



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105-3901

AUG 31 2015

U.S. Nuclear Regulatory Commission  
Attn: Cindy Bladey  
Office of Administration, Mail Stop: OWFN-12 H08-  
Washington, DC 20555-0001

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RULES AND DIRECTIVES  
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Subject: Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Operating License Renewal for Diablo Canyon Power Plant Units 1 and 2, San Luis Obispo County, California

Dear Ms. Bladey:

The U.S. Environmental Protection Agency has reviewed the July 1, 2015 Notice of Intent to prepare an Environmental Impact Statement for the proposed operating license renewal for Diablo Canyon Power Plant Units 1 and 2, located in San Luis Obispo County, California. Our comments are provided pursuant to the National Environmental Policy Act, Council on Environmental Quality Regulations (40 CFR Parts 1500-1508) and § 309 of the Clean Air Act.

To assist in the scoping process for this project, we have identified several issues for your attention in the preparation of the EIS. These issues include: power plant cooling water, seismicity and spent nuclear fuel storage.

We appreciate the opportunity to review this project and are available to discuss our comments. Please send one hard copy of the Draft EIS and one CD ROM copy to the address above (mail code: ENF-4-2). If you have any questions, please contact me at (415) 972-3238, or contact Scott Sysum, the lead reviewer for this project. Scott can be reached at (415) 972-3742 or sysum.scott@epa.gov.

Sincerely,

Ann McPherson  
Environmental Review Section

7/1/2015  
80 FR 37664

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Enclosures: EPA's Detailed Comments

SUNSI Review Complete  
Template = ADM - 013  
E-RIDS= ADM-03

Add= M. Wentzel (MSW2)

**US EPA DETAILED COMMENTS ON THE NOTICE OF INTENT TO PREPARE AN ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED OPERATING LICENSE RENEWAL FOR DIABLO CANYON POWER PLANT UNITS 1 AND 2, SAN LUIS OBISPO COUNTY, CALIFORNIA, AUGUST 31, 2015**

**Power Plant Cooling Water**

The State Water Resources Control Board adopted a policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling in 2010. The policy establishes technology-based standards to implement federal Clean Water Act Section 316(b) and reduce the harmful effects associated with cooling water intake structures on marine and estuarine life. The SWRCB's Once-Through Cooling (OTC) Water policy calls for the elimination of OTC for the Diablo Canyon Power Plant by 2024 and 2025 for Units 1 and 2, respectively, when their current licenses expire. According to a report<sup>1</sup> prepared by Bechtel for Pacific Gas and Electric and the SWRCB's Nuclear Review Committee, construction costs for closed-cycle systems could range as high as \$6 billion to \$12 billion and may require extensive excavation at the Diablo Canyon site. Additionally, a Diablo Canyon Independent Safety Committee's Evaluation of the Bechtel report<sup>2</sup> concluded that the various closed-cycle cooling options would involve very extensive modifications to the plant that have the potential to affect the operability of safety-related systems. Furthermore, a license amendment would probably be required.

*Recommendation:*

Discuss, in the Draft Environmental Impact Statement, the SWRCB's OTC policy, applicability, projected costs for compliance, and potential environmental impacts associated with the implementation of this policy.

**Seismic Multi-fault Ruptures**

Past models have generally assumed that earthquakes are either confined to separate faults, or that long faults like the San Andreas can be divided into different segments that only rupture separately. Many recent earthquakes, however, have struck beyond previously inferred fault-rupture boundaries.<sup>3</sup> For example, the three most recent, largest earthquakes<sup>4</sup> in California extended past such boundaries, jumping from one fault to another, as multi-fault ruptures. In addition, the 2011 magnitude 9.0 Tohoku, Japan earthquake also violated previously defined fault-segment boundaries, resulting in a much larger fault-rupture area and greater magnitude than expected, which contributed to the deadly tsunami and Fukushima nuclear disaster.

It has become increasingly evident that we are not dealing with a few well-separated faults, but with a vast, interconnected fault system. In fact, it has become more difficult to identify where some faults end and others begin, implying many more opportunities for multi-fault ruptures.

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<sup>1</sup> Independent Third-Party Final Technologies Assessment for the Alternative Cooling Technologies or Modifications to the Existing Once-Through Cooling System for Diablo Canyon Power Plant (Draft) Report No. 25762-000-30R-G01G-00010; Bechtel Power Corporation Issued September 20, 2013,

<sup>2</sup> Diablo Canyon Independent Safety Committee's Evaluation of Safety Issues for "Independent Third Party Final Technologies Assessment for the Alternative Cooling Technologies or Modifications to the Existing Once-Through Cooling System for the Diablo Canyon Power Plant," September 2013, <http://www.dcisc.org/draft-once-through-cooling-2013.php>.

<sup>3</sup> UCERF3: A New Earthquake Forecast for California's Complex Fault System. USGS Fact Sheet 2015-3009

<sup>4</sup> 1992 magnitude 7.3 Landers earthquake, the 1999 magnitude 7.2 Hector Mine earthquake, and the 2010 magnitude 7.2 El Mayor-Cucapah earthquake.

At Diablo Canyon, the affected environment includes numerous earthquake faults. Recent history suggests that a multi-fault rupture is a reasonably foreseeable event. Any impacts that would result either from the facility being subjected to a multi-fault rupture, or from any actions that would need to be taken to protect the facility from damage during such a rupture, are reasonably foreseeable and should be disclosed in the DEIS as potential indirect impacts.

*Recommendations:*

Discuss, in the DEIS, whether or not the potential for a multi-fault rupture has been evaluated. If not, discuss the potential for multi-fault ruptures on the San Andreas, Hosgri and Shoreline faults.

Discuss, in the DEIS, the potential for tsunami impacts, both during the operating time frame as well as post-operation, when spent fuel may be stored in spent fuel pools and/or dry cask storage. Describe and review the tsunami design basis for the DCP.

### Spent Fuel Pools

The 2013 Integrated Energy Policy Report,<sup>5</sup> produced by the California Energy Commission, stated that there were reports from Diablo Canyon personnel that the spent fuel pool has had a persistent minor leak for many years. PG&E concluded that, based on evaluation of industry experience on spent fuel pool leakage, the amount of leakage being experienced was acceptable, as there is a negligible adverse effect on the concrete and reinforcing steel. The 2013 IEPR recommended that PG&E evaluate the potential long-term impacts and projected costs of spent fuel storage in pools versus dry cask storage, and the potential degradation of fuels and package integrity during long-term wet and dry storage and transportation offsite, and submit the findings to the CEC and California Public Utilities Commission. The CEC also recommended that the CPUC require expedited transfer of spent fuel assemblies from wet pools to dry cask storage.

Spent fuel pools at most operating reactors are storing the spent fuel at much higher densities than originally designed. Spent fuel pool cooling water has to be actively managed and could be compromised through loss of power or intentional acts of sabotage. Dry cask storage is a passive system of cooling and separates the spent fuel into multiple casks, which are less susceptible to intentional damage.

*Recommendations:*

Include, in the DEIS, a summary and evaluation of PG&E's findings regarding the potential long-term impacts and projected costs of spent fuel storage in pools versus dry cask storage. Incorporate PG&E's findings by reference or include them in an appendix to the DEIS,

Discuss, in the DEIS, the feasibility and environmental impacts of expediting the transfer of spent fuel assemblies from wet pools to dry cask storage.

### Climate Change

The EPA believes the Council on Environmental Quality's December 2014 revised draft guidance for Federal agencies' consideration of GHG emissions and climate change impacts in NEPA outlines a

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<sup>5</sup> California Energy Commission. 2013. 2013 Integrated Energy Policy Report. Publication Number: CEC-100-2013-001-CMF.

reasonable approach, and we recommend that the Nuclear Regulatory Commission use that draft guidance to help outline the framework for its analysis of these issues. The DEIS should contain an estimate of the GHG emissions associated with the proposal and its alternatives. Example tools for estimating and quantifying GHG emissions can be found on CEQ's NEPA.gov website.<sup>6</sup> In most cases quantification of GHG emissions involves a relatively straightforward calculation

The DEIS should provide a summary discussion of climate change and ongoing and reasonably foreseeable climate change impacts relevant to the project, based on U.S. Global Change Research Program<sup>7</sup> assessments, to assist with identification of potential project impacts that may be exacerbated by climate change and to inform consideration of measures to adapt to climate change impacts

*Recommendation:*

Consider, in the DEIS, how climate change could potentially influence the continued operation of the DCP. Evaluate the potential impacts of sea level rise or other anticipated climate change related impacts.

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<sup>6</sup> [https://ceq.doe.gov/current\\_developments/GHG\\_accounting\\_methods\\_7Jan2015.html](https://ceq.doe.gov/current_developments/GHG_accounting_methods_7Jan2015.html)

<sup>7</sup> <http://www.globalchange.gov/>