ALLIANCE FOR NUCLEAR RESPONSIBILITY

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A NUCLEAR-FREE FUTURE FOR CALIFORNIA

TO: CEC
RE: Docket 09-IEP-1A

Comments regarding PGE responses to CEC inquiries for 2009 IEPR. Comments are divided into two categories: Queries of unresolved or incomplete answers followed by Alliance recommendations (where applicable).

A.1-A.3

A4NR sent these responses to the RWQCB and have requested a future meeting to discuss these sections address NPDES issues. A4NR believes it would be appropriate and therefore recommends that the CEC meet with the local water board regarding these issues.

B.1

PG&E will create 2,112 additional radioactive fuel assemblies and will generate 908 metric tons of Uranium if a license renewal application is filed and approved. Radioactive waste estimated to be produced during license renewal will produce the following metric tons of Level A (17.408), Level B (2,680) and Level C (1,880).

Every ton of this radioactive waste will remain on the earthquake-active coast of San Luis Obispo long after the last kilowatt is produced and a large percentage of the jobs and most of the revenues have ceased. Additional seismic studies (such as AB 1632, and any that may be requested by the Congressional GAO), state input into all environmental (generic and site specific) impacts of license renewal, and studies on the integrity and security of storage for the foreseeable future (minimum of 100 years as indicated in the NRC Waste Confidence policy) is necessary to protect California ratepayers and citizens. A4NR offers the following link to include in the record:
http://www.ieer.org/clssroom/r-waste.html

RECOMMENDATION: All recommendations of the CEC and AB 1632 must be required in writing by the CEC, CPUC and Assemblyman Blakeslee, and must be completed adopted and implemented *before* a license renewal application can be filed that would

C.1-C.2

An excellent article in Scientific American (January 2009) is very useful in understanding the spent fuel issue is entitled: *Spent Nuclear Fuel: A Trash Heap Deadly for 250,000 Years or a Renewable Energy Source? Nuclear waste is either a millennia's worth of lethal garbage or the fuel of future nuclear reactors--or both*
http://www.scientificamerican.com/article.cfm?id=nuclear-waste-lethal-trash-or-renewable-energy-source

According to PG&E:
4, 310 radioactive fuel assemblies will created by the end of Diablo's current license period. 4,310 radioactive fuel assemblies will be stored for the foreseeable future within two and a half miles and/or 1800 feet of active earthquake faults. Neither earthquake fault had been identified when PG&E was granted a permit to site Diablo Canyon.

Proximity to active earthquake faults should be included in criteria for the NRC's final Generic EIS (GEIS) yet specific details of criteria the NRC will address in license renewal proceedings relating to seismicity and radioactive waste is virtually missing, and the current draft devotes only 152 words out of 604 pages to seismicity—lumped under the category of "soils and geology." The public, the county, and the state should actively participate in NRC public meetings on the GEIS. A4NR's draft comments on NRC NUREG 1437, Revision are **attached**. Final comments are due Jan 12, 2009.

RECOMMENDATION : The CEC should review the GEIS and provide comments that affirm the recommendations cited in the AB 1632 analysis, particularly since the only reactors specifically mentioned by name in the limited words devoted to seismic issues in the GEIS are Diablo Canyon and SONGS. Proximately to active earthquake faults should automatically be grounds for filing contentions in both Diablo Canyon and SONGS site-specific license renewal hearings (should the utilities file and the NRC accept applications for license renewal). However, before being allowed to file both SCE and PG&E should be required to complete, adopt and implement any recommendations stemming from 2008 AB 1632 analysis before ratepayer funding for license renewal applications are allowed.

C.3

While the CEC has requested a breakdown of spent fuel pool operating and maintenance costs, PG&E response was vague or absent. PG&E has stated there is no capital improvement projects planned for the spent fuel pools. However, there is a body of evidence that suggests that spent fuel pools should be returned to their original design (2 to 3 times fewer fuel assemblies), yet the implication of PG&E's response is that the utility has no plans to implement these recommendations of the National Academy of Science.

RECOMMENDATION: reduction in safety margins due to overcrowded spent fuel pools in an area of increasing seismic implication should be included in any review of seismic information gathered under the recommendations of the AB 1632 analysis, which should itself be completed, adopted and implemented *before* ratepayer dollars are allowed to be used for the license renewal application process.

C.4

The CEC's question and PG&E's response relating to the status of its dry cask storage project should be restated in the seismic responses beginning in Section F on page 14. A4NR questioned the NRC's independent review of the newly discovered Shoreline Fault in January 2009 and asked the NRC to provide assurances that an earthquake on that fault during the continual unloading of highly radioactive spent fuel from pools and its removal, transport and storage onsite would not impact the integrity of the process. The email correspondence follows:

- **Friday, February 06, 2009 10:52 AM**
  To: Victor Dricks
  The disclosure last November of a "shoreline" fault in "near-shore" proximity to Diablo Canyon, and PG&E's announcement yesterday of plans to begin loading radioactive fuel rods in June has prompted me to ask the the NRC following question:

  What are the impacts of a 5 to 7.5 magnitude earthquake "shaking" offshore of Diablo Canyon during the entire process (full operating life) of radioactive rod removal? Are there numbers, estimates and data of the potential consequences? If so, I would like to request a copy of the NRC's findings on this issue.

  Thank you.

  Rochelle Becker, Executive Director

  From: Michael Peck
  Sent: Feb 9, 2009 12:42 PM
  To: "beckers@thegrid.net"
  Cc: Vincent Gaddy , Tony Brown , Victor Dricks
  Subject: RES: Request for information

  Ms. Becker,

  Thank you for your question concerning the potential impact of the newly discovered "Shoreline" fault on the Diablo Canyon Independent Spent Fuel Storage Installation (ISFSI).

  The United States Geological Survey discovered the potential for a new earthquake fault this past fall during a review of data gathered as part of the Long Term Seismic Study. Characterization of this new fault is still ongoing. However, seismologists with the United States Geological Survey, NRC, and Pacific gas and Electric have determined that potential Diablo Canyon ground motion generated from the new fault would be bound by the seismic analysis performed for the larger Hosgri fault. Ground motion resulting from a 7.5 magnitude Hosgri seismic event was included in the ISFSI licensing basis as described in Section 8.2 of the Diablo Canyon ISFSI FSAR Update. The NRC assumed this seismic event could occur at any time and during any stage of transfer or storage operations involving an ISFSI cast or canister. A detailed description of the NRC seismic review can be found in Section 15.1.2.6, "Earthquake," of Safety Evaluation Report, Docket No. 72-26, Diablo Canyon Independent Spent Fuel Storage Installation Materials License No. SNM-2511 (ADAMS ML040780986).*

  Please let me know if I can provide any additional information.

  Dr. Michael Peck, Ph.D.

Senior Resident Inspector
Diablo Canyon
805-595-2354/805-602-1120

*When the above captioned access number is input on the ADAMS site the following appears. Most current document is 2007, and therefore cannot be relevant to new issue.

- **From: beckers@thegrid.net [mailto:beckers@thegrid.net]**
  Sent: Tuesday, February 17, 2009 9:51 AM
  To: Michael Peck Cc: Vincent Gaddy; Tony Brown; Victor Dricks; Byron Barbara; Hembacher Brian; adam hill; Changus Jonathan; Haas Greg; Levenshus Jonathan; Dedrick Kathy (EPW); Nelson Matthew (Feinstein); Erbesfeld Michael (Feinstein)
  Subject: Request for information on possible impacts of new fault disclosure

  Mr. Peck,

  I have returned from Washington, DC and reread your response tonight. Unfortunately it still does not make sense. You state "The United States Geological Survey discovered the potential for a new earthquake fault this past fall during a review of data gathered as part of the Long Term Seismic Study. Characterization of this new fault is still ongoing."

  You follow with a statement that says that , "However, seismologists with the United States Geological Survey, NRC, and Pacific gas and Electric have determined that potential Diablo Canyon ground motion generated from the new fault would be bound by the seismic analysis performed for the larger Hosgri fault. "

  When did the the NRC assume a seismic event on the "Shoreline" fault could occur at any time and during any stage of transfer or storage operations involving an ISFSI cast or canister? Is the report you cite in your message below a complete and independent analysis of possible earthquake impacts from a quake on either the Hosgri or "Shoreline" or a combination thereof?

  If characterization is still ongoing and state oversight agencies and legislators are questioning the impacts of this new seismic information, as well as calling for more complete and updated mapping and studies, how is it that the NRC has such confidence that PG&E can remove, transfer, and store highly radioactive waste indefinitely on our fragile coast during the life of the reactors?

  I have cc'd on local, state and federal representatives as I am fairly certain that I am not the only one confused by your response.

  In Peace

  Rochelle Becker, Executive Director

- **From: Michael Peck <Michael.Peck@nrc.gov>**
  Date: Tue, 24 Feb 2009 09:29:13 -0600
  To: "beckers@thegrid.net" <beckers@thegrid.net>
  Subject: RES: Request for information on possible impacts of new fault disclosure

  Ms. Becker,

  I apologize for creating any confusion related to the new earthquake fault discovered near Diablo Canyon.

  Our Region IV Public Affairs Officer, Victor Dricks, is planning to provide you a more detailed response to your question.

Thank you,
Michael

Dr. Michael Peck, Ph.D.
Senior Resident Inspector

- **From: Victor Dricks**
  Sent: Feb 24, 2009 7:29 AM
  To: "beckers@thegrid.net"
  Subject: Diablo Canyon issue

  In response to your email of February 17, following identification of the new "shoreline" fault, PG&E performed initial evaluations to estimate the potential ground motion that could occur at Diablo Canyon following an earthquake from the new fault. The results of these evaluations indicated that the ground motion that could be generated by the new fault would be less than the ground motion that could be generated from the larger Hosgri fault. NRC seismologists have reviewed the Pacific Gas and Electric analysis of the new fault and agreed with the licensee's conclusions related to the potential ground motion that could be generated from an earthquake. On the basis of current information, the potential affect on nuclear safety is within the bounds of the seismic events previously considered by the NRC during the ISFSI licensing processes. The licensee continues to work with USGS and is evaluating the effects of new information as it becomes available. We will continue to monitor the licensee's actions on this matter.

  Victor Dricks
  Public Affairs Officer
  U.S. Nuclear Regulatory Commission Region IV

- **Date: Tuesday, February 24, 2009 2:33 PM**
  From: beckers@thegrid.net
  To: Victor Dricks <Victor.Dricks@nrc.gov>
  Reply-To: beckers@thegrid.net
  To: Victor Dricks Victor.Dricks@nrc.gov Cc: Haas Greg <greg.haas@mail.house.gov>, adam hill <achill29@hotmail.com>, Changus Jonathan <Jonathan.Changus@asm.ca.gov>, Byron Barbara <Bbyron@energy.state.ca.us>, Huntington Will <Will.Huntington@mail.house.gov>, "Dedrick Kathy (EPW)" <Kathy_Dedrick@epw.senate.gov>

  Mr Dricks,

  The wording in your response continues to raise concerns. First, "PG&E performed initial evaluations" and the "results indicated that the ground motion that could be generated from the new fault would be less than the ground motion that could be generated from the larger Hosgri fault." You indicate the NRC seismologists "reviewed" PG&E's initial finding and agreed. I would like to request a copy of the NRC review and any independent back up the Commission used to come to its conclusion.

  Is the NRC telling the public that it need not be concerned about the risks from radioactive fuel pools and the process of transport and overpack of radioactive waste from pools to storage pads that may be heightened by the new shoreline fault? And if so, on what is this based?

  The Alliance did not ask if the Diablo's reactor containments would be stable during possible seismic activity on the new fault; we asked about the possible impacts to the pools and radwaste transport process from pool to pad during a possible seismic event.

This transfer process will be repeated many times as PG&E removes radioactive fuel assemblies and slowly sends them up the hill for overpack and storage.

Finally you end with "The licensee continues to work with USGS and is evaluating the effects of new information as it becomes available. We will continue to monitor the licensee's actions on this matter." The matter does not appear to be fully resolved and yet the NRC does appear willing to allow PG&E to begin the process of removal of radioactive fuel rods and transfer to storage casks this coming June.

Even before PG&E announced a new fault had been discovered 1800 feet offshore of Diablo Canyon, the state was ready to recommend further seismic mapping and studies - the recommendation was strengthened and an Assembly bill was authored to mandate and fund these studies. Yet the NRC just accepts PG&E's initial findings - can you explain why the NRC (which is charged with safe operations) is appears less concerned and demands less independent verification than the state (which is charged with providing reliable and economic generation)?

How many active faults will the NRC allow to be within two miles of the Diablo Canyon Nuclear Plant and onsite waste storage facility before it admits it may not be a safe place to produce or store radioactive waste? How many times will the NRC agree with PG&E without independently verifying (not *reviewing* PG&E paperwork) new seismic information?

Still awaiting a response that answers our original questions sent on Feb 6, 2009 and again we have cc'd local, state and federal legislators and oversight agencies, so please do send your response to "all."

In Peace

Rochelle

Neither Mr. Dricks, nor the NRC responded further. However, the subject was again raised at the end of cycle meeting for Diablo Canyon in June 2009. When questioned again, the NRC seismic experts did not indicate that NEW studies had been undertaken, but that their assumptions are based on previous studies that pre-date the discovery of the new earthquake fault.

C.5

PG&E states that their radioactive waste storage facility is "designed to accommodate all fuel discharged from both units during the current 40 year license." The utility goes on to state that "the facility will accommodate 38 casks containing 4,416 fuel assemblies." A4NR believes this may be a typo and the number of casks should be *138 casks, not 38,* and asks for clarification.

C.6

RECOMMENDATION: A4NR requests that the CEC submit a data request to PG&E to determine how long radioactive fuel assemblies will be stored in pools at Diablo Canyon under current license? Also a request to PG&E asking how long PG&E plans to store the fuel in pools if a license renewal is granted. A) Is fuel removed only to make room for additional radioactive fuel assemblies or B) are there any plans to recreate the original license configuration which according to the National Academy of Sciences would

reduce the probability of a spent fuel pool fire by 80%? C) If required by the NRC what would be the estimated costs for returning the fuel to original design configuration?

C.8
A4NR requests the CEC file a follow-up data request: 1) why were different casks used for Humboldt than were used for Diablo Canyon radioactive fuel assemblies? 2) What are the costs of each cask system? 3) Were the costs of transferring to the HISTAR transport casks included in the estimated costs for onsite storage of radioactive fuel assemblies?

Also while "actual transport of the fuel is the responsibility of the DOE" the associated costs and risks have not been resolved. Will this be a ratepayer cost? A taxpayer cost? Are these costs included in the lifetime costs of nuclear facilities?

C.9
RECOMMENDATION: A4NR recommends that, since the utility admits in their response that any standards for the ultimate high-level waste disposal overpack (TAD) are speculative, that the state consider the potential costs of transferring existing accumulated on-site high level waste as "unknown" for purposes of understanding costs, benefits and risks regarding radioactive waste transportation.

C.10
RECOMMENDATION: A4NR suggests a follow up question relating to damaged fuel assemblies at Humboldt: 1) how many damaged fuel assemblies is PG&E able to place in a single cask?" 2) How many casks contain damaged assemblies? 3) Is if possible to place non-damaged assemblies in the same casks as damaged assemblies and, if so, how many? 4) At Diablo, have the five damaged fuel assemblies been placed in dry casks?

C.12
RECOMMENDATION: PG&E states the annual cost for operating the Humboldt Bay radioactive storage site is $4.4 million dollars. In its response to C-4, PG&E states there are 390 spent fuel assemblies in total at Humboldt. PG&E does not mention the number of casks that these 390 assemblies are stored in, nor do they delineate how many assemblies are in each cask. This information would appear to have some relevance to costs of dry storage at Diablo Canyon, as PG&E's response is merely $1 million in 2009 dollars, but does not clarify how long the costs will remain at that level. : *Before* the state allows any license renewal applications to be filed with the NRC, it is vital that energy planners and ratepayers understand the costs of and risks of long term or indefinite onsite storage. Therefore, A4NR requests that the CEC follow up with the above questions.

C.14
The life of cask systems and their components is virtually unknown by either the utilities or the NRC, as there is little more than a decade of commercial experience at most facilities. The vendors have estimates, but estimates of the design-life of components at nuclear plants have proven to be faulty and often baseless. For example, at the Oyster Creek reactor in New Jersey, as reported in the Asbury Park Press on October 5, 2009:

"Fasteners made for spent fuel storage devices at Oyster Creek Generation Station and several other power plants did not meet standards, according to the Nuclear Regulatory Commisison. The NRC Web site lists information by Transnuclear Inc. that reported 'a potential Part 21 violation and has reason to believe that Hwa Shin Bolt Ind. Co. provided unsubstantiated certified material.'"

RECOMMENDATON: Given the potential for flawed or defective parts, A4NR requests this topic be closely followed on an industry-wide basis before final decisions are made to allow utilities to file license-renewal applications. In addition, to fulfill the mandate of providing a cost/risk/benefit assessment of the future of nuclear power in California, A4NR recommends that an economic analysis of cost overruns due to prematurely failed components at nuclear power plants be completed, and the percentages of overruns be used in computing the potential exposure to ratepayers.

C.15

PG&E estimates that 256 fuel assemblies will be removed from pools in 2009 and another 256 in 2010. Two questions come to mind and A4NR requests the CEC follow-up: 1) First, how does the removal of 512 fuel assemblies answer the CEC's question on "returning pools to more open racking" as it is A4NR's assumption that the fuel assemblies removed will be replaced by newly spent fuel assemblies. 2) How will 512 spent fuel assemblies cost $3 million less that the 390 assemblies stored at Humboldt?

To be" in compliance with all NRC requirements," does not equate to meeting the National Academy of Sciences concerns of a spent fuel pool fire due to overcrowding. In addition, spent fuel storage is the subject of an NRC rulemaking with comments due in November 2009.

RECOMMENDATION: A4NR requests the CEC review these comments and follow the proceedings to include any findings in future IEPR reports.

C.16

RECOMMENDATION: A4NR wishes to know if these costs include security (both labor and equipment)? Would it not be possible to estimate the costs of storing spent fuel for the future period of a license renewal by extrapolating the cost estimates under the current license? A4NR requests that the CEC submit a data request to PG&E to disclose the costs and location of a possible additional storage facility (pads) if Diablo Canyon applies for and receives a license renewal for an additional 20 years.

C.17

PG&E's answer on Humboldt costs is a bit confusing. Are there ANY plans to extend Humboldt's license beyond the original 20 year period? Is PG&E is referring only to the license for the casks, and if so, what are the estimated costs for license renewal and what are the criteria?

PG&E's answer on Diablo's costs is also a bit confusing. If the project to complete the storage pad is being delayed in the hope that an offsite permanent storage facility will be available, is there a date for availability assumed? If so, what is that date assumed? Will license extension costs for the dry cask site be reviewed every 20 years? And if so, what are the estimated costs if all seven pads will eventually be necessary? Cost escalations are highly likely and have historically been proven to be very costly for ratepayers. A4NR requests that the CEC file additional data requests to provide the answers to the above questions.

D.1

RECOMMENDATION: A4NR requests that the CEC ask for clarification of PG&E's response regarding its ability to store all spent fuel generated onsite under its current license. 1) Is PG&E assuming that some of this fuel might be left in the pools until it can be transported offsite? 2) Or if a license renewal is not approved (either by the state or the federal government) will PG&E remove all radioactive fuel from the pools and store in dry casks onsite until/if an offsite facility becomes available?

D.2

While PG&E's response that "Congress is studying the proposal" for long-term radioactive waste storage was correct as of July 22, 2009; on July 23, 2009, Bloomberg reported that "Finding a permanent site for spent nuclear fuel in the U.S. isn't "an urgent problem," the head of the Nuclear Regulatory Commission said." It would appear that the California Coastal Commission's statement that radioactive waste will remain on our fragile coast "in perpetuity" may be the most accurate statement to date.

RECOMMENDATION: A4NR recommends that the CEC ask PG&E the cost of dry cask storage on a year-by-year basis after kilowatts are no longer being produced at Diablo. What is the difference in yearly costs of maintaining and securing onsite high-level radioactive waste if the current license terms in 2023 and 2025 versus the costs for maintaining and securing the wastes during a license renewal period 2042-2045?

D.3

RECOMMENDATION: As the responsibility for the offsite transportation of high level radioactive waste is the responsibility of the DOE, A4NR would like to know if California has a voice in the DOE's waste monitoring and storage decisions—particularly given the unpredictable seismic activity potential on our coast? At the only DOE meeting on Yucca Mountain held in Lone Pine, California in December 2007, the DOE did have present charts and tables indicating their preferred routes and transport timetables and scenarios. What state agencies would be involved in criteria for coastal storage? Will PG&E still own the site? Will ratepayers still be responsible for paying for onsite storage after the last kilowatt ceases to be produced? If so, for how long?

D.4, 5, 6

Again PG&E mentions the DOE's full responsibility for offsite transportation and storage. A4NR requests a list of all state agencies that provide input and guidance to the DOE to ensure this process protects the safety and economy of California citizens.

D.9, 10
These questions and responses address lawsuits against the DOE and should be of interest to the counties and the state.

RECOMMENDATION: A4NR requests a list of all state agencies that provide input and guidance to the DOE to ensure this process protects the safety and economy of California citizens.

F.1 and F.3
PG&E answers: "The second study is an update of the seismic hazard for DCPP. This study includes development of a major update of the tectonic model in the central coastal California region and development of new ground motion models using both empirical model and numerical simulation. This work involves the broad earthquake community and includes researchers at the USGS, Southern California Earthquake Center (SCEC) and the Pacific Engineering Research Center (PERC). This project is scheduled to be completed in 2012"

In F.3 PG&E indicates that its LTSP final hazard update will not be completed in 2012 and seismic vulnerability assessments in 2013.

RECOMMENDATION: Given that these major updated seismic studies are not scheduled to be completed until sometime in 2012, A4NR recommends that the CEC and CPUC not permit license renewal application until such time as the studies are completed and reviewed by both the CPUC and CEC.

F.7
RECOMMENDATION: PG&E indicates in its response that it is going to "plan for future 3-D seismic surveys and other advanced geophysical investigations." As the 3-D survey is specifically mentioned in the AB 1632 requirements, A4NR requests that PG&E provide a date certain for this analysis, and that any license renewal application to the CEC or CPUC be stayed until such time as the results of the study are adopted and implemented.

G.2
PG&E indicates that DCPP SGRP was completed "under CPUC authorized revenue requirement." If the project was accomplished under budget, has PG&E returned any money or overpayments to their ratepayers?

G.3
PG&E indicates that it has filed no annual status reports or compliance filings with the NRC regarding the SGRP RVH projects. However, PG&E has received (in its history) over 200 waivers, amendments and temporary orders for DCPP. In the interest of providing the state's relevant agencies with the proper understanding of the baseline criteria for the condition of the reactor prior to relicensing, and in the interests of maintaining reliable and economic electrical generation for California, A4NR requests that the CEC require of PG&E a listing of all such waivers, amendments and temporary

orders which have been incorporated into the rules and regulations of operating the plant, and which are site-specific departures from publicly vetted policies.

G-7

PG&E mentions the possibility of an "Upgraded Dry Cask Storage pad" to store the radioactive fuel assembly casks, yet A4NR's assumption was that PG&E had received both approval and funding for storage of up to 138 casks at the site the NRC licensed. PG&E also mentions an additional $50 million and the upgrade to begin in 2011.

*RECOMMENDATIO*N: A4NR believes SLO County, the CCC and the ratepayers need more clarification to understand the need for upgrades. Likewise, it is also not clear whether the $45 million for the Pressure Turbine Retrofit was approved in the last GRC or is pending in the upcoming GRC. Nor is it clear why PG&E believes this retrofit is necessary to safely operation until the end of its current license term.

I.3

The CEC requested data regarding cost of replacement power for any extended outages for DCPP during the period 2001-2008. They requested the data in units of $/Mwh. PG&E replied with total costs, not broken down into $/Mwh.

RECOMMENDATION: for a fuller understanding of the cost of replacement power, A4NR asks the CEC to inquire why their request was not answered in the "units" of measurement they required. In addition, for DCPP Unit 1 in 2002 and DCPP Unit 2 in 2008 the replacement power costs more than double those that correspond to normal refueling or scheduled outages. A4NR asks the CEC to require a more detailed explanation for those 200% spikes in replacement power costs.

I.5

PG&E support documents refer to studies completed in 2004 relating to alternative sources of generation in lieu of DCPP. The studies are out of date and incomplete. As on example, the PG&E Study says: "Because renewable generation does not have a similar level of reliability or delivery profile as DCPP or generic combined-cycle resources, PG&E does not estimate the impact of replacing all of DCPP's generation with renewable resources." It also quotes the CEC's earlier report, "The CEC Staff generation technologies report was used as a reference for the cost of renewables. That report suggests that solar energy is much more costly than either wind or geothermal, so solar was not reflected in this analysis."

In the five years since this report was issued, there have been many changes and reductions in the costs of renewable energy. In addition, PG&E is currently in a contract to purchase up to 1000 MW of solar energy from a project (currently in the permitting process) that is being undertaken in the same county as the DCPP. That is equivalent to half the output from Diablo Canyon, and while it is not a "baseload" capacity in the sense that DCPP is, it does provide PEAK power during time of greatest demand (at the higher rates) contrasted with need to run DCPP at full power (producing energy for the Helms Pumped Storage project) in the off-peak hours. In addition, PG&E has applied for money

from the ARRA "stimulus" fund for investments in advanced storage research and design. These recent and important trends and changes in energy generation need to be reflected and updated.

RECOMMENDATION: A4NR requests that the CEC, in the interest of energy planning for California ratepayers, require new and up-to-date studies of generation replacement alternatives from the utilities.

I.6-I.7
PG&E, like SCE appears to depend solely on its own sources or the market for outages that exceed 90 days. While A4NR understands this has been the historic practice of IOU's, it would seem reasonable after the deregulation fiasco that ended the last century and began this century that a new approach would benefit the state and utility regulators. Furthermore, after the July 2007 earthquake in Japan which shutdown 8000 MW of nuclear generation in 90 seconds, and another Japanese quake in early August at a second nuclear facility with damage greater than expected, it would appear the California should employ the "precautionary principle" and thoroughly investigate the costs of replacing aging reactors with growing stockpiles of highly radioactive waste once licenses expire (mid 2020's). According to the World Nuclear Association (August 2009) the following costs are associated with the 2007 Japanese earthquake at Kashiwazaki-Kariwa Plant: "Tepco posted a loss of JPY 150 billion (US$ 1.68 billion) for FY2007 (to 31/3/08) due to the prolonged closure of the plant, followed by JPY 109 billion loss in the first half of FY2008. While no damage to the actual reactors has been found, detailed checks continue, and upgrading of earthquake resistance is required. Major civil engineering works are also required before the reactors resume operation. Overall, the FY2007 impact of the earthquake was projected to be JPY 603.5 billion ($5.62 billion), three quarters of that being increased fuel costs to replace the 8000 MWe of lost capacity. NISA approved the utility's new seismic estimates in November 2008, and conducted final safety reviews of the units as they were upgraded. Unit 7 restarted in May, and Unit 6 in August 2009."

RECOMMENDATION: The CEC should, as part of the AB 1632 analysis, include an economic comparison of the Japanese seismic incidents and the potential consequences and mitigation of same in California.

I.8
A4NR is not clear whether PG&E has claimed and the CEC has granted "privilege" for this request.

I.9
A4NR's comments are the same as those for category I.5

I.10
A4NR is pleased to learn that Diablo Canyon is not necessarily needed for grid-stability and it is our belief that a renewable energy park pilot program and energy efficiency retraining center would be a positive step in responsibility energy planning within

PG&E's service territory. In addition, the Carizzo Solar projects (now in the permitting process) should also be cited as possible resources. Finally, it is incomprehensible to the Alliance why energy efficiency is not the first resource that either PG&E or SCE acknowledge as an immediate and long-term solution to loss of generation from aging reactors on earthquake active and eroding coastal zones.

J.1
It appears PG&E has claimed privilege, rather than responding to current and future supplies of nuclear fuel. Therefore, it is not possible for A4NR to comment on this question at this time.

J.2
There are numerous studies, reports and articles—available to the public and not proprietary—about the rising costs of Uranium and the challenges to opening new mines in the United States.

RECOMMENDATION: A4NR requests the CEC to have both PG&E and SCE provide this information to in order to allow the responsible and appropriate state agencies as well as ratepayer advocacy groups to plan for informed decisions on future costs of generation.

J-3
Again it appears PG&E has claimed privilege, rather than responding to current and future supplies of nuclear fuel. Therefore, it is not possible for A4NR to comment on this question at this time.

J-4
PG&E's response could be interpreted as indicating future unstable supplies for uranium fuel, again holding the United States electric supplies hostage to political and possible hostile influences.

RECOMMENDATION: As 2015 could be a critical time for nuclear fuel supplies, with a serious potential "shortage of uranium supply to cover the base worldwide requirements" (PG&E's words), the time to seriously plan to replace Diablo Canyon by 2025 at the end of its current license should begin as soon as possible in order to ensure that California ratepayers are not subject to the whim of outside forces or lack of responsible energy planning.

K.4
In response to the CEC's questions regarding PG&E's insurance coverage for accidental outages, PG&E states: "In the event of an outage involving both units, the maximum coverage is $784 million."

RECOMMENDATION: A4NR directs the CEC to A4NR's comments in response to PG&E answers I.6-I.7. For FY 2007, TEPCO in Japan spent over $5.6 billion dealing with the consequences of the earthquake at the 8000 MW Kashiwazaki-Kariwa plant.

That plant had four times the capacity of Diablo, so compensating proportionally, the losses and expenses—if possible to interpret on a 1:1 basis—would be equal to about one-quarter that for DCPP's 2000 MW. This would be approximately $1.4 billion, which is about twice PG&E's stated insurance coverage ($784 million). Therefore, the CEC should request updated economic analysis and forecasts for replacement power and infrastructure repairs from PG&E as well as a review of any possible inadequacy of its insurance coverage.

L.1-L.2
In response to the CEC questions on License Renewal (LR), PG&E replies that they are on schedule to file with the NRC in "in early 2010." They further add that, "At this time, PG&E has not identified any safety or environmental issues precluding renewal of the DCPP operating license."

At this writing, only one calendar-quarter remains until "early 2010." PG&E may not have identified any "environmental issues precluding renewal," however, the NRC's Generic Environmental Impact Report revision (GEIS-NUREG 1437, updating the 1996 version referenced subsequently by PG&E) is still in the scoping process and the public comment period extends until January 12, 2010. Therefore, it is premature for PG&E to say that it has not identified any "environmental issues precluding renewal," because the NRC has not finalized the document that will guide the determination of those issues.

RECOMMENDATION: The revised NRC GEIS contains the following paragraph in GEIS section S.1: (emphasis added by A4NR)

"The purpose and need for NRC's proposed action is to provide an option to continue plant operations beyond the current licensing term to meet future system generating needs. These needs and, ultimately, the decision to operate a nuclear power plant under a renewed operating license are to be determined by State, utility, system, and, where authorized, Federal (other than NRC) decision makers. Unless there are findings in the safety or the environmental reviews that would lead the NRC to reject a license renewal application, **the NRC has no role in energy planning decisions. State regulatory agencies, system operators, power plant owners, and, in some cases other Federal agencies, ultimately decide whether the plant should continue to operate.** From the perspective of the licensee and the State or system regulatory authorities, the purpose of renewing an operating license is to maintain the availability of the nuclear to meet system energy requirements beyond the term of the plant's current license."

Therefore, A4NR requests that the CEC, CPUC and other relevant state agencies become involved in the GEIS update process and examine and analyze any state issues that may be impacted by this document.

RE: AB 1632 recommendations (section L.2)
PG&E references their answers to section F for general answers to the seismic questions in section F. However, as pointed out in A4NR's comments on these issues, there is a disconnect between PG&E's targeted dates of completion for these studies (extending out from 2011-2013) and their intent to file for license renewal in the "early 2010."

RECOMMENDATION: A4NR recommends that ALL STUDIES WARRANTED BY AB 1632 be COMPLETED, ADOPTED and RECOMMENDATIONS IMPLEMENTED *BEFORE* the utility is allowed to file with the CPUC or CEC for permission to seek a license renewal. There is little point in spending ratepayer money on the license renewal process BEFORE these studies—the results of which might indicate significant challenges—are completed. In fact, to file a license renewal before the studies are complete might render their impact moot, for once filed with the NRC, the state loses a majority of its ability to question and have input into the process.

M.6

In response to these questions regarding emergency evacuation, PG&E says that they have, "recently issued a contract to update the required evacuation time estimates for the Diablo Canyon Basic Emergency Planning Zone. The updated report will include a comparative assessment of the evacuation time estimate following an earthquake event....PG&E expects to receive a complete analysis in the first quarter of 2010."

RECOMMENDATION: A4NR inquires as to how this analysis of evacuation times and access, to be completed by the first quarter of 2010, can possibly be considered complete when, as PG&E has indicated in answers to section F, the latest seismic studies and reports on the areas surrounding the plant won't be completed until a 2011-2012 time frame. Therefore, A4NR recommends that the CEC require PG&E to either stay, or to redo their study if new information on seismic hazards should emerge as a result of AB 1632 recommended seismic studies—which PG&E says it will not complete until 2011-2012. In addition, PG&E states that, "Another full update of the ETA study will be prepared in 2012 to reflect the 2010 census data." Since a license renewal is based on forward projections that are still over a decade away—and, per the NRC Office of Inspector General, a license renewal for DCPP could be filed as late as 2017 and still be within an acceptable time frame—A4NR recommends that any application for license renewal by the utility be stayed until such time as these newer studies are completed.

Respectfully Submitted,

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