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TO: Secretary, U.S. NRC
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ATTN: Rulemaking and Adjudications Staff
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RE: Draft revision to the Generic Environmental Impact Statement for License Renewal of Nuclear plants, NUREG-1437, revision 1 (GEIS)

San Luis Obispo Mothers for Peace ("SLOSLOMFP") hereby submits its comments on the NRC's proposed rule, "Revisions to Environmental Review for Renewal of Nuclear Power Plant Operating Licenses," 74 Fed. Reg. 38,117 (July 31, 2009); and on the NRC's Draft Generic Environmental Impact Statement ("GEIS") for License Renewal of Nuclear Plants (2009). Both the proposed rule and the draft GEIS are completely inadequate to comply with the National Environmental Policy Act and therefore they should be withdrawn.

In support of its comments, SLOMFP adopts and incorporates by reference the following additional documents, which are attached:

- Dr. Gordon R. Thompson, *Assessing Risks of Potential Malicious Actions at Commercial Facilities: The Case of a Proposed Independent Spent Fuel Storage Installation at the Diablo Canyon Site* at 15 (June 27, 2007) (Attachment 1);
- Dr. Gordon R. Thompson, *Environmental Impacts of Storing Spent Nuclear Fuel and High-Level Waste from Commercial Nuclear Reactors: A Critique of NRC's Waste Confidence Decision and Environmental Impact Determination* (February 6, 2009) (Attachment 2);

¹ These comments were prepared with the assistance of SLOSLOMFP's attorney, Diane Curran.

- Dr. Gordon R. Thompson, *Risks and Risk-Reducing Options Associated with Pool Storage of Spent Nuclear Fuel at the Pilgrim and Vermont Yankee Nuclear Power Plants* (May 25, 2006) (Attachment 3)
- *Comments of the Institute for Energy and Environmental Research on the U.S. Nuclear Regulatory Commission's Proposed Waste Confidence Rule Update and Proposed Rule Regarding Environmental Impacts of Temporary Spent Fuel Storage* (February 6, 2009) (Attachment 4);
- Institute for Energy and Environmental Research, *Comments on the Nuclear Regulatory Commission's Rulemaking Regarding the "Safe Disposal of Unique Waste Streams Including Significant Quantities of Depleted Uranium* (October 30, 2009) (Attachment 5)².

COMMENTS

Safety Standards for New Plants Should be Applied to Existing Facilities

The fact that the NRC has newer and more rigorous standards for reactor safety in the new generation of nuclear power plants is a tacit admission that those of the past are inadequate to protect human health and the environment. The NRC must apply updated and more stringent rules and regulations regarding safeguards and security for NEW reactors to existing facilities. If the new reactor standards are deemed necessary to protect human health and the environment, then such standards should be applied to any reactor given permission to operate beyond its original license.

Operation and Maintenance Deficiencies Should be Addressed in the GEIS

Recent NRC inspection reports on Diablo Canyon (August, 2009) indicate that PG&E is not meeting industry standards in its identification and resolutions of problems at the plant. In late October, 2009, it was discovered that for 18 months the plant was run with defective control of some of the valves relied upon to flood the Unit 2 reactor with essential cooling water in the event of a serious accident or sabotage. An NRC report on its findings has not yet been made available.

SLOMFP contends that a plant's mechanical and personnel history provide critical predictive information which the NRC must consider before extending the life of a nuclear facility. Yet, there is no resource area in the Draft GEIS that explores the plant's operation and maintenance record. This must be a Category 2 issue.

GEIS Should Not Exclude Need for Power

The California Public Utilities Commission (CPUC) is in the process of determining whether or not continued reliance on nuclear energy is in the best economic interests of the people of California. PG&E's decision to apply for license extensions 15 years in

² Each of these expert reports has been submitted to the NRC in connection with previous rulemakings and/or adjudications.

advance of the expiration of the current licenses raises questions regarding its intentions toward the coming CPUC conclusion.

Again, the GEIS excludes the issue of the need for power. Before asking ratepayers to further invest in the continued operation of a nuclear facility, the NRC must require data-driven answers to the question of cost vs. benefit. This must be a Category 2 issue.

Availability of Uranium Fuel Should Be Addressed

Optimistic projections of the availability of uranium fuel supplies show that resource running out in about 2020 – BEFORE the period at stake in the possible Diablo license extensions. [See December 1, 2009 publication of an article by Brian Wang titled "Uranium Supplies are Likely to be Adequate until 2020," available at www.theoil drum.com/]. If this is true, all nuclear plants in the country will be affected. SLOMFP advocates that the industry apply its considerable resources toward establishing renewable sources of energy.

Spent Fuel Storage Should Be Classified as Category 2.

In the License Renewal GEIS, the NRC admits for the first time that the environmental impacts of a spent fuel pool fire are comparable to the impacts of a severe reactor accident, *i.e.*, that they may be significant. See Vol. 1 page 4-156 ("it is concluded that the environmental impacts from accidents at spent fuel pools (SPFs) (as quantified in NUREG-1738) can be comparable to those from reactor accidents at power.") Yet, although the License Renewal GEIS treats severe accidents as Category 2 environmental impacts (*i.e.*, subject to review in individual license renewal proceedings), it continues to treat spent fuel pool fires as Class 1 impacts, as it did in the 1996 License Renewal GEIS.

In order to rationalize its Category 1 designation of pool fires, the NRC resorts to omitting relevant information, misrepresenting previous studies, and neglecting to establish procedures that would give interested members of the public a fair chance to test the validity of its assertions. The following are just a few examples of the NRC's distortions and lack of candor:

- The NRC distorts the impacts of a pool fire by restricting its impact analysis in Table E-18 on immediate and latent fatalities and ignoring the dominant environmental impact of a pool fire: land contamination. The principal impact of a pool fire – regardless of whether it is caused intentionally or by accident -- is not death and illness through inhalation doses, but land contamination. See the attached report by Dr. Gordon R. Thompson, *Assessing Risks of Potential Malicious Actions at Commercial Facilities: The Case of a Proposed Independent Spent Fuel Storage Installation at the Diablo Canyon Site* at 15 (June 27, 2007) (Attachment 1).³ A pool fire at a nuclear power plant could

³ SLOMFP presented Dr. Thompson's report and supporting declaration to the NRC Commissioners in 2007, in San Luis Obispo Mothers for Peace's Contentions and

contaminate thousands of square miles of land, causing widespread illness and costing billions of dollars in clean-up costs. *Id.* See also Dr. Gordon R. Thompson, *Environmental Impacts of Storing Spent Nuclear Fuel and High-Level Waste from Commercial Nuclear Reactors: A Critique of NRC's Waste Confidence Decision and Environmental Impact Determination* (February 6, 2009) (Attachment 2).

For the NRC to exclude contamination effects from an analysis of the significance of the impacts of a pool fire is absurd and shows a disturbing lack of scientific integrity.

- The NRC also distorts NUREG-1738 by claiming that its results are conservative when applied to operating plants, because a plant in its decommissioning phase has “fewer protective features.” GEIS p. E-34. In fact, NUREG-1738 explicitly acknowledges that it is *not* conservative for operating plants, and that the study was limited to the question of whether emergency planning measures should be required for nuclear power plants that had entered their decommissioning phases. As the Staff discussed in the report:

The staff found that the event sequences important to risk at decommissioning plants are limited to large earthquakes and cask drops. For emergency planning (EP) assessments this is an important difference relative to operating plants *where typically a large number of different sequences make significant contributions to risk.*

NUREG-1738 at ix (emphasis added). Thus, in characterizing NUREG-1738 as “conservative” with respect to operating plants, the NRC completely ignores the fact that a range of severe reactor accidents may contribute to the potential for a pool fire. See also the attached report by Dr. Gordon R. Thompson entitled *Risks and Risk-Reducing Options Associated with Pool Storage of Spent Nuclear Fuel at the Pilgrim and Vermont Yankee Nuclear Power Plants* at 19 (May 25, 2006) (Attachment 3) (severe reactor accident could initiate or exacerbate a pool-fire scenario).⁴

- At page 4-156, the NRC states that analyses conducted and mitigative measures employed subsequent to NUREG-1738 (2001) have “lowered the risk” of spent fuel pool fires. But the NRC fails to mention that these analyses and mitigative

Request for a Hearing Regarding Diablo Canyon Environmental Assessment Supplement (June 28, 2007).

⁴ Dr. Thompson’s report and supporting declaration were submitted to the NRC by the Commonwealth of Massachusetts in May 2006 in support of its requests for hearings in the license renewal proceedings for the Pilgrim and Vermont Yankee nuclear power plants. The Commonwealth also submitted Dr. Thompson’s report in support of its August 25, 2006, petition for rulemaking regarding the environmental impacts of spent fuel pool storage.

measures were all *plant-specific*. NRC, Denial of Rulemaking Petition, 73 Fed. Reg. 46204, 46,208, 46,212 (Aug. 8, 2008) Therefore, under the specific terms of the NRC's regulations for implementation of NEPA in license renewal cases, the NRC may not include spent fuel pool fires in Category 1. See 10 C.F.R. Part 51, Appendix B, Table B-1, footnote 2 paragraph 3 (an impact may be classified as Category 1 only if "[m]itigative of adverse impacts associated with the issue has been considered in the analysis, and it has been determined that additional plant-specific mitigation measures are likely not to be sufficiently beneficial to warrant implementation.")

- The NRC also fails to acknowledge that the analyses and mitigative measures described above are discussed in classified and safeguards documents which must be provided to interested parties who satisfy the NRC's procedural requirements for safeguards access and/or security clearances. 42 U.S.C. § 2231 "[I]n the case of agency proceedings or actions which involve Restricted Data, defense information, safeguards information protected from disclosure under the authority of section 2167 of this title or information protected from dissemination under the authority of section 2168 of this title, the Commission shall provide by regulation for such parallel procedures as will effectively safeguard and prevent disclosure of Restricted Data, defense information, such safeguards information, or information protected from dissemination under the authority of section 2168 of this title to unauthorized persons with minimum impairment of the procedural rights which would be available if Restricted Data, defense information, such safeguards information, or information protected from dissemination under the authority of section 2168 of this title were not involved.") The NRC recently recognized this legal obligation in the hearing notice for the proposed issuance of a uranium enrichment license. Notice of Receipt of Application for License; Notice of Consideration of Issuance of License; Notice of Hearing and Commission Order and Order Imposing Procedures for Access to Sensitive Unclassified Non-Safeguards Information and Safeguards Information for Contention Preparation; In the Matter of Areva Enrichment Services, LLC (Eagle Rock Enrichment Facility, 74 Fed. Reg. 38,052 (July 30, 2009). Here, where the NRC relies heavily on classified and safeguards documents for its conclusion that the environmental impacts of spent fuel pool fires are insignificant, its failure to establish procedures for access by authorized parties to relevant information starkly violates Section 2231 of the Atomic Energy Act.

Table S-3 is Grossly Outdated and Inadequate to Support License Renewal Decisions.

In the License Renewal GEIS, the NRC proposes to continue to rely on a generic determination, codified in Table S-3, that the human health impacts of disposing of the radioactive waste generated by that plant are insignificant. Table S-3 is now over 30 years old, and has become grossly outdated. See attached *Comments of the Institute for Energy and Environmental Research (IEER) on the U.S. Nuclear Regulatory Commission's Proposed Waste Confidence Rule Update and Proposed Rule Regarding Environmental Impacts of Temporary Spent Fuel Storage* (February 6, 2009)

(Attachment 4). As discussed in IEER's comments, the findings of Table S-3 are severely outdated, and the table significantly underestimates the human health impacts of the uranium fuel cycle, including the impacts of disposing of spent fuel, greater than Class C waste, and low level radioactive waste.

For example, the assumptions on which Table S-3 depends include the assumption that spent fuel will be disposed of in a bedded salt repository. But in its Proposed Waste Confidence Decision, the NRC itself states that salt repositories are now considered suitable only for reprocessed high-level waste and not for spent fuel disposal. 73 Fed. Reg. 59,547, 59,555 (October 9, 2008). As discussed in IEER's Comments, all other repository types are now considered likely to have radioactive releases after the repository has been sealed. The hypothesis that releases from spent fuel disposal could be zero has therefore been discredited. Indeed, there are plausible circumstances in which releases could exceed the requirements of safe disposal as defined by radiation protection standards. In order to ensure that its licensing decisions for nuclear power plants comply with NEPA by fully addressing the environmental impacts of the radioactive waste they will generate, the NRC must completely overhaul Table S-3 and integrate it with a more comprehensive analysis of all of the environmental impacts and costs of the licensing of nuclear power plants, including the impacts and costs of the plants themselves and the wastes they will generate. See IEER Comments.

Table S-3 also erroneously concludes that it is conservative to assume gaseous releases of certain radionuclides, notably I-129, from reprocessing prior to sealing of a repository rather than to assume their release into water after disposal of spent fuel. See IEER Comments.

Finally, Table S-3 contains no discussion of the environmental impacts of the disposal of depleted uranium tails, which are potentially significant. See attached Institute for Energy and Environmental Research, *Comments on the Nuclear Regulatory Commission's Rulemaking Regarding the "Safe Disposal of Unique Waste Streams Including Significant Quantities of Depleted Uranium* (October 30, 2009).

The Scope of the GEIS Is Improperly Narrow

In a shell game of regulation, the NRC claims in Section 1.6 that some issues are adequately addressed elsewhere – by other agencies and/or proceedings - or dealt with on an ongoing basis. In its plan to review nuclear plants generically, the NRC has effectively excluded from its consideration environmental issues that have major impacts on public safety:

- Disposition of Spent Nuclear Fuel
- Emergency Preparedness
- Safeguards and Security

Additional excluded issues that would not stand up to scrutiny include:

- Changes to Plant Cooling Systems
- Need for Power

The NRC acknowledges unresolved problems, but excludes them from consideration in the GEIS. Examples include the following:

- Aging: "...operational safety issues and safety issues related to aging are considered outside the scope for the environmental review..." 1-8, lines 7,8)
- Security: "Security issues such as safeguards planning are not tied to a license renewal action..." (1-12, line 25)
- High-level waste storage: "The NRC is confident that there will eventually be a licensed high-level waste repository." (1-9, line 31)

The revised GEIS has neatly packaged the environmental issues by resource area, but there are numerous instances when these areas overlap; i.e. seismology and human health (as a result of an accident during an earthquake), waste management and human health (as a result of an accident involving high level waste storage), ecology, hydrology, and socioeconomics (the effects of damage to the marine environment on the local fishermen).

There are also limitations to the categories. What about a maintenance category? Where does the NRC look at maintenance history at each plant and analyze negative trends? The separation and restriction of environmental issues by resource area is arbitrary and ineffective.

SLOMFP objects to the elimination of critical issues in the determination of license renewal action and to the failure to acknowledge and assess the interactive and cumulative effects of overlapping issues.

Waste Management and Pollution Prevention Discussion is Inadequate

In Section 4.11, waste management is improperly labeled a Category 1 issue; SLOMFP insists that it is a large impact site-specific Category 2 issue.

Like all U.S. nuclear power plants, the Diablo Canyon facility includes the storage of all the high-level radioactive wastes generated by its reactors since it began operation. Currently, most of the spent fuel is stored in over-crowded pools. A small portion has been transferred to a few of the dry casks. To add another 20 years' worth of high level wastes at a seismically active site would significantly add to the safety and security problems at Diablo.

Furthermore, the Draft GEIS continues to promote the myth that Yucca Mountain will be available to accept high level waste from nuclear facilities. (4-166, lines 4-10) 4-167 in the GEIS provides a litany of totally unjustified "reasonable assurance" that spent fuel can be safely stored on-site until the DOE provides a long-term waste storage facility. These assurances amount to wishful thinking and nothing more. Optimistic assumptions are not an acceptable basis for allowing the continued generation of high-level wastes that will need to be stored in isolation from the biosphere for many thousands of years.

No known human civilization has remained intact for even a fraction of the length of time radioactive wastes will remain toxic. A more realistic assumption is that there is no way to assure adequate safeguarding of nuclear wastes.

Cumulative Impacts Must be Addressed

SLOMFP agrees with the License Renewal GEIS Section 4.13 that the issue of cumulative impacts is a vital one, classified as Category 2, and it must be examined in and across all resource areas. SLOMFP is particularly concerned with the consequences of cumulative impacts on the degraded marine environment, human health, and waste management.

Unavoidable Adverse Impacts Should Not Be Accepted

In Section 14.14.1, Unavoidable Adverse Impacts are specified and simply accepted. The Draft GEIS reasons that if an adverse impact can't be dealt with, the conclusion is that it is to be accepted. SLOMFP reasons that since there are so many generic unavoidable adverse impacts, license renewals should automatically be ruled out as too hazardous to the environment and the public to be acceptable.

Earthquake Risks Should be Category 2

It is contrary to current NRC regulations to license a nuclear facility next to an active, major earthquake fault. The NRC “grandfathered” the license for Diablo Canyon Nuclear Power Plant, buying into PG&E’s excuse that it was unaware of the Hosgri Fault when it first invested billions of ratepayer dollars to building the plant, beginning in the late 1960’s. The Hosgri Fault comes within 3.5 miles of the plant. The NRC is prohibited by its own regulations from taking into account corporate profits rather than public safety, but that is exactly what it did.

The Draft GEIS gives little attention given to seismology in the Draft GEIS except to reassure the public that the two California plants “have been designed to safely withstand the seismic effects associated with earthquakes...” (3-50, lines 23,24)

The newly-discovered Shoreline Fault, less than one mile offshore of the Diablo site, has not been thoroughly studied yet, but it clearly exacerbates an already precarious situation. Clearly, in the case of Diablo Canyon – and perhaps other plants – the impact of previously unknown seismological conditions has the potential to be quite large, and the issue should be placed in Category 2. The NRC implicitly acknowledges that it is not able to analyze earthquake risks generically in Appendix E, where it states that earthquake risks for the Diablo Canyon and San Onofre nuclear power plants were excluded from consideration of the risks of a spent fuel pool fire. Page E-33.

Aquatic Ecology Impacts Are Important and Should be Addressed

Degradation of the marine environment due to impingement and entrainment of aquatic organisms, and to thermal changes, have been long-standing problems in the waters in Diablo Cove. These waters are also prime fishing habitat, and the industry is an important one in the area.

Pacific Gas & Electric Company has been cited by the California Regional Water Quality Control Board for violations to its water permit, and the Company has been forced to take mitigation measures. SLOMFP is concerned about the cumulative impacts on the marine environment of continued operation of Diablo Canyon Nuclear Plant. It is in agreement with the Draft GEIS that Aquatic Resources and the effects of thermal discharges for once-through cooling systems are potentially large impacts that require plant-specific, Category 2 analysis.

Environmental Impacts of Attacks Should be Considered

All nuclear facilities have been identified as targets of terrorists by the NRC, as well as Homeland Security and other federal agencies. Yet this issue is excluded from consideration in the GEIS.

Furthermore, the obvious fact that a failure of security – i.e. a successful terrorist attack – has the potential for catastrophic consequences for the environment and human health is ignored.

SLOMFP is currently pursuing a legal challenge of the NRC in the Ninth Circuit of the U.S. Court of Appeals. The NRC violated both NEPA and a June, 2006 ruling by the Ninth Circuit Court in favor of SLOMFP when the regulators excluded from consideration credible attack scenarios on the dry casks at Diablo Canyon that could have devastating environmental impacts. Under NEPA, environmental impacts that are “reasonably foreseeable” and have “catastrophic consequences, even if their probability of occurrence is low” must be taken into account. The GEIS does not take into account the principles of this ruling by the second-highest court in the nation.

SLOMFP demands the NRC include acts of sabotage or terrorism in its Draft GEIS as Category 2, a large impact with site-specific needs and requirements.