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California Energy Commission
Dockets Office, MS-4
Re: Docket No. 07-AB-1632 and 08-IEP-1F
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DOCKET

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Subject: California Energy Commission 2008, *An Assessment of California's Operating Nuclear Power Plants: AB 1632 Committee Report*, CEC□100□2008□108□CTD

This document conveys the comments of San Luis Obispo Mothers for Peace (MFP). MFP again commends the foresight of Assembly Bill 1632, introduced by Sam Blakeslee. The AB 1632 Committee Report is particularly beneficial in the fact that it reveals all that is NOT yet known about the potential problems and impacts of the continued operation of the two nuclear power plants in California.

For purposes of clarity, sections of the AB 1632 Report are quoted in italics. MFP comments follow the sections to which they pertain, are indented, and are not in italics.

p. 3 *Seismic Hazards at Diablo Canyon*

MFP COMMENTS: Page 5 of the report acknowledges that some scientists believe that the Hosgri Fault is a thrust fault, that "the implications of a thrust fault characterization for the seismic vulnerability of Diablo are uncertain", and that "PG&E has not published an analysis showing the implications of 100 percent thrust faulting on the safety of the plant." However, no recommendations are made for PG&E to publish such an analysis or for any type of study to determine the effects a 100 percent thrust fault could have on the plant.

p. 6-7 *Seismic Hazards at the Diablo Canyon Facility*

MFP COMMENT: MFP agrees with the Report statement that there is still much to be learned about the faults in the vicinity of Diablo Canyon and whether or not the design of the plant is adequate. MFP supports all the recommendations in this portion of the Report, and it

emphasizes #4 which REQUIRES further study as part of the license renewal feasibility assessment for the CPUC. That study must include analysis independent of the utility.

In addition, the report must include a recommendation that the analysis incorporate the effects of an earthquake on transformers, containers, piping, and mechanical and electrical equipment that are not built to withstand a significant seismic event.

p. 14 Vulnerability of Spent Fuel Storage Facilities to Seismic and Terrorist Events

p. 14, paragraph 1 The spent fuel pools and dry cask storage facilities at Diablo Canyon and SONGS have been designed to sustain a design basis ("safe shutdown") earthquake at the plants, and they are unlikely to fail due to an earthquake.

MFP COMMENT: The term "unlikely" is not informative in this context. At the present time, it is unknown how long those facilities will contain radioactive wastes and it is unknown how the passage of decades will affect vulnerability to earthquakes. The dry casks are generally licensed for 20 years at the time of installation, and yet there is no basis for assuming that the contents of those casks will not still be present 40, 60, or 80 years (or more) into the future. Neither is it known what provisions or requirements might be ordered by the NRC for re-licensing or replacing the casks in the future.

p. 14, paragraph 2 The greatest risk to any nuclear spent fuel pool is the loss of water or the loss of active cooling. A loss of cooling event could be precipitated by earthquakes or a terrorist event. If not mitigated, such an event could result in overheating of the stored spent fuel, melting of the fuel cladding, and the subsequent release of radioactive material.

MFP COMMENT: The above paragraph fails to include the possibility of combustion of zircaloy cladding of spent fuel inside the dry casks. Such an event would result in fire releasing cesium-137, a much more serious event than the melting of fuel cladding. The scenarios of how such a fire could be initiated are clearly documented in section V, paragraph 8 (page 11) of the SECOND DECLARATION OF DR. GORDON R. THOMPSON ON BEHALF OF SAN LUIS OBISPO MOTHERS FOR PEACE IN SUPPORT OF CONTENTION 2 REGARDING THE CONSTRUCTION AND OPERATION OF THE DIABLO CANYON INDEPENDENT SPENT FUEL STORAGE INSTALLATION, April, 2008.

MFP will send electronically and also in hard copy the complete 26-page report referred to above. Readers will find numerous footnotes and references within the report to document its statements and conclusions.

p. 14, paragraph 2 The spent fuel pools are not expected to suffer a catastrophic loss of cooling as the result of earthquakes.

MFP COMMENT: The term "not expected to" is without clear meaning. Again, there is the problem of anticipating the number of decades that fuel will be stored in the pools, and the effects of time and stress on the mechanics and the materials being relied upon to prevent such a loss of cooling. Since none of these factors can be foreseen, the statement lacks validity.

p. 14, paragraph 5 In general, a dry cask storage facility is considered to have a lower degree of overall risk than a spent fuel pool. Over the last 20 years, there have been no radiation releases from a dry cask storage facility that have affected the public, no radioactive contamination, and no known or suspected attempts of sabotage.

MFP COMMENT: Given that the length of time that dry casks will be needed in California is unknown but can reasonably be projected to be in multiples of 20 years, no conclusions can be drawn from the above paragraph. Neither can this report rule out possibilities that over the decades the dry casks in use today may degrade, might be replaced, or that a mishap might occur during the transfer of spent fuel into a cask.

p. 15, paragraph 3 Limited information is available on the vulnerability of dry cask storage to sabotage or terrorist attack, which is consistent with the National Academies' findings in its 2006 study of commercial spent fuel storage safety and security. While terrorist scenarios have been postulated that could release large quantities of radioactive materials into the environment, an assessment of the likelihood of such scenarios occurring has not been publicly released. Such information is needed for state planning for emergency response and consequence mitigation.

MFP COMMENT: Mothers for Peace strongly concurs with this finding. The NRC has not revealed the quantitative basis for its recent rulemaking on the Design Basis Threat, which does not require that plant operators have in place plans to defend reactors or spent fuel facilities from attacks from the air. And MFP is in the midst of a legal challenge of the NRC Staff finding that even a successful terrorist attack on the dry casks at Diablo Canyon would have “no significant impact”. NRC Staff went so far as to state at a July 1, 2008 Hearing before the Nuclear Regulatory Commissioners that no quantitative analysis was done, nor is it needed to support the finding of “no significant impact”. It would be entirely appropriate for the California Energy Commission to let the NRC know that it has a higher standard of evidence than the NRC Staff.

*p. 15, paragraph 5.
Recommendations*

14. PG&E and SCE should return their spent fuel pools to open racking arrangements as soon as possible and report to the Energy Commission on their progress in doing so.

MFP COMMENT: The spent fuel pools at Diablo Canyon have been ‘re-racked’ to provide greater storage capacity, and MFP agrees with the Report’s statement that “The more densely configured spent fuel pools are considered to have greater risk than a spent fuel pool that has a more open racking arrangement.” (Report page 14) MFP also concurs with the Report’s finding that “a dry cask storage facility is considered to have a lower degree of overall risk than a spent fuel pool” and that “the use of dry cask storage at a nuclear power plant has the potential to reduce the overall risk associated with at-reactor storage of spent fuel, including the risk of seismic and terrorist events, since dry cask storage would allow the spent fuel pools to be returned to their original configuration and design loading.” (Report pages 14-15)

The Report, however, does not consider the intention of the utility. Pacific Gas and Electricity (PG&E) does not intend to use the casks to return the pools to their original configurations. The pools at Diablo Canyon are reaching capacity, and PG&E’s interest in the dry casks is simply for the ‘overflow.’ PG&E intends to fill the casks as needed, not to increase safety at the plant. A State or Federal agency must require the offloading of fuel from the pools into dry casks in order to accomplish that goal.

15. The Energy Commission should continue to work with the Nuclear Regulatory Commission to obtain the necessary security clearances for selected California officials to review studies that assess the vulnerability of California’s nuclear plants, spent fuel storage facilities, and spent fuel shipments to terrorist attacks or sabotage and the consequences of such attacks.

MFP COMMENT: MFP strongly concurs with this recommendation.

There are other issues not addressed in the Report regarding the dry casks:

1. The selection of the cask. PG&E is not using the most current and safest Holtec cask design. Holtec Hi-Storm 100S system casks are currently being installed; the next generation of casks (100U) is much more robust.
2. The longevity of the casks. Casks are only licensed for 20 years. How many times can they be relicensed? What happens when the casks begin to deteriorate?
3. Placement of casks. In an attempt to reduce the terrorist threat and potential consequences, MFP promotes the scattering of the casks, earthen berms, or hardened containment.

p. 15-16 Vulnerability of Roadways and Transmission Systems

Diablo Canyon is served by a two-lane asphalt road and a separate emergency access road.

MFP COMMENT: The Report is primarily concerned with seismic vulnerability, and nothing is said regarding its vulnerability to landslides. The recommendation that PG&E “should reassess the adequacy of access roads” (Report page 16) is not stated strongly enough. There must be a mandate.

p. 16 Vulnerability to Plant Aging-Related Degradation

The state’s nuclear plants are now approaching their fourth decade of operation. As they age, their systems, structures, and components are all subject to age-related degradation, which, if unchecked, could lead to a loss of function and impaired safety.

MFP COMMENTS: This report should include a recommendation that there be an analysis of degradation of plant components including a probabilistic risk assessment. Additionally, the incidence and frequency of overlooked or deferred maintenance needs to be assessed.

p. 17 All units at Diablo Canyon and SONGS have achieved the highest level of the NRC’s maintenance-related performance indicators since the second quarter of 2006, when a new performance-tracking system was initiated. A key element of an effective maintenance program is the plant’s safety culture (a strong “safety-first” dedication and accountability among plant workers).

MFP COMMENTS: Long-term conclusions may not be drawn from a two year record.

It should also be noted that Diablo Canyon Nuclear Power Plant has had numerous violations of California regulations, and one resulted in a fine levied against PG&E of \$193,715.00 by the Department of Toxic Substances Control (April 9, 2003). The resulting required six years of data preservation to monitor and prevent the recurrence of past problems extends until 2009.

p. 18 Diablo Canyon ... appears to have a relatively effective safety culture.

MFP COMMENTS: On October 7 at a DCISC public meeting, PG&E’s Bill Guidemond, Site Services Director, indicated that the plant has established a Management Review Committee as part of their Corrective Action Program that has an average of 50 action requests daily. Because the committee meets four days a week (Monday through Thursday), they receive in

the neighborhood of 200 issues weekly, thus, 800 issues monthly. These issues can include anything from leaks to procedural violations. The public has no access to the issues brought forth, the reviews of those issues, the decisions made, or the resolutions or lack thereof. In the same meetings it was brought up that employees who report safety concerns have encountered negative consequences. This situation does not produce an “effective safety culture,” nor can the “local community review major plant safety and performance issues” as indicated toward the end of that paragraph.

p. 18 Recommendations

17. To support the long-term reliability of Diablo Canyon and SONGS as the plants age, effective safety culture and maintenance programs must be maintained at the plants in conjunction with enhanced oversight mechanisms, including:

The state should consider requiring an independent safety oversight committee at SONGS similar to the Diablo Canyon Independent Safety Committee.

MFP COMMENT: Mothers for Peace strongly disagrees with this recommendation.

No other nuclear plant in the nation has such a committee, and for good reason. It is a paper tiger. This Committee has absolutely no authority to make changes at Diablo Canyon, nor does it report findings to the Nuclear Regulatory Commission (NRC). Its function is stated thusly under “history” on the DCISC website:

“...The Committee shall review Diablo Canyon operations for the purpose of assessing the safety of operations and suggesting any recommendations for safe operations. Neither the Committee nor its members shall have any responsibility or authority for plant operations, and they shall have no authority to direct PG&E personnel. The Committee shall conform in all respects to applicable federal laws, regulations and Nuclear Regulatory Commission (‘NRC’) policies.”

The DCISC does have the potential to inform and to take input from the public, but its October 7 –8, 2008 meetings in Avila Beach demonstrated that it has no interest in serving even that purpose. After publishing a detailed agenda of topics to be discussed at each of the four meetings scheduled in two days, the DCISC – with no prior notice - compressed its schedule by including items scheduled for the evening meeting into the afternoon meeting. The evening meeting was then adjourned within minutes of its publicized starting time. Four members of MFP had prepared questions and comments on these agenda items and had scheduled themselves to rotate their attendance at the various meetings. Thus, MFP and other members of the public were denied the opportunity to witness the presentations, to ask questions and to give input on a multiplicity of topics. While it is true that MFP may submit comments via the DCISC website, that is a poor substitute for being in the same room with consultants and presenters. It also eliminates those topics from the televised coverage that is shown on public access TV and serves to further educate the public.

During the recent DCISC meetings, a report was made by a representative of the Professional Engineers Union that the engineers who expressed concerns about safety were negatively affected in their job evaluations and pay increases. If the DCISC was doing its job, it would relay that comment to the NRC because, if true, it constitutes a violation of federal regulations. But DCISC does not make reports to the NRC.

DCISC excels at producing paper to describe problems at the Diablo Canyon plant, but little preventative action is taken by the committee to make the plant safer for the public or the workers. A fire and explosion of a large transformer that occurred Aug. 17, 2008 provides a recent example. The DCISC role was to hear a report about the fire and about PG&E's plans to determine the cause of the fire and to prevent a reoccurrence of the extensive damage from ceramic shards that penetrated windows and caused extensive damage to a nearby administrative building. PG&E was quite open about stating how very fortunate it was that the fire happened near midnight when few people were at the plant and no one was in that area. The transformer that burned was replaced by a reconditioned one and Unit Two went back on line within a couple of weeks, BEFORE some of the measures proposed by PG&E to protect plant personnel from the next transformer fire could be implemented. One proposed measure, the placement of barriers between and around transformers, will not be implemented until there is a regularly scheduled outage. Clearly, utility profits take priority over safety. Since transformer fires are regular events at Diablo Canyon (and elsewhere), not even PG&E pretends that future fires won't occur. And yet, DCISC members and consultants did not ask a single question of why Unit Two was returned to service without better protection for workers.

DCISC has a budget of millions per year. This expenditure does not contribute to public safety. Rather than create a parallel committee for SONGS, the CEC should recommend to the CPUC that it disband DCISC.

p. 27 LAND USE AND ECONOMIC IMPLICATIONS OF ON-SITE WASTE STORAGE

The experience of several communities where nuclear power plants have been shut down and decommissioned but a dry cask storage facility remains does not support this presumption. Indeed, local communities near the Rancho Seco plant outside of Sacramento, California, and the Maine Yankee nuclear power plant have successfully converted the land once used for the power plant and immediately around it into areas that provide recreational or economically□productive mixed uses. The Connecticut Yankee nuclear plant site may also be developed soon. Accordingly, the presence of dry cask storage facilities at Diablo Canyon and SONGS after the plants are decommissioned should not prevent alternate uses from being established.

MFP COMMENT: The above paragraph omits consideration of the Hosgri earthquake fault, approximately 2.5 miles from the site of the Diablo Canyon plant and its extensive waste storage facilities. This fault is classified by the United States Geological Survey as "major" and "active". The conclusion that the Diablo Canyon site is comparable to the other sites given in this paragraph is not supportable.

p.28 An analysis of property sales data and other economic indicators in areas where a dry cask storage facility is operating would provide a useful starting point to assess potential economic impacts of extended spent fuel storage at California's nuclear plants.

MFP COMMENTS: The sentence quoted above merits being re-worded as a RECOMMENDATION. It should be expanded to include an analysis of the impact of an event such as a significant earthquake. Both Tourism and Agriculture should be included in such an analysis, as much of the economy of the Central Coast relies on revenues from those sources.

p. 30 Recommendation

24. A more detailed study of alternative power generation options is needed to quantify the reliability,

economic, and environmental impacts of replacement power options. This is being done under the replacement power assessments, which are being initiated by the utilities under CPUC guidance.

MFP COMMENTS: In order to avoid the taint of bias, this recommendation should include studies by experts independent of the utilities.

License Renewal Issues for State Policymakers

p.33 Recommendation

25. The Energy Commission, working with the CPUC as part of the CPUC's authority to fund and oversee utilities' plant relicensing feasibility studies, should develop a plan for reviewing the costs and benefits of nuclear plant license extensions, scope of evaluation, and the criteria for assessment. This review should include the adequacy of the plants' maintenance programs and safety cultures; plans for waste storage, transport and disposal; seismic hazard assessments; the cradle-to-grave evaluation of the nuclear plants compared with alternative generating and transmission resources; contingency plans in the event the state's nuclear power plants have prolonged outages; implications for grid reliability if these plants shut down; and the overall economic and environmental costs and benefits of license extension.

MFP COMMENTS: Recommendation #25 has the endorsement of MFP. The NRC license renewal process is too narrowly focused; it must include all impacts – costs, environmental effects, security, emergency preparedness, waste storage, and alternative generating resources.

An analysis is also needed of the costs and benefits of replacing once-through-cooling with alternative cooling methods to bring the plant in conformance with rules in the process of being promulgated by the State Water Board. The costs should include the cumulative damage to marine life while the benefits would include the environmental and financial benefit of increasing fish stocks.

Additionally, MFP highly recommends that CEC take into account the findings of the Office of Inspector General of the NRC (OIG) in its AUDIT OF NRC'S LICENSE RENEWAL PROGRAM (OIG-07-A-15). This very thorough report may be accessed at

http://adamswebsearch2.nrc.gov/idmws/doccontent.dll?library=PU_ADAMS^PBNTAD01&ID=072500038

In this report, the OIG specifies five areas where improvements are recommended. One fundamental need is summarized on page 7 (underlining added by MFP):

“Improvements to the staff's reporting efforts could provide necessary support for NRC's license renewal decisions. Adequate documentation of review methodologies and support for staff conclusions in license renewal reports is important for supporting the sufficiency and rigor of NRC's review process. However, the NRC staff does not consistently provide adequate descriptions of audit methodology or support for conclusions in license renewal reports. This is because [Division of License Renewal] DLR has not fully established

reportwriting standards and does not have a report quality assurance process to ensure adequate documentation. As a result, stakeholders and others who read the reports could conclude that regulatory decisions are not adequately reviewed and documented.”

MFP urges the CEC to assess the progress being made within the NRC to implement all five of the improvements recommended in this report. MFP quotes OIG recommendation A, above, to call attention to the fundamental nature of the problem described. If the facts upon which license renewal decisions would be based are not reliable and verifiable, then the validity of any renewal license would also be in question. It is necessary that the State of California know the methodology of the NRC DLR as the CEC assesses the risks inherent in prolonging the operations of California’s two aging nuclear plants.