of how the LTSP deviated from the Standard Review Plan acceptance criteria. In a striking response, PG&E submitted a 331-page document outlining the differences between the standard, accepted approach and the weaker approach that PG&E had developed.<sup>139</sup> This document is a damning exposition of the LTSP's and Hosgri Evaluation's staggering shortfalls as a method of seismic analysis.

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<sup>139</sup> See PG&E Letter, "Standard Review Plan Comparison Tables for License Amendment Request 11-05, 'Evaluation Process for New Seismic Information and Clarifying the Diablo Canyon Power Plant Safe Shutdown Earthquake,'" ADAMS Accession No. ML11342A238 (Dec. 6, 2011) (*hereinafter* "Standard Review Plan Comparison Tables").

18. The list of deviations in the document shows how PG&E sought to minimize the differences through technical language. A few examples are reproduced below, with the Standard Review Plan criteria on the left and the proposed Hosgri Evaluation/LTSP criteria on the right.<sup>140</sup>

SRP Acceptance Criteria	DCPP Design/Licensing Basis
<p data-bbox="188 590 776 625"><u>Standard Review Plan 2.5.3: Surface Faulting</u></p> <p data-bbox="188 661 743 768">10 CFR 100, Appendix A, “Seismic and Geologic Siting Criteria for Nuclear Power Plants”</p> <p data-bbox="188 810 768 953">This appendix provides general requirements for the development of the deterministic earthquakes for a nuclear power plant and requires the identification of surface faulting.</p>	<p data-bbox="824 590 1409 730">The FSAR is generally consistent with the requirements of this RG [Regulatory Guide], but <i>the recently-discovered Shoreline Fault is not included.</i><sup>141</sup></p>

This comparison table references the NRC’s requirements, contained in Appendix A to 10 C.F.R. Part 100, regarding how a licensee must evaluate a plant’s seismic risk to insure that the plant can operate safely. Notably, the right-hand column of this table indicates that the Shoreline Fault has not been evaluated under these procedures. (Perhaps tellingly, PG&E

<sup>140</sup> Although the charts reproduced in this Petition appear to compare “SRP Acceptance Criteria” in the left column with the “DCPP Design/Licensing Basis [Criteria]” in the right column, it is clear that in fact the charts compare the SRP acceptance criteria with the HE acceptance criteria. Thus, although the right-hand column in these charts is labeled “DCPP Design/Licensing Basis,” it is apparent that these criteria are in fact the Hosgri Evaluation criteria. Because LAR 11-05 sought to “clarify” that the Hosgri Earthquake was Diablo Canyon’s SSE, at the time PG&E released these comparison charts the company apparently took the view that the Hosgri Earthquake was already a part of the plant’s licensing basis. *See* Standard Review Plan Comparison Tables, encl., at 1 (“The information provided in the attachments identifies key areas where the Diablo Canyon Power Plant [] Hosgri design and licensing information appears to differ from the current SRP criteria applicable to a safe shutdown earthquake based on comparisons made by knowledgeable PG&E personnel and contractors.”).

<sup>141</sup> Standard Review Plan Comparison Tables, encl. attachment 3, at 2 (emphasis added).

mistakenly refers to 10 C.F.R. pt. 100, Appendix A as a non-binding “Regulatory Guide,” when in fact it is a duly adopted regulation, which is deemed to be part of Diablo Canyon’s Licensing Basis.<sup>142</sup>)

19. The following table shows that the LTSP method permits the use of higher damping values than previously found acceptable by the Commission, thus resulting in a less conservative analysis of the risk posed by an earthquake.<sup>143</sup> The left-hand column references the damping values prescribed by the Standard Review Plan, and the right-hand column indicates that the LTSP method employs looser (less conservative) damping values, thus artificially *inflating* the amount of energy that is assumed to be absorbed as energy travels through the ground from the epicenter to the plant, and artificially *diminishing* the seismic risk posed to the plant.

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<sup>142</sup> NRC, “Inspection Manual, Part 9900: Technical Guidance,” section 3.1 ADAMS Accession No. ML081360529 (Apr. 16, 2008) (setting forth the set of NRC requirements which collectively make up a plant’s licensing basis).

<sup>143</sup> “Damping is a measure of the energy dissipation of a material or structural system as it responds to dynamic excitation. It is a term used to assist in mathematically modeling and solving dynamic equations of motion for a vibratory system in which energy is dissipated. When performing an elastic dynamic seismic analysis, one can account for the energy dissipated by specifying the amount of viscous damping (i.e., damping force proportional to the velocity) in the analytical model.” NRC Regulatory Guide 1.61, “Damping Values for Seismic Design of Nuclear Power Plants,” (Mar. 2007), *available at* <http://www.nrc.gov/reading-rm/doc-collections/reg-guides/power-reactors/rg/01-061/01-061.pdf>, at 2.



SRP Acceptance Criteria	DCPP Design/Licensing Basis
<p data-bbox="186 342 764 411"><u>Standard Review Plan 3.7.1: Seismic Design Parameters</u></p> <p data-bbox="186 453 776 594">Damping values used for the analysis of Seismic Category I SSCs are considered acceptable if they are in accordance with Reg. Guide 1.61</p>	<p data-bbox="820 342 1430 594">The damping for applicable to the [Hosgri Evaluation] evaluation of Design Class I SSCs (and the Design Class II turbine building and intake structure) are defined in FSARU Section 3.7.1.3. All values are in accordance with RG 1.61, Revision 0 (October 1973) <i>except as follows:</i></p> <ul data-bbox="873 600 1425 1434" style="list-style-type: none"> <li data-bbox="873 600 1344 669">• Mechanical Components (PG&amp;E Purchased): 4% instead of 3%</li> <li data-bbox="873 674 1377 779">• Vital Piping (except RCL): ASME Code Case N-411 instead of 2% for small bore - 3% for large bore</li> <li data-bbox="873 783 1398 993">• Reactor Coolant Loop: 4% instead of 3% (higher value based on WCAP-7921- AR, Westinghouse Electric Corporation, "Damping Values for Nuclear Power Plant Components," May 1974)</li> <li data-bbox="873 997 1425 1207">• Replacement Steam Generators: 4% instead of 3% (higher value based on WCAP-7921-AR, Westinghouse Electric Corporation, "Damping Values for Nuclear Power Plant Components," May 1974)</li> <li data-bbox="873 1211 1360 1316">• Integrated Head Assembly: 6.85% instead of 4% (per DCPD License Amendments 208/210)</li> <li data-bbox="873 1320 1393 1434">• Control Rod Drive Mechanisms: 5% instead of 3% (per DCPD License Amendments 207/209)<sup>144</sup></li> </ul>

By way of example, the final bullet in the table’s right-hand column demonstrates that the LTSP method permits PG&E to assume that seismic energy will be reduced by 5% as it travels from the earthquake epicenter to the control rod drive mechanisms, rather than the 3%

<sup>144</sup> Standard Review Plan Comparison Tables, encl. attachment 5, at 3 (emphasis added).

which NRC found to be the more accurate and realistic figure. Thus, compared to the NRC's Standard Review Plan damping values, the LTSP and Hosgri Evaluation under-predict how much seismic stress will be placed on integral plant components such as the control rod drive mechanisms.

20. Paragraphs 18-19 are but a few of the comparison tables included in PG&E's 331-page list. Viewed individually, these examples might appear as minor deviations from the accepted practices. But over 300 pages worth of such deviations lead to the inescapable conclusion that the LTSP/Hosgri Evaluation is a drastically less comprehensive and less conservative analytical method than the Standard Method approved by the Commission as sufficient under the regulations, and therefore cannot serve as a basis of comparison for the Shoreline Fault or other seismic information in determining whether the plant may safely withstand a potential earthquake.

- ii. The NRC's Own Policy Does Not Permit PG&E To Determine That The Plant Is Safe To Continue Operating Based On The Probabilistic Risk Assessment Ordered By The NRC

21. According to the NRC's own policy, the review ordered by the Fukushima Task Force cannot substitute for other, required analysis to ensure that the plant is safe to continue operating. In response to the Task Force's recommendations, the NRC Staff requested that PG&E develop new probabilistic ground motion models. The results of these models were then to be compared to the plant's existing SSE/DDE, which is deterministic in nature. But given that Diablo Canyon's design bases are deterministic in nature, a probabilistic risk assessment cannot be used to determine compliance with the plant's design bases.

22. Recognizing this fact, the NRC Staff's own policy prohibits the use of a probabilistic risk assessment to determine whether a plant is safely operable:

Probabilistic risk assessment [PRA] is a valuable tool for evaluating accident scenarios because it can consider the probabilities of occurrence of accidents or external events. Nevertheless, the definition of operability is that the SSC must be capable of performing its specified safety function or functions, which inherently assumes that the event occurs and that the safety function or functions can be performed. *Therefore, the use of PRA or probabilities of occurrence of accidents or external events is not consistent with the assumption that the event occurs, and is not acceptable for making operability decisions.*<sup>145</sup>

Despite this policy, the NRC Staff is attempting to rest its determination that the plant is safe to continue operation on the back of a probabilistic risk assessment. This effort is in direct conflict with NRC policy and must fail.<sup>146</sup>

iii. The U.S. Geological Survey Geophysicist Who Discovered The Shoreline Fault Has Published Research Concluding That The NRC Staff Underestimated The Capability Of The Shoreline Fault And The Risk It Poses To Diablo Canyon

23. In support of the views presented in this Petition, Dr. Jeanne Hardebeck, the U.S. Geological Survey geophysicist who discovered the Shoreline Fault, published research concluding that, contrary to PG&E's and NRC's conclusions, the Shoreline and Hosgri faults are connected,

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<sup>145</sup> NRC, "Inspection Manual, Part 9900: Technical Guidance," Appendix C, at C-5, ADAMS Accession No. ML081360529 (emphasis added).

<sup>146</sup> See also DPO, at 29-31, 36-37.

and that a rupture on one fault could travel to the other, leading to a much larger earthquake than would be possible on a single, independent fault.<sup>147</sup>

24. Dr. Hardebeck concluded: “[T]he Shoreline fault is a single continuous structure that connects to the Hosgri fault. Discontinuities smaller than about 1 km may be undetected, but would be too small to be barriers to earthquake rupture.” Dr. Hardebeck therefore concluded that PG&E and NRC would be wrong to rule out the possibility of a joint rupture:

Given the connection between the Shoreline and Hosgri faults at seismogenic depths, it should be possible for a hypothetical earthquake nucleating on the Shoreline fault to continue rupturing to the north onto the Hosgri fault. . . . This scenario could extend the rupture length an additional ~100 km to the northern termination of the Hosgri fault near Big Sur. This hypothetical earthquake would have a moment magnitude of 7.2-7.5 . . . .<sup>148</sup>

25. Perhaps just as importantly, Dr. Hardebeck’s work highlights the gaps in what experts know about the Shoreline Fault, further indicating that NRC has failed to insure that the plant could withstand earthquakes that might occur at the site. Dr. Hardebeck notes that existing study of the Shoreline Fault is not sufficient to estimate the probability of a Shoreline earthquake occurring. Her research indicates that “[t]he geometry of the Shoreline fault can be used to estimate its earthquake potential, although the probability of a large earthquake cannot be reliably estimated because the slip rate is unknown.”<sup>149</sup>

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<sup>147</sup> Hardebeck, J, Geometry and Earthquake Potential of the Shoreline Fault, Central California,” *Bulletin of the Seismological Society of America*, Vol. 103, No. 1, pp. 447–462, February 2013, doi: 10.1785/0120120175.

<sup>148</sup> *Id.* at 458.

<sup>149</sup> *Id.* at 460-61.

26. Given that the Shoreline Fault “is clearly seismically active, as it has produced approximately 50 recorded  $M \leq 3.5$  earthquakes since 1987,”<sup>150</sup> an evaluation of the probability of a large earthquake occurring at the fault is paramount to ensuring the plant’s safety. Yet Dr. Hardebeck, the geophysicist who discovered the fault itself, has concluded that studies of the fault are insufficient to permit scientists to estimate the probability of a large earthquake occurring on the fault.
27. The standard for admissibility of this contention does not require the Commission to credit Dr. Hardebeck’s research over that of NRC or PG&E in order to admit this contention. Nor does it require Petitioner to make such a showing. 10 C.F.R. § 2.309(f), which provides the admissibility standard, “does not call upon the intervenor to make its case at [the contention] stage of the proceeding, but rather to indicate what facts or expert opinions, be it one fact or opinion or many, of which it is aware at that point in time which provide the basis for its contention.”<sup>151</sup> Petitioner has made that showing here.

- iv. Former NRC Senior Resident Inspector Dr. Michael Peck’s Differing Professional Opinion Demonstrates How Use Of The Hosgri Earthquake As A Safety Metric To Analyze The Shoreline Fault Is Not Sufficient To Insure Diablo Canyon’s Seismic Safety

28. Other examples of how NRC’s proposed method of evaluating the Shoreline Fault and other new seismic information is insufficient to insure plant safety are found in Dr. Peck’s Differing Professional Opinion. The DPO exhaustively sets forth the case that the Staff has

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<sup>150</sup> *Id.* at 447.

<sup>151</sup> *Pilgrim Nuclear*, 64 NRC at 356 (internal quotation marks and footnotes omitted).

proposed, through an unlawful *de facto* license amendment, to permit Diablo Canyon to continue operating without having conducted an adequate safety analysis.

29. Dr. Peck explains that the LTSP is inadequate as an evaluation method to insure that Diablo Canyon can safely shut down. As Dr. Peck points out, the SSE is projected to cause more vibration at the plant's containment fan coolers than the HE's projected vibrations, despite that the SSE's ground motion is much less than the HE's.<sup>152</sup> This is due to the HE's weak assumptions.

30. This point highlights the significant effect of the LTSP's relaxed assumptions discussed above, and illustrates how the LTSP is inadequate to insure the plant's seismic safety. Note that Diablo Canyon's containment fan coolers are qualified to withstand the postulated SSE, which carries 0.4 g ground acceleration. Despite the fact that the postulated Hosgri Earthquake analyzed in the LTSP has a ground acceleration value of nearly double that of the postulated SSE earthquake, the LTSP analysis predicts a *lower amount of seismic stress* on the plant's containment fan coolers. Thus, the LTSP's many deviations in acceptance criteria from the NRC's standard approved list negate the comparatively much greater strength of the postulated LTSP earthquake.

31. Neither the Staff nor PG&E can dispute the accuracy of Dr. Peck's assessments on this point.

On August 1, 2011, the Staff noted that:

While the FSARU stated that the postulated 7.5 M earthquake on the Hosgri fault would produce the maximum vibratory ground motion at the site, the plant safety analyses concluded that seismic

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<sup>152</sup> Non-Concurrence, at 5-6.

qualification for certain structures, systems and components was more limiting for the Design and Double Design earthquakes than for the Hosgri Event, based on the different assumptions used in the seismic qualification for these earthquakes, including damping values, methods of analysis, required load combinations, and the allowable stresses or other acceptance criteria. As a result, seismic qualification for some plant structures, systems and components may not be bound [by] the Hosgri Event.<sup>153</sup>

32. Dr. Peck points out three other examples—the steam generator nozzles, reactor coolant pump, and reactor vessel evaluation—where results from the Hosgri Evaluation are so skewed due to the LTSP’s relaxed assumptions that it predicts less seismic stress on certain SSCs than under the Double Design Earthquake/SSE.<sup>154</sup> Other examples almost certainly exist, but Petitioner is unable to view Diablo Canyon’s FSARU due to its designation as a non-public document, despite its role as an assessment of the risk to the public health posed by operation of the plant.<sup>155</sup>

33. These facts, combined with the above data on the LTSP’s and Hosgri Evaluation’s deviations from the Standard Review Plan, are sufficient to satisfy the Commission’s standard for

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<sup>153</sup> Memo from Kriss M. Kennedy, Director, Division of Reactor Projects, Region IV to Robert Nelson, Deputy Director, Division of Policy and Rulemaking, Office of Nuclear Reactor Regulation, “Task Interface Agreement (TIA) – Concurrence on Diablo Canyon Seismic Qualification Current Licensing and Design Basis, (TIA 2011-010),” ADAMS Accession No. ML112130665 (Aug. 1, 2011), at 3.

<sup>154</sup> DPO, at 15 (quoting FSARU, sections 5.2.1.15.2 to 5.2.1.15.4).

<sup>155</sup> Given the document’s focus on the public health and continued safe operation of nuclear power plants, NRC’s refusal to permit public access to this document is a further example of the Commission’s unconscionable efforts to preclude public participation in plant safety issues. 10 C.F.R. § 50.34(a)(4) provides that each licensee must develop a FSARU, the “objective” of which is to “assess[] the risk to public health and safety resulting from operation of the facility and includ[e] determination of the margins of safety during normal operations and transient conditions anticipated during the life of the facility, and the adequacy of structures, systems, and components provided for the prevention of accidents and the mitigation of the consequences of accidents.”

admissibility. NRC regulations do not require Petitioner to make its substantive case at the contention stage.<sup>156</sup> Petitioner has alleged information sufficient to show that a genuine dispute exists with regard to a material issue of law and has referenced specific documents supporting that argument.<sup>157</sup>

v. The Hosgri Evaluation And The Associated Long Term Seismic Plan Are Not Part Of Diablo Canyon's Licensing Basis And Were Intended To Be A One-Time Exception To The Current Licensing Basis

a. *Current Licensing Basis And Regulatory Background*

34. Each nuclear power plant, including Diablo Canyon, is required to comply with its current licensing basis during operation.<sup>158</sup> Commission regulations set forth the requirements and obligations which together form a plant's current licensing basis:

The set of NRC requirements applicable to a specific plant CLB include:

- a. NRC regulations in 10 CFR Parts 2, 19, 20, 21, 26, 30, 40, 50, 51, 54, 55, 70, 72, 73, and 100 and appendices thereto;
- b. Commission orders;
- c. license conditions;
- d. exemptions;
- e. technical specifications;
- f. plant-specific design basis information defined in 10 CFR 50.2 and documented in the most recent UFSAR (as required by 10 CFR 50.71);
- g. licensee commitments remaining in effect that were made in docketed licensing correspondence (such as licensee

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<sup>156</sup> *Pilgrim Nuclear*, 64 NRC at 356.

<sup>157</sup> See 10 C.F.R. § 2.309(f).

<sup>158</sup> 42 U.S.C. § 2131.



responses to NRC bulletins, Licensee Event Reports, generic letters, and enforcement actions); and

- h. licensee commitments documented in NRC safety evaluations.<sup>159</sup>

Together, this information constitutes the requirements and obligations with which PG&E must comply in order to continue to operate within the bounds of the Atomic Energy Act.

35. In addition to documents that constitute the current licensing basis, a bundle of regulations and other obligations set forth the requirements imposed on licensees to insure seismic safety. Appendix A to 10 C.F.R. pt. 50 requires that a nuclear power plant's "structures, systems, and components important to safety shall be designed to withstand the effects of natural phenomena such as earthquakes [and other phenomena] without loss of capability to perform their safety functions."<sup>160</sup> This provision, called General Design Criterion 2, is a regulatory requirement and, as such, is part of Diablo Canyon's current licensing basis.

36. To implement General Design Criterion 2, the Commission developed the Safe Shutdown Earthquake concept. The Safe Shutdown Earthquake is defined as:

that earthquake which is based upon an evaluation of the *maximum earthquake potential* considering the regional and local geology and seismology and specific characteristics of local subsurface material. It is that earthquake which produces the *maximum vibratory ground motion* for which certain structures, systems, and components are designed to remain functional. These structures, systems, and components are those necessary to assure:

- (1) The integrity of the reactor coolant pressure boundary,

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<sup>159</sup> NRC, "Inspection Manual, Part 9900: Technical Guidance," section 3.1, ADAMS Accession No. ML081360529.

<sup>160</sup> 10 C.F.R. pt. 50, App. A; 10 C.F.R. pt. 100, App. A.

(2) The capability to shut down the reactor and maintain it in a safe shutdown condition, or

(3) The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the guideline exposures of this part.<sup>161</sup>

The Double Design Earthquake was designated as Diablo Canyon’s Safe Shutdown Earthquake.<sup>162</sup>

37. Commission regulations set forth specific requirements as to how to investigate local seismic features and designate a Safe Shutdown Earthquake. Licensees are required to investigate the tectonic, lithologic, stratigraphic, hydrologic, and structural geologic conditions of the site and the region surrounding the site, including its geologic history, among other investigations. The regulations provide that, using data gleaned from these investigations, licensees are to develop seismic design bases that take into account the “maximum vibratory ground motion” at the plant.<sup>163</sup>

38. As part of the current licensing basis, 10 C.F.R. pt. 100, Appendix A requires each plant to develop “design bases” for the plant’s SSCs and operate those SSCs within the applicable design basis. “Design bases” are defined as “that information which identifies the specific functions to be performed by a structure, system, or component of a facility, and the specific

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<sup>161</sup> 10 C.F.R. pt. 100, App. A, § III(c) (emphases added).

<sup>162</sup> *See, e.g.*, Memo from Kriss M. Kennedy, Director, Division of Reactor Projects, Region IV to Robert Nelson, Deputy Director, Division of Policy and Rulemaking, Office of Nuclear Reactor Regulation, “Task Interface Agreement (TIA) – Concurrence on Diablo Canyon Seismic Qualification Current Licensing and Design Basis, (TIA 2011-010),” ADAMS Accession No. ML112130665 (Aug. 1, 2011), at 2 (stating that the Double Design Earthquake “implements the NRC regulatory requirements for the ‘safe shutdown earthquake’ as described in 10 CFR Part 100, Appendix A.”).

<sup>163</sup> 10 C.F.R. pt. 100, App. A, § V(a).

values or ranges of values chosen for controlling parameters as reference bounds for design.” The applicable regulation provides that “[t]hese values may be (1) restraints derived from generally accepted ‘state of the art’ practices for achieving functional goals, or (2) requirements derived from analysis (based on calculation and/or experiments) of the effects of a postulated accident for which a structure, system, or component must meet its functional goals.”<sup>164</sup> Design bases are part of a plant’s current licensing basis.<sup>165</sup>

39. Each plant has its own “Seismic and Geologic Design Bases,” which require licensees to comply with certain procedures in determining a vibratory ground motion value to designate as the plant’s Safe Shutdown Earthquake. The Commission requires that “[t]he *most severe earthquakes* associated with tectonic structures or tectonic provinces in the region surrounding the site should be identified, considering those historically reported earthquakes that can be associated with these structures or provinces and other relevant factors.”<sup>166</sup> The Commission then requires that licensees assess local faults using a number of conservative assumptions:

The vibratory ground motion at the site should be then determined by assuming that the epicenters or locations of *highest intensity* of the earthquakes are situated at the point on the tectonic structures or tectonic provinces *nearest to the site*. The earthquake which could cause the *maximum vibratory ground motion* at the site should be designated the Safe Shutdown Earthquake. . . . The determinations carried out . . . *shall* assure

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<sup>164</sup> 10 C.F.R. § 50.2.

<sup>165</sup> NRC Regulatory Guide 1.186, “Guidance and Examples for Identifying 10 CFR 50.2 Design Bases Nuclear Energy Institute,” *available at* <http://www.nrc.gov/reading-rm/doc-collections/reg-guides/power-reactors/rg/01-186/> (*citing* NEI Guide 97-04, “Guidance and Examples for Identifying 10 CFR 50.2 Design Bases,” App. B. (Nov. 2000)).

<sup>166</sup> 10 C.F.R. pt. 100, App. A, § V(A) (emphasis added).

that the safe shutdown earthquake intensity is, *as a minimum*, equal to the maximum historic earthquake intensity experienced within the tectonic province in which the site is located.<sup>167</sup>

The resulting value is then designated as the plant's Safe Shutdown Earthquake.

40. Although Part 100 and Appendix A do not apply to Diablo Canyon as *siting requirements* because the plant was sited before the regulations were adopted, Part 100 and Appendix A do apply as part of Diablo Canyon's current licensing basis. These regulations have been incorporated into Diablo Canyon's CLB.<sup>168</sup> The General Design Criteria themselves provide that they are intended to "provide reasonable assurance that a nuclear power plant can be constructed *and operated* at a proposed site without undue risk to the health and safety of the public."<sup>169</sup>

41. The Commission's Regulatory Guide 1.29, "Seismic Design Classification," addresses which SSCs must be certified to withstand a plant's Safe Shutdown Earthquake. The Commission approved a list of 17 groups of plant SSCs that are required to be qualified to withstand the SSE, thus ensuring that the plant will operate with an adequate margin of safety and can be

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<sup>167</sup> 10 C.F.R. pt. 100, App. A, § V(A) (emphasis added).

<sup>168</sup> NRC, "Inspection Manual, Part 9900: Technical Guidance," section 3.1, ADAMS Accession No. ML081360529 (defining CLB). *See also* Diablo Canyon, Operating License, Condition 2(C): "This License shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect . . ."). Part 100 appears in Chapter I of Title 10 of the C.F.R.

<sup>169</sup> 10 C.F.R. pt. 100, App. A (emphasis added). *See also* 10 C.F.R. pt. 50, Appendix S ("[F]or either an operating license applicant or holder whose construction permit was issued before January 10, 1997, the earthquake engineering criteria in Section VI of appendix A to 10 CFR part 100 continue to apply.").

safely shut down in the event the SSE occurs.<sup>170</sup> In accordance with Commission regulations, a licensee's failure to certify that all safety-related SSCs can withstand the Safe Shutdown Earthquake will result in a finding that the plant cannot operate with an adequate margin of safety and, therefore, cannot operate within the terms of its current licensing basis.

42. Taken together, these regulations—10 C.F.R. pt. 50, General Design Criterion 2, and 10 C.F.R. pt. 100—set forth the design basis functional requirements for qualification of a plant's seismic safety. These requirements are each included within the plant's current licensing basis.<sup>171</sup>

b. *The Hosgri Evaluation And The Long Term Seismic Plan Are Not Part Of Diablo Canyon's Licensing Basis*

43. In approving the LTSP and its Hosgri Evaluation in the 1990s as a method to evaluate the Hosgri Fault, the NRC declined to make the LTSP part of Diablo Canyon's licensing basis, or to designate the Hosgri Evaluation as Diablo Canyon's bounding seismic analysis.<sup>172</sup> This determination was based on sound reasons, as, for the reasons explained above, the Hosgri Evaluation analysis is not sufficient to insure that Diablo Canyon can continue to operate with an adequate margin of seismic safety, as required by Commission regulations. The SSE, which is intended to implement the regulatory requirement that plants be designed to withstand ground shaking without loss of the ability to shut down safely, requires analysis of

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<sup>170</sup> NRC Regulatory Guide 1.29, "Seismic Design Classification," (Mar. 2007), *available at* <http://www.nrc.gov/reading-rm/doc-collections/reg-guides/power-reactors/rg/01-029/01-029.pdf>.

<sup>171</sup> NEI Guide 97-04, "Guidance and Examples for Identifying 10 CFR 50.2 Design Bases, App. B. (Nov. 2000), *available at* <http://www.nrc.gov/reading-rm/doc-collections/reg-guides/power-reactors/rg/01-186/RG97-04appb.pdf>; DPO, at 6.

<sup>172</sup> Diablo Canyon's Final Safety Analysis Report states that the LTSP "does not alter the design bases for DCCP." FSARU, Section 2.5.

specified structures, systems, and components which are integral to ensuring a plant's ability to shut down in the event of an earthquake.

44. Despite this clear intent of the Commission to keep the Hosgri Evaluation separate and apart from the plant's current licensing basis, the Staff is attempting to amend *de facto* Diablo Canyon's license to make the Hosgri Evaluation the metric by which Diablo Canyon is determined to be safe.

## V. ADDITIONAL COMMISSION AUTHORITY

Even if the Commission determines that it is not *required* to convene a license amendment proceeding under 10 C.F.R. § 2.309, the Commission has inherent supervisory authority to convene such a proceeding, and should do so in the interests of assuring the public of the safety of Diablo Canyon. In accord with the Commission's policy of transparency, it should provide for an adjudicatory public hearing with opportunity for participation by interested parties.<sup>173</sup> The Commission's formal statement of its policy on the issue is that it "intends to exercise its inherent supervisory authority, including its power to assume part or all of the functions of the presiding officer in a given adjudication, as appropriate in the context of a particular proceeding."<sup>174</sup> In this case, exercise of the Commission's inherent supervisory authority to convene a public hearing with an opportunity for participation by interested parties is appropriate and necessary in order to insure that the seismic analysis of the Shoreline Fault complies with the Atomic Energy Act and to assure the public that the plant is safe to operate.

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<sup>173</sup> See *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-90-3, 31 NRC 219, 229 (1990).

<sup>174</sup> *Statement of Policy on Conduct of Adjudicatory Proceedings*, 48 NRC 18, 20, 1998 WL 518232 (1998).

## VI. STANDING

FoE is a national non-profit environmental organization headquartered and incorporated in the District of Columbia with an office in Berkeley, California.<sup>175</sup> FoE has a nationwide membership of over 33,000 (including over 6,000 members in California) and over 440,000 activists.<sup>176</sup> Among its missions, FoE seeks to insure that the public has an opportunity to influence the outcome of government and corporate decisions that affect the lives of many people.<sup>177</sup> Since its inception in 1969, FoE has sought to improve the environmental, health, and safety conditions at civil nuclear facilities licensed by the NRC and its predecessor agencies.<sup>178</sup> To that end, FoE utilizes its institutional resources, including legislative advocacy, litigation, and public outreach and education, to minimize the risks that nuclear facilities pose to its members and to the general public.<sup>179</sup>

### 1. Legal Standards

Under section 189a of the Atomic Energy Act, the Commission must grant a hearing on a license amendment application upon “the request of any person whose interest may be affected by the proceeding, and shall admit any such person as a party to such proceeding.”<sup>180</sup> To support the request, a petitioner must state “(1) the nature of the petitioner’s right under the governing statutes to be made a party; (2) the nature of the petitioner’s property, financial, or other interest

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<sup>175</sup> Declaration of Erich Pica, at ¶¶ 2, 4.

<sup>176</sup> *Id.* at ¶ 4.

<sup>177</sup> *Id.* at ¶ 7.

<sup>178</sup> *Id.* at ¶¶ 2-3.

<sup>179</sup> *Id.* at ¶ 3.

<sup>180</sup> 42 U.S.C. § 2239(a)(1)(A).

in the proceeding; and (3) the possible effect of any decision or order on the petitioner's interest."<sup>181</sup>

"The NRC generally uses judicial concepts of standing in interpreting [section 2.309(d)(1)]."<sup>182</sup> Thus, a petitioner may intervene if it can specify facts showing "that (1) it has suffered or will suffer a distinct and palpable harm constituting injury-in-fact within the zone of interests arguably protected by the governing statutes, (2) the injury is fairly traceable to the action being challenged, and (3) the injury will likely be redressed by a favorable determination."<sup>183</sup> In determining whether a petitioner has met the requirements for establishing standing, the Commission "construe[s] the petition in favor of the petitioner."<sup>184</sup>

## 2. Friends Of The Earth Has Standing For Admission Of Its Contentions

Member organizations such as FoE may intervene on behalf of their members if they can "demonstrate that the licensing action will affect at least one of [their] members, . . . identify that member by name and address, and . . . show that [they are] authorized by that member to request a hearing on his or her behalf."<sup>185</sup> FoE has attached Declarations from five of its members ("the Declarants"), each of which resides between approximately seven and 27 miles from Diablo Canyon.<sup>186</sup> The Declarants describe their personal health, safety, economic, aesthetic, and

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<sup>181</sup> *Entergy Nuclear Vermont Yankee, L.L.C., and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 552 (2004) (citing 10 C.F.R. § 2.309(d)(1)).

<sup>182</sup> *Id.*

<sup>183</sup> *Id.* at 552–53.

<sup>184</sup> *Id.* at 553.

<sup>185</sup> *Id.*

<sup>186</sup> Declaration of Jeffrey Pienack (Pienack Decl.), at ¶ 5 (eight miles); Declaration of Gail Jacobson (Jacobson Decl.), at ¶ 4 (seven miles); Declaration of Jill Denton (Denton Decl.), at ¶ 5 (eight miles);



environmental interests in the proper operation of Diablo Canyon and the risk of harms that the plant's operation, without proper seismic analysis, poses to those interests. Each of these interests is an independently sufficient injury-in-fact for standing purposes. Each of these members supports this Petition, and has authorized FoE to intervene in this proceeding and request relief on his or her behalf.<sup>187</sup>

### **Jeffrey Pienack**

Jeffrey Pienack lives with his wife and two-year-old daughter in Oceano, California, approximately eight miles downwind from Diablo Canyon.<sup>188</sup> Mr. Pienack is a homeowner and owns a sales and marketing business, the value of each of which would be adversely affected in the event of a large earthquake at Diablo Canyon.<sup>189</sup> Mr. Pienack's business depends at least in part on the marketing of food products.<sup>190</sup> An accident at Diablo Canyon would adversely affect the agriculture of San Luis County, which is downwind from Diablo Canyon.<sup>191</sup> Mr. Pienack's wife farms land downwind from Diablo Canyon. A radiation leak from Diablo Canyon would contaminate the resources in this area and would prevent Mrs. Pienack from farming on her land.<sup>192</sup>

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Declaration of Thomas Danfield (Danfield Decl.), at ¶ 5 (eight miles); Declaration of Elizabeth Brousse (Brousse Decl.), at ¶ 5 (27 miles).

<sup>187</sup> Pienack Decl., at ¶¶ 14-15; Jacobson Decl., at ¶¶ 13-14; Denton Decl., at ¶¶ 14-15; Danfield Decl., at ¶¶ 14-15; Brousse Decl., at ¶¶ 13-14.

<sup>188</sup> Pienack Decl. at ¶¶ 1, 5, 10.

<sup>189</sup> *Id.* at ¶¶ 1, 8.

<sup>190</sup> *Id.* at ¶ 8.

<sup>191</sup> *Id.* at ¶¶ 8, 10.

<sup>192</sup> *Id.* at ¶ 6.

Mr. Pienack has been an avid surfer since 1964 and has regularly surfed the waters near Diablo Canyon for over 20 years.<sup>193</sup> As Chair of the San Luis Obispo Chapter of the Surfrider Foundation from 2008-2012, Mr. Pienack has worked to protect and restore the coastal environment around Diablo Canyon.<sup>194</sup> An earthquake at Diablo Canyon would adversely affect these recreation and conservation interests.<sup>195</sup>

### **Gail Jacobson**

Gail Jacobson owns a home in San Luis Obispo, California, approximately seven miles from Diablo Canyon, where she raised three children and has lived with her husband since 1975.<sup>196</sup> Ms. Jacobson, a retired biochemist and professor at California Polytechnic State University at San Luis Obispo, also owns a studio apartment on her property, which she rents to a lessee. This rental income, which is important to support the Jacobsons' retirement, would be threatened by a radiation leak at Diablo Canyon.<sup>197</sup> Ms. Jacobson is particularly concerned about whether she, her husband, and their son, who is disabled, would be able to safely navigate the crowded roads leading away from Diablo Canyon in order to evacuate the area in the event of a nuclear accident at the plant.<sup>198</sup> A radiation leak at Diablo Canyon caused by an earthquake

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<sup>193</sup> *Id.* at ¶ 9.

<sup>194</sup> *Id.* at ¶ 11.

<sup>195</sup> *Id.* at ¶¶ 12-13.

<sup>196</sup> Jacobson Decl., at ¶¶ 1, 7.

<sup>197</sup> *Id.* at ¶ 7.

<sup>198</sup> *Id.* at ¶ 5.

would adversely affect the value of Ms. Jacobson's home and her ability to rent the studio apartment.<sup>199</sup>

Ms. Jacobson and her husband have used the natural environment around Diablo Canyon many times for hiking and camping.<sup>200</sup> As members of several environmental organizations in addition to FoE, including Greenpeace and a local land conservancy, Ms. Jacobson and her husband have devoted their time and resources to local environmental causes.<sup>201</sup> Ms. Jacobson is a member of Mothers for Peace, a San Luis Obispo-based organization that since 1969 has protested safety- and environmental-related issues at Diablo Canyon.<sup>202</sup> Ms. Jacobson founded the organization Concerned Cal Poly Faculty and Staff to protest the construction of Diablo Canyon in the 1970s.<sup>203</sup> Ms. Jacobson has demonstrated an interest in recreating in and conserving the natural environment around Diablo Canyon. These interests are harmed by continued operation of the plant without adequate assurance of seismic safety.<sup>204</sup>

### **Jill Denton**

Jill Denton owns a home in Los Osos, California, approximately eight miles from Diablo Canyon, with her spouse and their several pets.<sup>205</sup> Ms. Denton, who is a licensed marriage and family therapist, has lived in her current home with her spouse since 1994 and in Los Osos since

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<sup>199</sup> *Id.* at ¶ 9.

<sup>200</sup> *Id.* at ¶ 8.

<sup>201</sup> *Id.* at ¶ 10.

<sup>202</sup> *Id.* at ¶ 10; *see also* Mothers for Peace, "About Us," <http://mothersforpeace.org/data/AboutUs>.

<sup>203</sup> *Id.* at ¶ 10.

<sup>204</sup> *Id.* at ¶¶ 8, 10, 11, 12.

<sup>205</sup> Denton Decl., at ¶¶ 1, 5.

1992.<sup>206</sup> Ms. Denton's spouse is rector of Saint Benedict's Episcopal Church in Los Osos.<sup>207</sup> As a result of her spouse's leadership role at Saint Benedict's, both Ms. Denton and her spouse regularly care for parishioners who require extra assistance, particularly elderly and home-bound citizens.<sup>208</sup> The health, safety, and well being of Ms. Denton, her spouse, and the Saint Benedict's flock will be adversely affected by a radiation leak at Diablo Canyon.<sup>209</sup> Only two roads lead out of Los Osos, which would likely make timely evacuation in the event of an accident difficult.<sup>210</sup>

Ms. Denton owns numerous properties in Los Osos, the value of which would be adversely affected by an accident at Diablo Canyon. These properties include her home on 13th Street, a lot on 8th Street, and a multi-unit building on 9th Street.<sup>211</sup> The 9th Street property houses Ms. Denton's counseling practice and several other units that she rents to other tenants.<sup>212</sup> The value of each of these properties, the ability to rent her units in the 9th Street property, and the assets of her counseling practice will be adversely affected by a radiation leak at Diablo Canyon.<sup>213</sup> An accident would also profoundly affect tourism in and around Los Osos, resulting

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<sup>206</sup> *Id.* at ¶¶ 1, 5.

<sup>207</sup> *Id.* at ¶ 6.

<sup>208</sup> *Id.* at ¶ 6.

<sup>209</sup> *Id.* at ¶¶ 6-7.

<sup>210</sup> *Id.* at ¶ 7.

<sup>211</sup> *Id.* at ¶ 8.

<sup>212</sup> *Id.* at ¶ 8.

<sup>213</sup> *Id.* at ¶ 8.

in negative impacts on the local economy.<sup>214</sup> The value of Ms. Denton’s counseling practice would diminish as a result of clients moving away.<sup>215</sup>

Ms. Denton moved to Los Osos because of its unique natural environment, and she and her spouse recreate in the natural environment around Diablo Canyon “almost every day,” including walking in the Irish Hills and near Montana De Oro and kayaking in waters nearby Diablo Canyon.<sup>216</sup> Ms. Denton and her spouse have devoted extensive time and resources to advocating for protecting the environment around Diablo Canyon.<sup>217</sup> Ms. Denton has supported other environmental organizations besides FoE, including Mothers for Peace, the Land Conservancy of San Luis Obispo, the Sierra Club, and the Morro Bay National Estuary Program.<sup>218</sup> In addition to supporting conservation organizations, Ms. Denton and her spouse have maintained local trails and studied water quality in the nearby Morro Bay watershed.<sup>219</sup> Ms. Denton has also protested Diablo Canyon’s operation since the 1980s.<sup>220</sup> Through these activities, Ms. Denton has demonstrated an interest in recreating in and conserving the natural environment around Diablo Canyon. These interests are harmed by continued operation of the plant without adequate assurance of seismic safety.<sup>221</sup>

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<sup>214</sup> *Id.* at ¶ 10.

<sup>215</sup> *Id.* at ¶ 10.

<sup>216</sup> *Id.* at ¶ 9.

<sup>217</sup> *Id.* at ¶¶ 10-11.

<sup>218</sup> *Id.* at ¶ 11.

<sup>219</sup> *Id.* at ¶ 11.

<sup>220</sup> *Id.* at ¶ 11.

<sup>221</sup> *Id.* at ¶¶ 12-13.

**Thomas Danfield**

Thomas Danfield and his wife have lived in Los Osos, California, since 1990 and currently own a home approximately eight miles north of Diablo Canyon.<sup>222</sup> Mr. Danfield and his wife also own approximately 32 acres of land in the nearby Huasna Valley, about 16 miles from Diablo Canyon, where they intend to build a home.<sup>223</sup> Prevailing winds would blow leaked radiation from Diablo Canyon toward Mr. Danfield's Huasna Valley property.<sup>224</sup> Beyond posing a risk to Mr. Danfield's health and welfare, a radiation release from Diablo Canyon would adversely affect the market value of both properties.<sup>225</sup>

Mr. Danfield, who moved to Los Osos because of its beautiful natural environment, frequently enjoys hiking in the area around Diablo Canyon and kayaking in the nearby Morro Bay.<sup>226</sup> Mr. Danfield also enjoys other activities that depend on the well being of the natural environment around Diablo Canyon, including the annual Zongo Yachting Cup.<sup>227</sup> The area also hosts a number of other outdoor activities, including concerts, art shows, street fairs, and sport fishing.<sup>228</sup> As members of FoE and the Sierra Club, both Mr. Danfield and his wife have worked to conserve the natural environment around Diablo Canyon and have regularly participated in the Surfrider Foundation's annual Morro Bay beach cleanup.<sup>229</sup> Each has also attended and

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<sup>222</sup> Danfield Decl., at ¶¶ 1, 5.

<sup>223</sup> *Id.* at ¶ 8.

<sup>224</sup> *Id.* at ¶ 8.

<sup>225</sup> *Id.* at ¶¶ 8, 12, 13.

<sup>226</sup> *Id.* at ¶ 9.

<sup>227</sup> *Id.* at ¶ 9.

<sup>228</sup> *Id.* at ¶ 10.

<sup>229</sup> *Id.* at ¶ 11.

participated in public meetings to protect nearby Montana de Oro and Pismo Dunes from environmental threats.<sup>230</sup>

Mr. Danfield and his wife have demonstrated robust interests in recreating in and conserving the natural environment around Diablo Canyon. Continued operation of the plant without adequate assurance that it is able to shut down following an earthquake on the Shoreline Fault poses a substantial risk of injury to these interests.<sup>231</sup> A release of radiation from the plant would adversely affect these interests.

**Elizabeth Brousse**

Elizabeth Brousse lives in Templeton, California, approximately 27 miles from Diablo Canyon.<sup>232</sup> Ms. Brousse is a retired educator and has taught at the kindergarten, high school, and community college levels, and at the San Francisco County Jail.<sup>233</sup> As a member of the Board of Mothers for Peace, Ms. Brousse has worked to expand the evacuation zone around Diablo Canyon and to improve fire protection safety mechanisms.<sup>234</sup> Ms. Brousse has also regularly attended NRC public meetings and local board of supervisors meetings regarding Diablo Canyon safety- and environment-related issues.<sup>235</sup> As a member of other environmental advocacy groups in addition to FoE, including the Sierra Club, Union of Concerned Scientists, Physicians for

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<sup>230</sup> *Id.* at ¶ 11.

<sup>231</sup> *Id.* at ¶ 12.

<sup>232</sup> Brousse Decl., at ¶¶ 1, 5.

<sup>233</sup> *Id.* at ¶ 5.

<sup>234</sup> *Id.* at ¶ 10.

<sup>235</sup> *Id.* at ¶ 10.

Social Responsibility, and the League of Conservation Voters, Ms. Brousse has demonstrated her interest in conserving the environment around the plant.<sup>236</sup>

By regularly hiking in the hills above Diablo Canyon and along the coast near the plant, Ms. Brousse has a demonstrated interest in recreating in the natural environment around the plant.<sup>237</sup> Since 1995, Ms. Brousse has volunteered as a docent at both the Morro Bay Natural History Museum and the Pismo Beach Monarch Butterfly Grove.<sup>238</sup> A radiation leak at Diablo Canyon would substantially imperil these institutions and would prevent Ms. Brousse from further volunteer work.<sup>239</sup> Diablo Canyon's continued operation without adequate assurance of seismic safety would adversely affect Ms. Brousse's recreation and conservation interests in the natural environment around Diablo Canyon.<sup>240</sup>

i. *Injury*

Each of the Declarants has established that he or she is at risk of serious health effects caused by exposure to radioactivity if a seismic event damages the reactor and causes radiation to leak into the environment.<sup>241</sup> The continued operation of Diablo Canyon without the seismic analysis or public adjudicatory hearing required by the AEA presents a serious risk of harm to the Declarants, each of whom lives close to Diablo Canyon.

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<sup>236</sup> *Id.* at ¶ 10.

<sup>237</sup> *Id.* at ¶ 8.

<sup>238</sup> *Id.* at ¶ 8.

<sup>239</sup> *Id.* at ¶¶ 9, 11, 12.

<sup>240</sup> *Id.* at ¶¶ 8, 9, 11, 12.

<sup>241</sup> Pienack Decl., at ¶ 7; Jacobson Decl., at ¶ 6; Denton Decl., at ¶ 7; Danfield Decl., at ¶ 7; Brousse Decl., at ¶ 7.



In addition to risking the health effects of radiation exposure, the Declarants would suffer substantial devaluation of their properties in the event of a radiation leak.<sup>242</sup> Many of the Declarants would suffer losses to the value of their businesses or lose rental income.<sup>243</sup>

Each Declarant has a demonstrated interest in protecting and recreating in the natural environment around Diablo Canyon, and has established that a radiation leak at Diablo Canyon caused by an earthquake would adversely affect these interests.<sup>244</sup> The Declarants have further established that these interests are harmed and will continue to be harmed by Diablo Canyon's continued operation without adequate assurance of seismic safety, and by the NRC's failure to provide a public hearing with regard to analysis of the risk to the plant posed by the Shoreline Fault.<sup>245</sup> Each Declarant also describes his or her interest in open government and corporate decision making, which stands to be adversely affected by this proceeding.<sup>246</sup> Each of the above-described interests is independently sufficient to satisfy the injury element of the standing analysis.<sup>247</sup>

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<sup>242</sup> Each of the Declarants except Ms. Brousse has alleged that he or she owns one or more properties that would suffer a substantial decline in value caused by a radiation leak at Diablo Canyon. *See* Pienack Decl., at ¶¶ 1, 8, 12, 13 ; Jacobson Decl., at ¶¶ 1, 7, 9, 11, 12; Denton Decl., at ¶¶ 1, 8, 12, 13; Danfield Decl., at ¶¶ 1, 8, 12, 13.

<sup>243</sup> Pienack Decl., at ¶¶ 8, 12, 13; Jacobson Decl., at ¶¶ 7, 9, 11, 12; Denton Decl., at ¶¶ 8, 12, 13.

<sup>244</sup> Pienack Decl., at ¶ 12; Jacobson Decl., at ¶ 11; Denton Decl., at ¶ 12; Danfield Decl., at ¶ 12; Brousse Decl., at ¶ 11.

<sup>245</sup> Pienack Decl., at ¶ 13; Jacobson Decl., at ¶ 12; Denton Decl., at ¶ 13; Danfield Decl., at ¶ 13; Brousse Decl., at ¶ 12.

<sup>246</sup> Pienack Decl., at ¶ 13; Jacobson Decl., at ¶ 12; Denton Decl., at ¶ 13; Danfield Decl., at ¶ 13; Brousse Decl., at ¶ 12.

<sup>247</sup> *See, e.g., Fla. Power & Light Co. (Turkey Point, Units 3 and 4)*, 53 NRC 138, 150 (2001) (finding petitioner's past efforts to protect the land surrounding nuclear power plant, use of that land for recreation, and assertion that extending license of units "could increase the probability and consequences

Additionally, the Declarants have suffered the loss of their procedural rights to a hearing, as provided by the section 189a of the AEA, 42 U.S.C. § 2239(a). By proceeding through a *de facto* rather than a *de jure* license amendment proceeding, the NRC has denied Declarants their rights to an adjudicatory hearing. As the Commission has recognized, “[t]he loss of the rights to notice, opportunity for a hearing, and opportunity for judicial review, constitutes a discrete and palpable—not hypothetical—injury.”<sup>248</sup> “Indeed, procedural rights are ‘special,’ and the ‘person who has been accorded a procedural right to protect his concrete interests can assert that right without meeting all the normal standards for redressability and immediacy.’”<sup>249</sup>

For this reason, the Commission has found that the loss of a procedural right, by itself, is sufficient to satisfy the injury-in-fact element of the standing inquiry, “so long as the procedures in question are designed to protect some threatened concrete interest.”<sup>250</sup> Here, the Declarants’ procedural right is linked directly to a threatened release of radiation, adversely affecting Declarants’ health and safety, the value of their properties, and their recreation, aesthetic, and conservation interests in the natural environment around Diablo Canyon.<sup>251</sup> Thus, the

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of a nuclear accident at the facility, thereby increasing the threat of injury to her, her family, and property,” to be sufficient to establish standing to intervene).

<sup>248</sup> *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 93 (1993).

<sup>249</sup> *Id.* at 94 n.9 (quoting *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 572 n.7 (1992)).

<sup>250</sup> *Id.* at 94.

<sup>251</sup> *See Perry*, 38 NRC at 94 (finding petitioners’ fear that the denial of a hearing would lead to relaxed safety standards at the plant, potentially leading to a release of radioactive material into the environment, to be sufficient for standing purposes).

Declarants, and therefore Petitioner, have suffered a concrete and particularized injury by the agency's proceeding through a *de facto* license amendment proceeding.<sup>252</sup>

ii. *Traceability*

The *de facto* license amendment proceeding characterized above has deprived Declarants, and thus FoE, of an opportunity for notice and a public hearing, as provided in the AEA. As described above, Petitioner will suffer a concrete and particularized risk of injuries from PG&E's continued operation of Diablo Canyon without conducting the required seismic analysis.<sup>253</sup> The harm caused to Declarants' recreation and aesthetic injuries was caused by the Staff's permitting PG&E to avoid the license amendment process and a public adjudicatory hearing, as required by the Commission's own regulations.

iii. *Redressability*

The Commission is capable of granting Petitioner redress by convening a public adjudicatory hearing in which Petitioner has the opportunity to participate as a party. The Commission also has the ability and authority to suspend operations at Diablo Canyon, as requested by this Petition, pending such a hearing and a finding, after an adequate assessment of the plant's seismic safety, that the plant can safely withstand all postulated earthquakes which could occur at the plant. A public hearing will assure that the Commission obtains the benefit of

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<sup>252</sup> See *Cleveland*, 38 NRC at 94 (finding that petitioners' alleged "loss of the ability under [Atomic Energy Act] section 189a to meaningfully participate" in a proceeding was sufficient for standing purposes).

<sup>253</sup> So long as a petitioner falls within the zone of interests protected by the statute, and alleges harm that is "concrete and particularized," rather than "conjectural" or "hypothetical," the "requisite injury may either be actual or threatened." *Crow Butte Res., Inc.* (North Trend Expansion Project), LBP-08-6, 67 NRC 241, 271 (2008) (emphasis added).

the testimony of Petitioner's witnesses and will provide interested parties with an opportunity to participate in the license amendment proceeding, as required by the AEA.

iv. *Zone Of Interests*

The Declarants' interests plainly fall within the zone of interests protected by the AEA and its implementing regulations.<sup>254</sup>

3. Friends Of The Earth Presumptively Has Standing To Intervene Based On The Members' Geographical Proximity To Diablo Canyon

In addition to the traditional elements of standing, Petitioner has standing to intervene based on the "proximity presumption," as set forth in Commission decisions. Under longstanding Commission precedent, if a petitioner resides within 50 miles of a nuclear plant, he or she, and his or her representing organization, presumptively has standing to intervene in certain proceedings, even if petitioner has failed to allege some specific injury-in-fact.<sup>255</sup>

In considering a petition to intervene in a reactor construction permit proceeding or an operating license proceeding, the Commission generally applies the proximity presumption without requiring any further showing by a petitioner. In license amendment proceedings, for a

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<sup>254</sup> See *Sequoyah Fuels Corp. and General Atomics* (Gore, Oklahoma Site), 39 NRC 54, 75 (1994) (determining that "the health and safety interests of its members are within the AEA-protected zone of interests"); *Babcock and Wilcox* (Apollo, Pennsylvania Fuel Fabrication Facility), 37 NRC 72, 80 (1993) (holding that specified "health, safety, and environmental concerns . . . clearly come within the zone of interests safeguarded by the AEA").

<sup>255</sup> *Fla. Power & Light Co.* (Turkey Point, Units 3 and 4), LBP-01-6, 53 NRC 138, 147 (2001), *aff'd*, 54 NRC 3; see also *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-107, 6 AEC 188, 190 (1973); *Cleveland*, 38 NRC at 95.

petitioner to gain the benefit of the presumption, he or she additionally must show that “the proposed action involves an obvious potential for offsite consequences.”<sup>256</sup>

This additional requirement is satisfied by a petitioner’s allegation that the proposed action at issue was “safety-related.”<sup>257</sup> In *Perry*, petitioners sought to intervene in a license amendment proceeding in which the licensee sought to delete the reactor’s material specimen withdrawal schedule from the plant’s technical specifications and transfer the schedule to the facility’s FSARU. Even though the parties and the Commission agreed that the proposed license amendment presented no significant hazard, the Commission agreed with petitioners that it was entitled to the benefit of the geographical proximity presumption because the proposed amendment was “safety-related.”<sup>258</sup> The Commission reasoned that the withdrawal schedule, which “exists to insure that the structural integrity of the reactor vessel is monitored,” related directly to the “material condition of the plant’s reactor vessel.” The Commission therefore found that the proposed amendment “bears on the health and safety of those members of the public who reside in the plant’s vicinity” and, thus, involved an “obvious potential for offsite consequences.”<sup>259</sup> The Commission therefore concluded that petitioners had established standing based on the geographical proximity presumption.<sup>260</sup>

In the present matter, four of the five Declarants live within eight miles from Diablo Canyon, and the fifth lives 27 miles from the plant—all well within the 50-mile radius required

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<sup>256</sup> *Perry*, 38 NRC at 95 (internal quotation marks omitted).

<sup>257</sup> *Id.* at 95-96.

<sup>258</sup> *Id.*

<sup>259</sup> *Id.* at 95.

<sup>260</sup> *Id.* at 96.

by the proximity presumption.<sup>261</sup> Petitioner has alleged that the *de facto* license amendment proceeding in this case concerns how Diablo Canyon is required to evaluate new seismic information and whether the plant's SSCs can withstand ground shaking caused by the Shoreline Fault. It is beyond dispute that these seismic concerns are related to the "health and safety of those members of the public who reside in the plant's vicinity."<sup>262</sup> The license amendment clearly "involves an obvious potential for offsite consequences."<sup>263</sup> Petitioner has thus established that, in addition to the traditional elements of standing, it has standing based on the geographical proximity presumption.

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Construing this Petition in favor of FoE, as it must, the Commission must conclude that FoE properly has standing for admission of its contentions.<sup>264</sup> Each of the Declarants, and thus FoE, has established that he or she has standing to intervene in his or her own right based on two independent grounds. First, each Declarant has established each of the traditional elements of standing—namely, that he or she has suffered an injury-in-fact, that the injury was caused by the *de facto* license amendment proceeding, that this injury would be redressed by a favorable decision by the Commission, and that his or her concerns fall within the zone of interests protected by the AEA and implementing regulations. Second, FoE is entitled to the benefit of the geographical proximity presumption. The Declarants have provided their names and

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<sup>261</sup> Pienack Decl., at ¶ 5 (eight miles); Jacobson Decl., at ¶ 4 (seven miles); Denton Decl., at ¶ 5 (eight miles); Danfield Decl., at ¶ 5 (eight miles); Brousse Decl., at ¶ 5 (27 miles).

<sup>262</sup> *Perry*, 38 NRC at 95.

<sup>263</sup> *Id.*

<sup>264</sup> *Vermont Yankee*, 60 NRC at 553.

addresses and have authorized FoE, of which they are members, to intervene in this proceeding on their behalf.

## VII. TIMELINESS

Commission regulations require that a petition to intervene in a license amendment proceeding be timely filed.<sup>265</sup> This requirement presumes that a proceeding, initiated by a Federal Register notice or other posting on the Commission's website, has been formally noticed and commenced. Here no such formal proceeding has been commenced; indeed, the Staff appears to be pursuing a *de facto* license amendment precisely to avoid the notice and opportunity for hearing that are required to amend a license. Thus, § 2.309(b) does not apply. Even if the requirements of § 2.309(b) do apply, however, and if the Commission were to determine that this Petition has failed to meet the applicable deadline, FoE has demonstrated "good cause" necessary for the Commission to entertain an untimely petition.<sup>266</sup>

Imposing a strict timeliness requirement in such circumstances would produce an absurd result.<sup>267</sup> Where there has been no notice of a formal license amendment request, requiring a party to timely petition for intervenor status following the *de facto* amendment proceeding would create a regulatory "catch-22." A licensee or the Commission could easily avoid the AEA's public hearing requirement by merely amending an operating license through a *de facto* license

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<sup>265</sup> 10 C.F.R. § 2.309(b).

<sup>266</sup> *See* 10 C.F.R. § 2.309(c).

<sup>267</sup> Such a result would also be contrary to the Commission's policy of transparency as articulated by Chair Macfarlane. *See, e.g.*, Alison Macfarlane, Chairman, NRC, Speech, "Life after Fukushima: 'The New Normal,'" Nuclear Energy Institute, Washington, DC, May 14, 2013, *available at* <http://pbadupws.nrc.gov/docs/ML1313/ML13134A327.pdf> ("Transparency and openness are essential to show both the industry's and the agency's processes can be trusted to be protective of public health and safety.")

amendment; any party seeking to intervene in such a *de facto* license amendment proceeding would not be aware that a proceeding was underway, would miss the regulatory timeliness deadlines, and therefore would never be able to intervene. If the public hearing provision of section 189a is to serve its intended purpose, interested parties must be afforded an opportunity to request a hearing before the Staff takes action that would alter the terms of the operating license.<sup>268</sup>

1. Because The Commission Staff Are Pursuing A *De Facto* Licensing Proceeding Without Notice, 10 C.F.R. § 2.309(b) Does Not Apply

10 C.F.R § 2.309(b)(3) provides, with certain exceptions, that where notice of the agency action is published in the Federal Register, a petition to intervene must be filed within the time period specified in the notice or, if none is specified, within 60 days.<sup>269</sup> No Federal Register notice of the commencement of a license amendment proceeding for Diablo Canyon has been published. Subsection (b)(3) therefore does not apply.

Where no Federal Register notice is published, a petition must be filed within 60 days “after publication of notice on the NRC Web site”<sup>270</sup> or within 60 days “after the requestor receives actual notice of a pending application, but no more than [60] days after agency action on

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<sup>268</sup> *C.f. Citizens Awareness Network*, 59 F.3d at 294-95 (“[I]f section 189(a) is to serve its intended purpose, surely it contemplates that parties in interest be afforded a meaningful opportunity to request a hearing *before* the Commission *retroactively* reinvents the terms of an extant license by voiding its implicit limitations on the licensee's conduct.”).

<sup>269</sup> 10 C.F.R. § 2.309(b)(3).

<sup>270</sup> When accessed, the URL indicated in § 2.309(b)(4), <http://www.nrc.gov/public-involve/major-actions.html>, indicates that the page has been moved to another URL, <http://www.nrc.gov/about-nrc/regulatory/adjudicatory/hearing-license-applications.html>.



the application.”<sup>271</sup> There has been no publication of notice on the Commission’s website of a license amendment request or of commencement of a proceeding. Review of the website indicated in subsection (b)(4) indicates no posting regarding a hearing opportunity or pending license application with regard to Diablo Canyon.<sup>272</sup>

The second clause of subsection (b)(4) sets a deadline of 60 days after petitioner receives actual notice of, or after agency action on, a pending application. PG&E has withdrawn its application, and therefore this subsection does not apply.<sup>273</sup> The very purpose of pursuing a *de facto* license amendment rather than a proper license amendment proceeding appears to be to avoid giving the kind of notice presumed in the Commission’s regulations. Where the event triggering the 60-day clock has not and presumably will not occur, this provision cannot provide a deadline for filing. FoE has received no actual notice of a pending application because, of course, no application has been filed.

For these reasons, the regulatory filing deadlines in § 2.309(b) do not apply to this action.

## 2. The “Good Cause” Provisions Of 10 C.F.R. § 2.309(c) Do Not Apply

If a party seeking to intervene has missed the applicable deadline established in § 2.309(b), the Commission may entertain the petition upon “a determination by the presiding officer that a participant has demonstrated good cause.” Section 2.309(c)(1) provides:

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<sup>271</sup> 10 C.F.R. § 2.309(b)(4).

<sup>272</sup> As of July 25, 2014.

<sup>273</sup> License Amendment Request 11-05 has been withdrawn pursuant to 10 C.F.R. § 2.107. This application has been terminated and therefore cannot serve as the basis for intervention.

(1) Determination by presiding officer. Hearing requests, intervention petitions, and motions for leave to file new or amended contentions *filed after the deadline in paragraph (b)* of this section will not be entertained absent a determination by the presiding officer that a participant has demonstrated good cause by showing that:

(i) The information upon which the filing is based was not previously available;

(ii) The information upon which the filing is based is materially different from information previously available; and

(iii) The filing has been submitted in a timely fashion based on the availability of the subsequent information.<sup>274</sup>

Section 2.309(c) and its “good cause” standard are clearly premised upon a party having missed the deadlines set forth in subsection (b). This provision does not require FoE to establish good cause in order for this Petition to be entertained. By its very terms, subsection (c) provides that “intervention petitions . . . filed after the deadline in paragraph (b) . . . will not be entertained [unless] a participant has demonstrated good cause.” In order for this provision to apply, a petitioner must have missed the applicable deadline in paragraph (b). For the reasons stated above, by its very terms paragraph (b) and the deadlines it provides do not apply. There is therefore no “deadline” in paragraph (b) for Petitioner to miss. Since no deadline has been missed, paragraph (c) does not apply. Petitioner is therefore not required to show good cause under paragraph (c).

3. Even If The “Good Cause” Provisions Of 10 C.F.R. § 2.309(c) Did Apply, This Petition Meets That Standard

Even if the Commission determines that this Petition has failed to meet the applicable deadline under § 2.309(b), FoE has satisfied each of the three elements necessary to show “good

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<sup>274</sup> 10 C.F.R. § 2.309(c) (emphasis added).

cause” based on the recent AP story on August 25, 2014 disclosing Dr. Peck’s Differing Professional Opinion.<sup>275</sup> FoE filed this Petition promptly thereafter—without a doubt in a “timely fashion” after the story.<sup>276</sup> FoE has established that the information upon which this Petition is based was not previously available and that this Petition was filed soon after the information was made available, thus satisfying the first and third elements of the “good cause” test.

The second element requires that the subsequent information be “materially different from information previously available.”<sup>277</sup> Dr. Peck’s DPO, which sets forth 42 pages of previously unavailable information, arguments, and sources, satisfies this element. The document exhaustively compiles the applicable regulatory framework, chronology of events, and summary of NRC’s and PG&E’s relevant actions, and, based on that information, sets forth arguments that reflect the unique position of Dr. Peck as Diablo Canyon’s Senior Resident Inspector during the relevant time period. Together, the assertions and supporting sources made in the DPO provide a substantial basis for this Petition.

In January 2012, approximately a year and a half before the DPO was filed, Dr. Peck filed with the NRC a “Non-Concurrence,” in which he also expressed concern about the NRC’s actions with regard to seismic issues at Diablo Canyon.<sup>278</sup> Despite the similar subject matter, the DPO is more comprehensive and based on such different events that the DPO is “materially

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<sup>275</sup> See 10 C.F.R. § 2.309(c)(1)(i).

<sup>276</sup> See 10 C.F.R. § 2.309(c)(1)(iii).

<sup>277</sup> See 10 C.F.R. § 2.309(c)(1)(ii).

<sup>278</sup> NRC, Dr. Michael Peck, Non-Concurrence NCP-2012-001, ADAMS Accession No. ML120450843 (Jan. 26, 2012).

different” from the Non-Concurrence and other previously available information. The Non-Concurrence, which is six pages in length compared to the DPO’s 42 pages, was filed before key events in these proceedings, including before the NRC implemented the Fukushima Task Force’s recommendations for reevaluating seismic hazards;<sup>279</sup> before the NRC concluded that Diablo Canyon’s existing design basis was sufficient to withstand an earthquake caused by the Shoreline Fault;<sup>280</sup> and before PG&E withdrew License Amendment Request 11-05.<sup>281</sup> The Non-Concurrence addressed none of these three actions, which (particularly the NRC’s conclusion that the plant’s existing design basis is sufficient) constitute the heart of Dr. Peck’s DPO.

Thus, even if the applicable deadline in § 2.309(b) did apply, Petitioner has established good cause for submitting this Petition past that deadline in accordance with § 2.309(c). Accordingly, Petitioner has satisfied the timeliness requirements of § 2.309.

## VIII. CONCLUSION

The Atomic Energy Act requires a public adjudicatory hearing to consider the risks posed by the changes to Diablo Canyon’s licensing basis, which the Commission proposes to make and implement. For the foregoing reasons, Petitioner has shown that it has satisfied the requirements of 10 C.F.R. § 2.309 and that it should be granted a hearing on the contentions it raises. PG&E has failed to discharge its duty under Commission regulations and Diablo Canyon’s current

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<sup>279</sup> NRC Letter, “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 from the Fukushima Dai-Ichi Accident,” ADAMS Accession No. ML12053A340 (Mar. 12, 2012).

<sup>280</sup> NRC Letter, “Diablo Canyon Power Plant, Units Nos. 1 and 2 – NRC Review of Shoreline Fault (TAC Nos. ME5306 and ME5307),” ADAMS Accession No. ML 120730106 (Oct. 12, 2012).

<sup>281</sup> PG&E Letter, “Withdrawal of License Amendment Request 11-05, ‘Evaluation Process for New Seismic Information and Clarifying the Diablo Canyon Power Plant Safe Shutdown Earthquake,’” ADAMS Accession No. ML12300A105 (Oct. 25, 2012).

licensing basis to insure that the plant is operating with an adequate margin of seismic safety. PG&E should be ordered to suspend operations at Diablo Canyon pending (1) conclusion of the process to amend Diablo Canyon's operating license to provide a method to evaluate new seismic data, including the Shoreline Fault, and (2) a demonstration that Diablo Canyon is able to be safely shut down following the occurrence of potential earthquakes that could affect the plant, including an earthquake occurring on the Shoreline Fault.

Respectfully submitted,

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Date: August 26, 2014

CERTIFICATE OF SERVICE

I, Jessica Olson, certify that a copy of the enclosed Petition to Intervene and Request for a Hearing and Notice of Appearance were served on each of the following by electronic mail on August 26, 2014:

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Date: August 26, 2014