

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Application of Pacific Gas and Electric  
Company to Recover the Costs Associated  
With Renewal of the Diablo Canyon Power  
Plant Operating Licenses

Application No. 10-01-022

**TESTIMONY OF ROCHELLE BECKER REPRESENTING THE ALLIANCE  
FOR NUCLEAR RESPONSIBILITY, SIERRA CLUB, CALPIRG,  
ENVIRONMENT CALIFORNIA RESEARCH AND POLICY CENTER  
(A4NR, ET AL)**

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## **SUMMARY AND CONCLUSIONS:**

On January 28, 2011, Administrative Judge Robert Barnett, in the matter of Application No. 10-01-022, issued “ADMINISTRATIVE LAW JUDGE’S RULING SETTING HEARING ON THE PROPOSED SETTLEMENT AND OTHER ISSUES. He writes:

In reviewing the proposed settlement, I am of the opinion that it does not consider all of the issues raised in the June 23, 2010 Scoping Memo. More particularly, the Assigned Commissioner Scoping Memo says: The most contentious issue raised at the PHC was whether the Commission should suspend consideration of this application until after PG&E completes the seismic studies recommended by the CEC. I am not prepared at this time to suspend consideration of this application pending completion of additional seismic studies, but I will permit evidence on this issue and make a recommendation to the Commission after submission.

The issues to be considered within the scope of this proceeding are:

- Should funding for PG&E’s license renewal application be resolved before the seismic studies recommended by the CEC are completed?

Based on the Scoping Memo, I find that there remain two issues to be resolved in this proceeding which require a hearing:

1. Whether the settlement agreement should be adopted?
2. Whether funding should be authorized before seismic studies are completed?

In response, A4NR et al, request that:

1. The settlement not be adopted
2. No funding should be authorized before seismic studies are completed.

The requirement that PG&E first complete the seismic studies recommended by CEC as authorized by AB 1632 can first be traced to CPUC Decision D.07-03-044:

We will require PG&E to submit by no later than June 30, 2011, an application on whether to pursue license renewal. The application shall include PG&E's license renewal study and shall address (1) whether renewal of the licenses is cost effective and in the best interests of PG&E's ratepayers, (2) **the CEC's AB 1632 assessment**, and (3) any legislative framework that may be established for reviewing the costs and benefits of license renewal.<sup>98</sup> As stated previously, it is our intent that the proceeding in 2011 will result in a decision on whether to pursue license renewal based on circumstances at that time, and that the results of the proceeding will be incorporated into the CEC's 2013 IEPR and the Commission's 2014 LTPP.<sup>1</sup> [emphasis added]

Absent PG&E's obligation to fully develop all AB 1632 assessment related issues which were specifically linked to the PG&E's rate case D.07-03-044, the Commission will not be able to adequately and appropriately exercise its authority to fund and oversee Diablo Canyon's license extension.

Further reinforcement for the position of the CPUC as evidenced in D.07-03-044 can be found in a letter from CPUC President Michael Peevey to PG&E CEO Peter Darbee on June 25, 2009, in which President Peevey states:

PG&E's rate case, D. 07-03-044, specifically linked PG&E's license renewal feasibility study for Diablo Canyon to the AB 1632 assessment and PG&E is obligated to address the above itemized issues in its plant relicensing application. **This commission will not be able to adequately and appropriately exercise its authority to fund and oversee Diablo Canyon's license extension without these AB 1632 issues being fully developed.** [emphasis added]

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<sup>1</sup> Decision 07-03-044 at Ordering Paragraph 10. March 15, 2007

To better understand the implications of President Peevey's request for AB 1632 issues to be "fully developed," here are the seismic recommendations of the CEC's AB 1632 report, from the final draft of November, 2008:<sup>2</sup>

- The California Energy Commission recommends that PG&E should use three-dimensional geophysical seismic reflection mapping and other advanced techniques to explore fault zones near Diablo Canyon. PG&E should report on their progress and their most recent seismic vulnerability assessment for Diablo Canyon in the 2009 IEPR. This action will supplement PG&E's Long Term Seismic Program and help resolve uncertainties surrounding the seismic hazard at Diablo Canyon. Given the potential for an extended plant shutdown following a major seismic event, the Energy Commission, in consultation with appropriate state agencies, should evaluate whether these studies should be required as part of the Diablo Canyon license renewal feasibility study for the CPUC.
- PG&E should assess the implications of a San Simeon-type earthquake beneath Diablo Canyon.<sup>6</sup> This assessment should include expected ground motions and vulnerability assessments for safety-related and non safety-related plant systems and components that might be sensitive to long-period motions in the near field of an earthquake rupture.
- The Energy Commission, in cooperation with other appropriate state agencies, should consider the relevance of the USGS National Seismic Hazard Mapping Project models and the UCERF-2 database in the context of studies required as part of the license renewal feasibility assessment at Diablo Canyon for the CPUC. Updated seismic hazard analyses incorporating these inputs would provide additional information for regulators and the public regarding the seismic hazard at the plant site.

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<sup>2</sup> AN ASSESSMENT OF CALIFORNIA'S NUCLEAR POWER PLANTS: AN ASSESSMENT OF CALIFORNIA'S NUCLEAR POWER PLANTS: AB 1632 (NOVEMBER 2008 CEC-100-2008-009-CM) pp. 6-7

An additional requirement of relevance also appears on page 13 of the CEC AB 1632 report, and is also referenced in the June 25, 2009 letter of President Peevey:

- As part of their license renewal feasibility analyses for the CPUC, PG&E and SCE should summarize the lessons learned from the Kashiwazaki\_Kariwa plant experience in response to the 2007 earthquake and any implications for Diablo Canyon and SONGS, including whether any additional pre-planning or mitigation could minimize plant outage times following a major seismic event.

It should be noted that recommendation number one (bullet point one) on the preceding page states:

“Given the potential for an extended plant shutdown following a major seismic event, the Energy Commission, in consultation with appropriate state agencies, should evaluate whether these studies should be required as part of the Diablo Canyon license renewal feasibility study for the CPUC.”

The Energy Commission did consult with appropriate state agencies, and on March 22, 2010, Energy Commission Vice Chairman and California State Liaison Officer to the Nuclear Regulatory Commission James Boyd sent a letter to CPUC President Michael Peevey, in which he wrote:

The CPUC' s decision in PG&E's 2007 General Rate Case (D07-03-044) requires PG&E to complete a license renewal feasibility study that incorporates the findings and recommendations of the AB 1632 assessments. This decision describes a review process that includes a CPUC proceeding in 2011 that "will result in a decision on whether to pursue license renewal based on circumstances at that time, and that the results of that proceeding will be incorporated into the Energy Commission' s 2013 IEPR and the CPUC' s 2014 LTTP." Your letter to Peter Darbee dated June 15, 2009, directing PG&E to complete the AB 1632 studies as part of their license renewal feasibility studies for Diablo Canyon

reinforced the state's expectations that these studies be completed, so that their findings can be considered during license renewal reviews.

I was disappointed to learn that PG&E had ignored the Energy Commission's recommendations and the CPUC's directives and instead had filed for license renewal with the NRC on November 23, 2009, before they had completed the AB 1632-recommended studies. However, PG&E's application to the NRC does not make the studies any less valuable. These studies continue to be needed for the Diablo Canyon license renewal feasibility assessment at the CPUC. Absent the studies, important information that is crucial to estimating the costs and benefits of license extension would be missing from the record.

To reiterate, in light of continuing uncertainty about the seismic hazard at Diablo Canyon and the need to maintain reliable operation of California's electrical supply and to minimize customer rate impacts, I support the expeditious approval of PG&E's application to perform the advanced seismic studies, as recommended in the AB 1632 Report and 2008 IEPR. Furthermore, in keeping with earlier recommendations of the Energy Commission and policy directives of the CPUC referenced above, I suggest that the CPUC require that these studies be completed, peer reviewed, and made part of PG&E's license renewal feasibility studies before further action is taken on their license renewal.

I believe these advanced seismic studies are essential to fully evaluate the costs and benefits of Diablo Canyon's license extension and should begin as soon as possible.

In addition to CEC Commissioner Boyd, the Executive Director of the CPUC, Paul Clanon sent a letter to Kimberly Green, Project Manager, Diablo Canyon License Renewal at the Nuclear Regulatory Commission (NRC) on April 5, 2010, in which he reiterates the need for PG&E to address the AB 1632 assessment:

In a decision dated March 15, 2007, addressing PG&E's 2007 General Rate Case, the CPUC approved a request by PG&E to fund a Diablo Canyon license renewal feasibility study. In issuing our approval, the CPUC directed PG&E to incorporate the findings and recommendations from the CEC's AB 1632 assessment into its Diablo Canyon license renewal feasibility study. The CPUC also required PG&E to submit an application by June 30, 2011 to the CPUC on whether to pursue license renewal for DCPD and address the CEC's AB 1632 assessment.

Mr. Clanton concludes his letter to the NRC:

The CPUC encourages the NRC to fully consider the findings from any studies that PG&E conducts as the NRC reviews PG&E relicensing application. The seismic studies in PG&E's application, if approved by the CPUC, could provide valuable information to assist the NRC.

His statement is significant as it alludes to the role of the federal NRC in the license renewal process. As another state regulatory agency, the California Coastal Commission has stated in a letter from Alison J. Dettmer, Deputy Director, Energy, Ocean Resources and Federal Consistency Division to Ms. Kimberly Green, Diablo Canyon License Renewal, U.S. NRC, dated March 12, 2010:

Renewal of PG&E's NRC operating license for the Diablo Canyon Power Plant is subject to subject to a federal consistency review by the Coastal Commission, pursuant to the requirements of the California Coastal Management Program (CCMP) and the associated federal regulations at 15 CFR 930 *et seq.* PG&E submitted a consistency certification to the Commission in December 2009; however, as detailed in the attached December 29, 2009 letter from the Commission staff to PG&E, that certification is incomplete, in part due to the need for results from updated seismic studies. As stated in that letter, PG&E must provide the following information to allow the Commission to determine whether the project conforms to the CCMP:...

This letter further goes on to define the requirement of the studies specifically as:

“...characterization of the Hosgri and Shoreline Faults, including fault geometry, seismicity, and sense of movement; the estimates of maximum credible earthquake (from a deterministic perspective) **on these and all other faults** [emphasis added]; the ground shaking expected at the site from such earthquakes; and the deep crustal structure beneath the plant (in particular an evaluation of the “Namson model” of thrust ramps beneath the plant)...and **“as recommended by the Technical Advisory Team established pursuant to AB 1632, ...the three-dimensional seismic data...collected and interpreted as part of this evaluation.”** [emphasis added]

Therefore, even if the NRC itself does not require PG&E to complete any updated seismic studies as outlined in the AB 1632 recommendations for the fulfillment of their federal license renewal application, the California Coastal Commission—a state regulatory agency—*will not be able to grant its required federal equivalency absent completion of recommended AB 1632 license renewal studies.*

In their Testimony dated August 18, 2010, the Division Of Ratepayer Advocates at the CPUC (DRA) references the NRC’s position on seismic issues at Diablo Canyon as the basis for their conclusion that “Funding for PG&E’s Diablo Canyon License Renewal Application Can Be Resolved Before The Seismic Studies Recommended By The CEC Are Complete.” DRA supports their Testimony by quoting an NRC letter to A4NR:

“[the] NRC has concluded that ‘Diablo Canyon nuclear plant’s design would withstand the effects of a potential new fault line off the California coast....a[t] this time, it is not necessary for the NRC staff to delay the reviews it recently



began of the license renewal application submitted by Pacific Gas and Electric (PG&E) for DCPD.”<sup>3</sup>

A4NR disagrees with the position of DRA for the following reason: DRA’s assertion from the NRC that: ”...[a]t this time, it is not necessary for the NRC staff to delay the reviews it recently began of the license renewal application submitted by Pacific Gas and Electric (PG&E) for DCPD” is drawn from a “Letter from NRC to Ms. Rochelle Becker/Alliance for Nuclear Responsibility, July 6, 2010.” The conclusion drawn from that letter was subsequently challenged by the NRC’s own Atomic Safety and Licensing Board (ASLB) in their decision of August 4, 2010.<sup>4</sup> The ASLB writes:

“In conclusion, we rule that, as narrowed, EC-2 presents an admissible contention alleging that PG&E’s ER fails to comply with 10 C.F.R. Part 51 because it fails to address the airborne environmental impacts of an SFP accident at DCNPP caused by an earthquake. *The fate of EC-2 therefore rests with the Commission, which must determine whether to grant a waiver, i.e., whether the new information and earthquake situation at Diablo Canyon constitute special circumstances warranting site-specific consideration of these risks under NEPA. See 10 C.F.R. § 2.335(b), (d).* [emphasis added]

Therefore, the question of whether the new seismic information at Diablo Canyon may be made an admissible part of NRC license renewal awaits further hearings and adjudication by the NRC, which may happen in later 2011. In addition, the full reading of the ASLB decision also raises the question of PG&E’s needing to perform a probabilistic assessment of the new earthquake hazards instead of the deterministic study done in the document cited in footnote 2 of DRA. Until the NRC resolves the issues raised by the ASLB, any conclusions regarding seismic safety at Diablo Canyon are premature and fail to provide an adequate record upon which the CPUC can base a reasonable and prudent decision. This is reinforced by the previously quoted letter of April 5, 2010, in which the

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<sup>3</sup> DRA Direct Testimony, Aug 18, 2010 p.13.

<sup>4</sup> NRC ASLB No. 10-890-01-LR-BD01 August 4, 2010 p. 51.

CPUC Executive Director Clanon informs the NRC, “The seismic studies in PG&E's application, if approved by the CPUC, could provide valuable information to assist the NRC.”

Unlike DRA, in the Direct Testimony of David A. Schissel filed on behalf of The Utility Reform Network (TURN) dated August 18, 2010, TURN questions the future potential financial implications of unknown seismic consequences, stating that:

Indeed, the Atomic Safety & Licensing Board of the NRC has just accepted in The hearings for the relicensing of Diablo Canyon a contention that PG&E's application lacks crucial information on the seismic risks to Diablo Canyon given that the studies of the shoreline fault, identified in 2008, are incomplete. Seismic studies of the newly discovered fault and the potential interaction with the Hosgri fault will not be completed until 2013, as noted above. For this reason, it will be argued that the NRC should wait for the results of the Company's studies before reaching any conclusions about the risks posed by severe earthquakes. It is not unreasonable to expect that PG&E's new studies and surveys will identify the need for additional seismic related upgrades and costs. PG&E has acknowledged that it did not incorporate into its cost effectiveness analysis the risk that a major seismic event could force Diablo Canyon offline for an extended period of time or could lead that additional retrofits or required upgrades. This is a significant omission.<sup>5</sup>

A4NR et al shares the concerns raised by TURN in this part of their Testimony. Furthermore, A4NR et al supports the state of California in its ability to assert the state's right to assure its citizens and ratepayers of a reliable and affordable source of electric generation. Those “rights” are granted by decision of the U.S. Supreme Court.<sup>6</sup> Those are also responsibilities that do not fall under the purview of the NRC. The jurisdictional

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<sup>5</sup> TURN Direct Testimony of David A. Schlissel, August 18, 2010 pp. 12-13

<sup>6</sup> U.S Supreme Court Pacific Gas & Elec. V. Energy Resources Comm'n, U.S. 190 (1983) 461; certiorari to the U.S. Court of Appeals for the 9<sup>th</sup> Circuit No. 81-1945.

authority of the NRC is to ensure that in the event of a seismic disturbance at a nuclear power plant (SSE—Safe Shutdown Earthquake), the reactor components remain operational that are needed to safely shut down the reactor and prevent or mitigate the consequences of accidents which could result in potential offsite exposures.<sup>7</sup> There is no express or implied warranty on the part of the NRC that the reactors be designed to survive the SSE or any seismic event in a reliable or power-generating manner. It is up to our state regulators and legislators to safeguard those functions on behalf of ratepayers.

This approach is described by the author of AB 1632, Dr. Sam Blakeslee, Senator representing the 15<sup>th</sup> District of California, in a speech given September 9, 2010 at the Seismic Workshop of the NRC held in San Luis Obispo, California. His remarks concluded:

In conclusion, we have just experienced the most significant environmental disaster in the history of the nation and that disaster did not occur because the workers didn't work hard, because BP didn't care about safety, or because the concept of drilling was so fundamentally flawed it should never be done anywhere. The failure that we experienced was largely a regulatory failure, a failure that involved a check-the-box mentality, a mentality which may work 90, 95, 99 percent of the time. But there are certain special, unique instances where a regulatory entity needs -- has higher duty to ask harder questions and be sure their analysis is rigorous, robust, and goes beyond checking the box. And that is certainly true in the case of deepwater drilling and it's probably even more true in the case of an aging nuclear power plant in close proximity to large and still-being-quantified faults that are under investigation. So, my comments to the NRC are that they treat this work before them with an extra level of care. That this not just become one of the many scores of plants which are scheduled to be relicensed or scheduled to have certain safety issues looked at routinely, but with an understanding that the stakes are extremely high in a case like this. And I stand

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<sup>7</sup> Nuclear Regulatory Commission 10 CFR 100.23 Appendix A p. 551.

ready to work with the public and work with PG&E and work with the NRC and work with the state to help ensure we get good answers.

**But I also wanted to share that if it becomes clear that that level of duty is not being taken by the NRC, the state of California will act to protect the public, to protect ratepayers, and to make sure that we have a reliable power source in the state of California.** [emphasis added]

In conclusion, A4NR presents the preceding pages of documented sources— legislative, administrative and regulatory—requesting and justifying the need for the completion of the seismic studies in question; answering the very question posed by Judge Barnett, “Whether funding should be authorized before seismic studies are completed?” From these sources, the clear answer is *studies must be completed first*.

The historical record of failures by the appropriate regulatory agencies (AEC, NRC, CPUC) to adequately assess and analyze the seismic hazards of the Diablo Canyon site is voluminous. In the matter of CPUC culpability, the quickest path may be to start at the beginning, and then move to what should be an endpoint. In the CPUC’s Decision 73278, Application 49051 (November 7, 1967), granting PG&E’s request for a Certificate of Public Convenience and Necessity, it is written:

Applicant’s consulting geologist after making an extensive study of the site including the deep exploratory trenches, testified that the site has a good bedrock foundation with only insignificant faults that have shown no movement for at least 100,000 and possibly millions of years.

A consulting seismologist testified as to the maximum size earthquakes that can be expected to occur on active faults located some 20 to 50 miles from the site and a consulting structural design engineer testified and presented a study showing that the plant can be designed and constructed to operate safely during and after such earthquakes.<sup>8</sup>

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<sup>8</sup> CPUC Decision 73278, Application No. 49051 (November 7, 1967) pp. 41-42.

Nearly twenty years later, on June 9, 1987, the California Legislature held a Joint Hearing of the Senate Energy and Public Utilities Committee and Assembly Utilities and Commerce Committee on the subject of “Diablo Canyon Nuclear Plant: Public Utilities Commission Staff Report recommending \$4 billion disallowance.” By this time, seismic underestimations and miscalculations had led to decades of delays and billions of dollars in cost overruns for the Diablo Canyon Nuclear Power Plant. It was the Public Staff Division of the CPUC—predecessor to the office of DRA—that was brought to testify before Chairman Herschel Rosenthal and this joint committee.<sup>9</sup> After hearing a recap of the seismic history regarding PG&E’s late disclosure of discovery of the Hosgri fault by Shell geologists, that eventually required major and costly changes in the design and construction of the Diablo Canyon nuclear plant, Assemblyman Richard Longshore asks Edward O’Neil, CPUC public staff council, the following:

ASSEMBLMAN LONGSHORE: That being the case, wouldn’t it also have been reasonable for the PUC to have had this same information?

MR. O’NEIL: The PUC has some information about the 1927 earthquake. It was disclosed on a seismicity map that was filed with the Public Utilities Commission in the 1960s. The fact of the matter is the PUC didn’t appreciate the significance of the 1927 earthquake. The PUC also didn’t investigate any oil company data. So to some degree, you know, we had an opportunity which we didn’t take advantage of. But on the other hand, we didn’t have geologists reviewing PG&E’s application either. And we relied on their statement that the area was free of earthquake faults in the immediate vicinity and was in an area of low seismicity. We basically relied on the representations made by PG&E.

ASSEMBLYMAN LONGSHORE: Without any backup material?

MR. O’NEIL: In retrospect, that was a mistake.

ASSEMBLYMAN LONGSHORE: On PUC’s part?

MR. O’NEIL: That’s right.

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<sup>9</sup> California Legislature, Senate Committee on Energy and Public Utilities, Joint Hearing Subject: Diablo Canyon Public Utilities Commission Staff Report recommending \$4 billion disallowance. June 9, 1987, page 11.

CHAIRMAN ROSENTHAL: Well, let me just comment that the PG&E Informed the NRC that its consultants considered offshore studies unnecessary.

ASSEMBLYMAN LONGSHORE: That's true, Mr. Chairman, but on the same token, what I'm really relying here is that I'm not questioning the \$4.1 billion or the amount of the decision of the members as regards as to how this should be distributed. What I'm saying is that with that fore-knowledge, it would have been prudent and reasonable for the PUC to have denied their license until they had received proper backup information. That would have been reasonable...

Today, in 2010, the DRA at the CPUC finds themselves in a similar situation. Will it repeat the mistakes of the past and abrogate its responsibility, as Assemblywoman Gwen Moore reminded its predecessor, the Public Staff Division, when she said at the 1987 joint hearing:

ASSEMBLYWOMAN MOORE: ...one of the reasons that we have state agencies or regulatory agencies are because we don't necessarily believe that those people that they're regulating are going to do all the things they're supposed to do because they're obligated; and of course, you know, for oversight and, you know, jurisdiction of those authorities, we look to those state agencies that have that, that power and that mission and that duty.<sup>10</sup>

There is a costly historical record regarding seismic miscalculations and assumptions at the Diablo Canyon Nuclear Power Plant. DRA and PG&E assume that a reasonable and prudent decision regarding funding for the license renewal process can proceed absent complete and full development of seismic concerns. This position is not that of the California Energy Commission, the Coastal Commission or the mandate of the current California Legislature and may demonstrate—once again to the detriment of ratepayers statewide—the adage that those who ignore the past are condemned to repeat it. Both

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<sup>10</sup> California Legislature, Senate Committee on Energy and Public Utilities, Joint Hearing Subject: Diablo Public Utilities Commission Staff Report recommending \$4 billion disallowance. June 9, 1987, page 7.

PG&E and CPUC are receiving scrutiny from the state and federal government—as well as the public and the press—for the ongoing revelations of regulatory lapses and corporate negligence that led to the tragic gas pipeline explosion in San Bruno on September 9, 2010—the very same day that Dr. Blakeslee delivered his remarks quoted above. The CPUC must heed his prescient call for more stringent regulatory oversight. This is a mistake the state of California can ill afford to make again.

## STATEMENT OF QUALIFICATIONS

Q. Please state your name and business address.

A. Rochelle Becker, Executive Director of the Alliance for Nuclear Responsibility,  
PO 1328, San Luis Obispo, Ca 93406.

Q. Please summarize your recent work experience.

A. In 2005, I co-founded and have since been the Executive Director of the Alliance for Nuclear Responsibility. From 1980 through 2005 I was a spokesperson for the San Luis Obispo Mothers for Peace.

Since the early 1980's, I have represented the San Luis Obispo ratepayer community before the California Public Utilities Commission, the California Energy Commission (CEC), the California Coastal Commission, the State Regional Water Quality Control Board, the legislature, the Nuclear Regulatory Commission and Congress. Since the latter 1970's, I have consistently, but not regularly, attended and given a local public stakeholder perspective to local, state, and federal legislative bodies and oversight agencies regarding energy policies and nuclear power.

Since 2005 I have participated in virtually all CEC proceedings related to California's operating reactors, including filing comments, testifying and providing update information for the Commission to consider. In 2005, as the Alliance Executive Director, I also met periodically with state and federal legislators to share concerns about the foreseeable relicensing of California's aging reactors.

In 2010 I shared our state and local seismic concerns with Nuclear Regulatory Commission Chairman Gregory Jaczko and NRC Commissioner Svinicki, the California congressional representative delegation and Deputy Secretary of Energy, Dr. Peter Lyons. I have also met with local community and union representatives, renewable and seismic experts.



Q. What is the purpose of your testimony?

A. The purpose of my Testimony is to sponsor the collection of past and recent historical documents, judgments, decisions and letters from elected and appointed officials and regulatory oversight agencies referenced in the Testimony of A4NR et al. in response to the Administrative Law Judge's question: Whether funding should be authorized before seismic studies are completed?