

Mendiola, Doris

From: Rachel MacDonald [Rmacdona@energy.state.ca.us]
Sent: Tuesday, January 12, 2010 4:33 PM
To: Rulemaking Comments
Subject: Rulemakings and Adjudications Staff - RE NRC -2008-0608, Comments due for Draft GEIS
Attachments: Michael Lesar Letter 011210.pdf; Comments to Lesar-NRC on GEIS License Renewal 11210.final1.pdf.pdf

Attached please find our comments on the Draft GEIS. They were faxed as well.

Please confirm receipt.

Thank you,

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January 12, 2010

Mr. Michael Lesar, Chief
Rulemaking and Directives Branch
Mailstop TWB-05-B01M
Division of Administrative Services
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Re: Comments on the Generic Environmental Impact Statement (GEIS) for License Renewal of Nuclear Plants (NUREG-1437, Revision 1)

Dear Mr. Lesar:

The California Energy Commission (Energy Commission) appreciates the opportunity to comment on the U.S. Nuclear Regulatory Commission's (NRC) update of the Generic Environmental Impact Statement (GEIS) for License Renewal of Nuclear Plants (NUREG-1437, Revision 1, 2009). We also appreciate the NRC's decision to hold public meetings near California's two operating nuclear power plants in response to requests from California representatives to provide an opportunity for people living or working in communities near these plants to comment on the proposed changes in the GEIS. The high turnout at these meetings likely resulted from the NRC's relocating these meetings to venues near these plants. In general, public concerns expressed at these meetings focused upon plant safety, seismic vulnerability, aging infrastructure challenges, and potential terrorist acts directed at these plants.

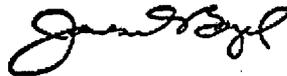
In the interest of protecting public safety and the environment, ensuring plant reliability, and lowering electricity costs to California consumers, we reiterate many of the concerns and recommendations that we expressed in our September 17, 2003, comments on the NRC's revision of its GEIS for License Renewal of Nuclear Power Plants (NUREG-1437). In light of the well-documented seismic hazards at both the Diablo Canyon Nuclear Power Plant and the San Onofre Nuclear Generating Station (SONGS) in California, it is a major shortcoming that the Draft GEIS' discussion of seismic safety is limited to only one paragraph (See p. 3-50, Draft GEIS). We strongly urge the NRC to consider seismic issues as Category 2 site-specific issues that should be addressed in plant license renewal reviews. The impacts from the 2007 earthquake on the Kashiwazaki-Kariwa Nuclear Power Plant in Japan highlight the importance of site-specific reviews of seismic safety.

Mr. Michael Lesar
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The discovery in the late 1960's of the Hosgri Fault – an active major offshore fault near Diablo Canyon in California -- while the plant was under construction led to years of investigations and hearings as well as revised plant design and seismic retrofits. This discovery was one of the main causes of construction delays that resulted in Diablo Canyon Unit 1 not becoming operational until 1984—15 years after work began at the site. The USGS' discovery of a new fault in 2008 near Diablo Canyon reinforces the need for updating seismic research information for the site and for a site-specific reexamination of seismic issues during license renewal reviews.

Our comments on the revised GEIS are attached for NRC's consideration. If you have any questions regarding these comments, please phone Barbara Byron at 916-654-4976 or email at bbyron@energy.state.ca.us or Rachel MacDonald at 916-654-4862 or email at rmacdona@energy.state.ca.us.

Sincerely,



JAMES D. BOYD
Commissioner and Vice Chair
California State Liaison Officer
Nuclear Regulatory Commission

Attachment

cc: Paul Lohaus
Nuclear Regulatory Commission

Bill Maier
Nuclear Regulatory Commission

Attachment

Comments on the U.S. Nuclear Regulatory Commission's (NRC's) Generic Environmental Impact Statement (GEIS) for License Renewal of Nuclear Plants (NUREG-1437, Revision 1, 2009)

Background

The U.S. Nuclear Regulatory Commission (NRC) staff is updating environmental protection regulations regarding the license renewal of nuclear power plants and associated documents including the draft revision to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS) (NUREG-1437, Revision 1), a revised Environmental Standard Review Plan (ESRP), Standard Review Plans for environmental reviews for Nuclear Power Plants, Supplement 1: Operating License Renewal, and a revised Regulatory Guide 4.2, Supplement 1, Preparation of Environmental Reports for Nuclear Power Plant License Renewal Applications. The proposed rule and documents were published in the Federal Register on October 7, 2009 (74 FR 51522), and can be found at 222.regulations.gov, Docket ID: NRC-2008-0608. Two public meetings were held in California on October 20, 2009 in Pismo Beach and on October 22 at Dana Point, California.

The GEIS has three main objectives:

- (1) to evaluate environmental impacts from renewing nuclear power plant operating licenses;
- (2) to identify and assess those impacts that are expected to be generic (same or similar) at all nuclear plants, and;
- (3) to define the number and scope of environmental impact issues that need to be addressed by the applicants in plant-specific Environmental Impact Statements.

Under the NRC's environmental protection regulations in 10 CFR Part 51, renewal of a nuclear power plant operating license is identified as a major federal action significantly affecting the quality of the human environment, and thus an environmental impact statement (EIS) is required for a plant license renewal review. The EIS requirements for a plant-specific license renewal review are specified in 10 CFR Part 51. The NRC's public health and safety requirements that must be met for the renewal of operating licenses for nuclear power plants are found in 10 CFR Part 54. Operating licenses may be renewed for up to 20 years beyond the 40-year term of the initial license. No limit on the number of renewals is specified. Part 54 requires license renewal applicants to perform specified types of evaluations and assessments of their facility and to provide sufficient information for the NRC to determine whether or not continued operation of the facility during the renewal term will endanger public health and safety or the environment. Specifically, licensees will be required to assess the effect of age-related degradation on certain long-lived, passive systems, structures, and components that are within the scope of Part 54.

In the 2009 revised GEIS, the NRC has identified for each issue whether the analysis in the GEIS of its environmental impacts could be applied to all plants and whether additional mitigation measures would be warranted. The categories to which an issue may be assigned are as follows:

Category 1: The predicted impacts are the same or similar at all nuclear plants;

Category 2: Generic determination cannot be made and, therefore, a plant-specific analysis is required.

The NRC has identified the following "New Category 1 issues: Effects of dredging on water quality; the effects of dredging on aquatic organisms; exposure of terrestrial organisms to radionuclides; exposure of aquatic organisms to radionuclides; human health impacts from chemicals; physical occupational hazards; impacts of nuclear power plants on geology and soils. The NRC has identified new Category 2 issues as: groundwater and soil contamination, non-radiological; radionuclides released in groundwater; special status aquatic species and habitats; environmental justice; cumulative impacts. The NRC has recategorized the following formerly Category 2 issues as generic Category 1 issues: housing impacts; public services (public utilities, education, transportation); and offsite land use (impacts from refurbishment and impacts from license renewal). The NRC will issue a final rule and GEIS revision in 2011.

The purpose of the Energy Commission's comments is to expand the list of environmental issues associated with plant-specific Category 2 issues that the applicant and the NRC should address regarding possible environmental impacts that could occur from renewing licenses of individual nuclear power plants under 10 CFR 54. The GEIS is the NRC's means of establishing the bounds and significance of these potential impacts for all operating light-water nuclear reactors. The environmental review, together with the safety review and on-site plant inspections, form the basis for the NRC staff's recommendation on whether to renew or not to renew an operating license for a nuclear power plant.

The NRC anticipates that it will receive applications for renewal of the operating licenses for a significant portion, if not all, of the operating nuclear power plants in the U.S. In California, nuclear power generation provides approximately 14% of the electricity generated within the state. Operating power plants in California are Diablo Canyon Units 1 and 2 (their operating licenses expire 2024 and 2025, respectively) and San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 (operating licenses expire in 2022). On November 24, 2009, PG&E filed its application with the NRC for a 20-year license extension for Diablo Canyon, and the Energy Commission anticipates that San Onofre will file its application for renewal in 2012.

The Energy Commission recommends that the following issues should be considered Category 2 site-specific issues and be evaluated in site-specific environmental impact

analyses by the applicant and the NRC during the environmental impact review for plant license renewal:

1. Seismic Risks: The draft GEIS' discussion of seismic hazards at nuclear power plants is completely inadequate. The discussion is limited to only one short paragraph. It places seismic issues under the broader heading of "Geology and Soils" and considers it a generic, Category 1 issue (p. 3-50, GEIS). Seismic issues should be considered plant-specific Category 2 issues, particularly at seismically active reactor sites such as Diablo Canyon and SONGS. In addition, seismic issues must be considered plant-specific Category 2 issues at Diablo Canyon in light of the newly discovered active Shoreline Fault, which has raised questions about the seismic hazard at the reactor site. The NRC concluded that Diablo Canyon and SONGS "have been designed to safely withstand the seismic effects associated with earthquakes with epicenters at various locations and at various depths, magnitudes, and ground accelerations." (p. 3-50). However, support for this conclusion is based upon an outdated report (1973) by the Atomic Energy Commission and a Southern California Edison report (2007).

Both of California's operating nuclear power plants are located in highly seismically active areas on the Pacific Coast. The discovery in the late 1960s of a major offshore fault – the Hosgri Fault -- located 4.5 kilometers west of Diablo Canyon, resulted in years of investigations and hearings and the redesign and seismic retrofit of Diablo Canyon – an effort that resulted in Unit 1 not becoming operational until 1984, about 15 years after work at the site began. In 1984 the NRC made a condition of the operating license for Diablo Canyon that, "PG&E shall develop and implement a State-of-the-Art Program to revalidate the seismic design bases used for Diablo Canyon."¹ In November 2008, PG&E and USGS announced the discovery of a previously unidentified offshore fault – the Shoreline Fault -- approximately one kilometer west of Diablo Canyon that has a capacity to generate a magnitude 6.5 earthquake. PG&E is working with the USGS to study earthquake hazards along the coastline in central and northern California, including near Diablo Canyon. The NRC and the USGS will conduct an independent review of PG&E's Long-Term Seismic Program (LTSP) program in 2010. Seismologic and geologic data that have become available since SONGS was built indicate that this plant site could experience larger and more frequent earthquakes than had been anticipated when the plant was designed.²

In 2008, the Energy Commission, as directed by California Assembly Bill 1632 (Blakeslee, Chapter 722, Statutes of 2006), completed a comprehensive assessment of the vulnerability of Diablo Canyon and SONGS to a major

¹ Safety Evaluation Report Related to the Operation of Diablo Canyon Nuclear Power Plant, Units 1 and 2, Dockets Nos. 50-275 and 50-323, NUREG-0675, Supplement No. 27, July 1984, p. 8.

² 2008 Integrated Energy Policy Report, p. 7, at <http://www.energy.ca.gov/ab1632/documents/index.html>

disruption due to a seismic event and plant aging.³ AB 1632 further directed the Energy Commission to assess the impacts of such a disruption on system reliability, public safety and the economy and assess the costs and impacts from nuclear waste accumulating at these plants. This assessment included a major consultant study by an interdisciplinary study team, public hearings, and review of academic, scientific and government reports and data provided by California's nuclear plant owners. To assist with this seismic vulnerability assessment, the Energy Commission formed a Seismic Vulnerability Advisory Team made up of seismic safety experts from California's Seismic Safety Commission, Geological Survey and Coastal Commission. This major study resulted in a number of recommendations by the Energy Commission including that PG&E and SCE should conduct advanced seismic hazard and vulnerability studies at Diablo Canyon and SONGS, including using three-dimensional geophysical seismic reflection mapping and other advanced techniques to explore fault zones near Diablo Canyon.

Seismic events can cause major problems for nuclear power plants, as demonstrated by the July 2007 earthquake in Japan. The largest nuclear power plant in the world – the Kashiwazaka-Kariwa nuclear plant -- remains in partial shutdown over 2.5 years following this earthquake. This earthquake magnitude exceeded values used for the plant design, and the resulting damage has necessitated costly plant repairs and large expenses to purchase replacement power during the plant's outage.

The tsunami hazards at Diablo Canyon and SONGS must also be reexamined during license renewal reviews. Currently available tsunami studies for both plants are at least 10 years old and do not take advantage of modern tools and recent studies that could improve the quality of the assessments such as new data from the National Oceanic and Atmospheric Administration, new probabilistic hazard assessments, and inundation modeling.⁴ The December 26, 2004, Great Sumatran earthquake that resulted in widespread and catastrophic tsunami impacts and loss of life around the Indian Ocean caused the automatic shut-down of the Kalpakkam nuclear power plant on the east coast of India, which was restarted six days later.⁵ In light of the new and significant seismic information that is available for plant sites since the original operating licenses were issued,, the seismic and tsunami hazards for nuclear power plants should be examined as Category 2 site-specific issues during license renewal reviews.

2. Accumulation of At-Reactor Spent Nuclear Fuel: Twenty additional years of plant operation would generate additional nuclear wastes of all classes (low, medium

³ *An Assessment of California's Nuclear Power Plants: AB 1632 Report, November 2008 (CEC-100-2008-009-CMF) and AB 1632 Assessment of California's Operating Nuclear Plants which can be obtained from the Energy Commission's website at <http://www.energy.ca.gov/ab1632/documents/index.html>.*

⁴ 2008 IEPR, p. 9 (see above).

⁵ *Volcanic and Tectonic Hazard Assessment for Nuclear Facilities* Edited by C. B. Connor, N. A. Chapman and L. J. Connor, Cambridge University Press, 978-0-521-88797-7, p. 4.

and high-level wastes), which would result in additional impacts from waste management, storage, transport and disposal. The long-term risk of at-reactor storage and accumulation of spent fuel on California's seismically active coastline should be reevaluated during license renewal reviews given the uncertainties regarding when a permanent repository or offsite interim storage facility will become available. The Obama Administration has ordered most activities to cease relating to the licensing of the Yucca Mountain Nuclear Waste Repository. The uncertainties surrounding U.S. nuclear waste disposal policies and the federal high-level waste management program means that nuclear reactor operators, including Pacific Gas and Electric Company (PG&E) and Southern California Edison (SCE), can no longer count on transferring spent fuel to a federal nuclear waste repository in the near or medium-term future. As a result, the utilities must continue indefinitely to store spent nuclear fuel at the reactor sites. For California, this means that about 6,700 assemblies of spent fuel (approximately 2,600 metric tons of uranium) that are currently being stored at operating and decommissioned nuclear plants in-state, as well as the anticipated generation of spent fuel, will remain at these sites for the foreseeable future. The potential economic and environmental impacts from the long-term storage of nuclear wastes at reactors, including low, medium, and high-level wastes, should be evaluated as a Category 2 issue on a plant-by-plant basis.

3. Safeguards and Security: The NRC states that security issues are not tied to a license renewal action but are considered to be issues that need to be dealt with constantly as part of the current license (GEIS, p. 1-12). However, extending a plant's license to allow it to operate an additional 20 years changes the security threat by adding large quantities of spent fuel to the reactor site. These additional quantities of spent fuel could pose a richer and more attractive target for potential terrorists. License renewal results in a far greater accumulation of spent fuel being stored at a reactor than was originally envisioned when the plants were first licensed.

The revised GEIS should recognize the increased potential for terrorist attacks on nuclear power plants and spent fuel storage facilities, including air attacks similar to those that occurred on Sept. 11, 2001. It should also recognize that plants located in densely populated areas or along major routes may be more attractive targets for such attacks than more remotely located plants. Until it can be proven that the nation's nuclear power plants, including control rooms and spent fuel storage areas, can withstand terrorist attacks or that nuclear plant operators can prevent them, environmental impact reviews for license renewal should include meaningful site-specific analyses of the potential risks and environmental impacts from large-scale terrorist attacks, taking into consideration the potentially affected population (i.e., residents, businesses, and workers) and available transport routes. Therefore, the potential impacts from sabotage or a terrorist attack on a plant should be considered Category 2, site-specific issues and should be included during a plant's license renewal environmental impact review. Although some of the security information pertaining to nuclear power

plants must remain “safeguarded” information, sufficient information should be provided to the public during the license renewal review regarding whether all reasonable efforts are being made to minimize the risks and consequences of a potential terrorist attack.

4. Aging Plant Issues: The draft GEIS appropriately requires licensees to have aging management programs for plant components, but it neglects to describe how these programs will be evaluated and how quality assurance programs will be maintained. In the license renewal proceeding for the Pilgrim Nuclear Station the NRC judged the adequacy of the plant’s Aging Management Program simply on whether it provided “reasonable assurance” that the components would perform the functions outlined in 10 C.F.R. Section 54.4(a) (1) – (3). This standard is insufficient to ensure reactor safety over a 20-year license renewal period. For example, the problem of substandard or counterfeit plant replacement parts should be addressed within a plant’s aging management plans. SONGS faced such a problem with its new steam generators, which had defective welds. Aging management plans should include plans for guarding against the procurement of substandard or counterfeit parts and for detailed inspections of all new parts.

In addition, as we enter an era of large numbers of aging and refurbished nuclear power plants, it is important that the NRC begin developing additional proactive methods for identifying age-related safety problems before they become significant. In license renewal application proceedings, individual plants should be evaluated in detail for aging issues and trends to identify preliminary or potential “anticipatory indicators” of safety problems related to plant aging. Trends could include steam generator tube cracking, vessel head corrosion, embrittlement, repeated unplanned reactor shutdowns, long-term problems, and/or repeated failures in safety-related equipment. These issues must be considered Category 2 issues and evaluated on a plant-specific basis.

In the case of California reactors, which are located in seismically active regions, the combined effects of age-related degradation and the risk and potential impacts of an earthquake should be evaluated. For example, earthquakes are considered possible initiating events for the development of through-wall cracks that could challenge the integrity of a reactor pressure vessel. In addition, the cumulative effects of marine salt spray corrosion should be evaluated for coastal plants, such as California’s nuclear power plants.

Given the plant-specific nature of these issues, age-related plant degradation issues must be reconsidered as Category 2 plant-specific items in site-specific license extension proceedings.

5. Emergency Response Planning: The NRC considered the need for a review of emergency planning issues in the context of license renewal and concluded that programs for emergency preparedness at nuclear plants apply to all licensees,

that all operating licensees must keep up with changing demographics and other site-related factors (GEIS, p. 1-11), and that there is therefore no need for a special review of emergency planning issues in the context of an environmental review for license renewal (GEIS, p. 1-12). However, the public has expressed considerable concern about the adequacy of evacuation plans and emergency preparedness plans, particularly with regard to access to emergency routes in the event of an earthquake or terrorist attack. Although the NRC and utilities routinely conduct table-top exercises, people are concerned about the lack of real testing of these plans and whether such plans will work in an actual emergency. Some have expressed concern that the infrastructure is not adequate to evacuate large populations, such as the more than 12 million people who live within a 50-mile radius of SONGS. Another common concern is that evacuation routes might be blocked due to traffic congestion or damaged roads, for example, following a major earthquake.

Clearly the population potentially impacted by the release of radioactive materials following an accident or attack on a nuclear power plant and the viability of emergency preparedness plans vary from plant to plant. As such, the NRC should include an evaluation of emergency planning as a Category 2, plant-specific issue.

6. Plant Safety Culture: Concerns about safety culture problems at SONGS have increased in recent years and are well-documented. The NRC noted that the license renewal environmental review is confined to environmental matters relevant to the extended period of operation requested by the applicant and that safety and security matters are considered outside the scope of the license renewal review (GEIS, p. A-95). Investigations of the Columbia Space Shuttle disaster (2003) and the Challenger Space Shuttle (1986) disaster disclosed major deficiencies in risk and safety assessments and management practices for these shuttle programs that developed over time. In its Response to Comments in the GEIS, Vol. 2, p. A-84 to A-85, the NRC staff noted improvements in the NRC's inspection and assessment procedures following the Davis-Besse reactor head degradation and NRC's enhanced Reactor Oversight Program to more fully address licensee safety culture. However, we strongly believe that a plant's safety culture merits reexamination during license renewal reviews, similar to the need for a reexamination of aging plant hardware. Therefore, a plant's safety culture should be included as a Category 2 issue for review on a site-specific basis. A plant's safety culture should be included in the assessment of the adequacy of the licensee's aging management plans and should be reevaluated on a plant-specific basis during license renewal reviews.
7. Evaluation of Energy Alternatives: The draft GEIS states, "alternatives for replacement power are generally the same from plant to plant. Applications to date have indicated that the environmental impacts of license renewal are small and less than the environmental impacts of alternatives for replacement power" (GEIS, p. A-38). However, the types of replacement power available and

environmental impacts differ substantially from region to region. The environmental impacts included in GEIS analyses are incomplete in that they have not considered the full lifecycle impacts of power production options. (For example, nuclear power lifecycle impacts include impacts from uranium mining, fuel enrichment, plant operation, plant decommissioning and nuclear waste storage, transportation and disposal.) The lifecycle impacts for different energy alternatives in comparison to nuclear power production should be included in the revised draft GEIS.

The draft GEIS should be revised to require regional or site-specific lifecycle evaluations of nuclear power and alternative electricity sources, including wind, solar, biomass, geothermal, and energy efficiency. For example, the American Council for an Energy-Efficient Economy estimates that a comprehensive energy efficiency program could reduce energy demand by 18% in 2010 and 33% in 2020. In addition, in some regions base load renewable resources or a combination of intermittent renewable resources and gas-fired generation or energy storage could replace large quantities of nuclear power. Evaluations of the environmental impacts of these power options should include "cradle-to-grave" or lifecycle environmental impacts.

A share of the nuclear energy generation in California could be more or less easily replaced with alternative resources, depending upon the location. For example, geothermal reserves located in Nevada and the Coachella and Imperial Valleys in California could be tapped to yield baseload energy currently provided by the Palo Verde Nuclear Generating Station, and augmented by solar resources. A portion of the energy generated from Diablo Canyon could be replaced by renewable resources located across the breadth of Central California, augmented by dispatchable gas-fired and continuous renewables, such as geothermal and biomass resources. The latter, capable of cycling up and down, unlike Diablo Canyon, would facilitate the integration of the intermittent resources that are expected to largely contribute to meeting the state's renewable energy goals.

8. Need for the NRC to Hold License Renewal Hearings Near Reactor Communities: Communities located near operating power plants should be provided an opportunity to comment on the scope of the issues to be considered during the license renewal reviews. The NRC should conduct public meetings in communities close to nuclear power plants where plant owners have applied for license renewal. Meetings should be held both during the day and the evening to accommodate the work schedules for members of the public.
9. Public Comment Process: The NRC has stated they will consider public comments based on whether these comments provide any information that is new and significant compared with that previously considered in the GEIS. If the comments provide new and significant information that could change the conclusions in the GEIS, NRC will consider and address the comments in the

SEIS. The NRC should clearly explain in the GEIS what criteria are used to determine what is considered to be "new and significant information." In prior license renewal proceedings, state representatives and members of the public have provided new and significant information related to seismic, emergency response, population demographics, the potential impacts particularly in largely populated areas from acts of sabotage or a terrorist attack, and other issues related to license renewal, and yet the NRC has found those issues to be non-admissible contentions. It is unclear why the NRC excludes from license renewal proceedings site-specific issues that clearly affect the safety and costs of the continued operation of a nuclear power plant.

Conclusions:

California's two operating nuclear power plants provide about 14% of the state's total electricity generation and have operated approximately half of their 40-year initial license periods. PG&E has submitted a license renewal application to the NRC for Diablo Canyon and SCE is exploring the feasibility of seeking an additional 20-year license extension for SONGS. If granted, license renewals could keep Diablo Canyon and SONGS in operation until the mid 2040s. In past license renewal proceedings, the NRC has excluded an examination of seismic hazards, plant security, emergency preparedness, environmental review of spent fuel storage and analysis of spent fuel storage options from the scope of NRC's license renewal review. The NRC's Office of Inspector General completed an audit of the license renewal process in September 2007 and concluded that NRC staff should improve their analyses and audits (OIG-07-A-15). An important means for improving the NRC's license renewal process would be to revise the license renewal review to allow important site-specific issues to be reexamined during this review. For example, new and significant information that has arisen since a plant originally received its operating license should be examined during license renewal reviews.

The discovery, announced to the public in 2008, of a new Shoreline Fault near Diablo Canyon is an example of new and significant seismic information that should be reviewed (Category 2 issues) during Diablo Canyon's license renewal review. The USGS and PG&E are conducting additional seismic research in the vicinity of Diablo Canyon and the Energy Commission has recommended additional tsunami and seismic research at both Diablo Canyon and SONGS. The NRC and the USGS are beginning in January 2010 an independent assessment of Diablo Canyon's seismic research program. New and significant seismic research information resulting from these studies must be considered in Diablo Canyon's license renewal review. Seismic issues, particularly when new and significant seismic research information is available, should be considered Category 2, site-specific issues to be examined during license renewal reviews for these plants.

Plant safety culture has been an ongoing concern at plants throughout the U.S., particularly at SONGS, and should receive as much scrutiny and attention during the NRC's review of plant aging management plans during its license renewal review and

environmental impact assessment as attention to the aging plant hardware, systems and materials. Plant management and plant workers' attitudes and strict adherence to proper maintenance and safety procedures are important, particularly in aging reactors, as plant components and systems show signs of aging and stress.

The NRC has stated that the purpose of the GEIS revision is to improve the efficiency of the license renewal process by (1) providing an evaluation of the types of environmental impacts that may occur from renewing commercial nuclear power plant operating licenses, (2) identifying and assessing impacts that are expected to be generic (the same or similar) at all nuclear plants (or plants with specified plant or site-characteristics), and (3) defining the number and scope of environmental impact issues that need to be addressed in plant-specific EISs. We recommend that the NRC include seismic issues, emergency response planning, safety culture, evaluation of energy alternatives, as well as at-reactor nuclear waste accumulation, transport and disposal impacts among the environmental impact issues that should be addressed in plant-specific EISs for license renewal. We also strongly urge the NRC to hold license renewal hearings, including issue scoping and identification hearings, in the vicinity of the plants where plant owners have applied for license extensions.

This concludes our remarks.