

U.S. NUCLEAR REGULATORY COMMISSION  
DOCKET NO. 72-26  
PACIFIC GAS AND ELECTRIC COMPANY  
NOTICE OF ISSUANCE OF ENVIRONMENTAL ASSESSMENT  
AND  
FINDING OF NO SIGNIFICANT IMPACT  
FOR THE DIABLO CANYON  
INDEPENDENT SPENT FUEL STORAGE INSTALLATION

The U.S. Nuclear Regulatory Commission (NRC or the Commission) is considering issuance of a materials license under the requirements of Title 10 of the Code of Federal Regulations, Part 72 (10 CFR Part 72), to the Pacific Gas and Electric Company (the applicant), authorizing the construction and operation of an independent spent fuel storage installation (ISFSI) to be located at the Diablo Canyon Power Plant (DCPP) in San Luis Obispo County, California. The Commission's Office of Nuclear Material Safety and Safeguards has completed its review of the environmental report submitted by the applicant on December 21, 2001, as amended by letter dated October 15, 2002, in support of its application for a materials license. The staff's "Environmental Assessment Related to the Construction and Operation of the Diablo Canyon Independent Spent Fuel Storage Installation" has been issued in accordance with 10 CFR Part 51.

#### SUMMARY OF ENVIRONMENTAL ASSESSMENT (EA)

Description of the Proposed Action: The proposed licensing action would authorize the applicant to construct and operate a dry storage ISFSI at the DCPP site. The purpose of the ISFSI is to provide for additional interim storage of spent nuclear fuel generated from the operation of the Diablo Canyon Power Plant, Units 1 and 2. The proposed ISFSI would employ the HI-STORM 100 dry cask storage system designed by Holtec International, Inc. The major components of the system include the steel multipurpose canisters (MPCs), each containing 24 or 32 spent fuel assemblies; the concrete overpacks, which provide additional shielding for the MPCs in storage; and the transfer cask, used to move loaded and sealed MPCs from the fuel handling building to the ISFSI. A license issued for an ISFSI under 10 CFR Part 72 is issued for a fixed period not to exceed 20 years. A license holder may apply to the Commission to renew the license prior to its expiration.

Need for the Proposed Action: The Diablo Canyon ISFSI is needed to provide additional spent fuel storage capacity so that the two DCPD reactors can continue to generate electricity beyond 2006, when the storage capacity of the plant's two spent fuel pools will be reached. A delay in the availability of this additional storage capacity may cause a reduction in power operation, or could necessitate the shutdown of Units 1 and 2. By providing additional capacity for temporary spent fuel storage with the proposed ISFSI, sufficient space can be maintained in each unit's spent fuel pool to fully off-load its reactor core, if necessary, enabling the applicant to continue to operate both units until the current operating licenses expire (September 2021 for Unit 1 and April 2025 for Unit 2).

Environmental Impacts of the Proposed Action: The NRC staff has concluded that the construction, operation, and decommissioning of the Diablo Canyon ISFSI will not result in a significant impact to the environment. Construction impacts of the ISFSI will be minor, and limited to the small area of the ISFSI site and the excavated material disposal sites. The site chosen for the ISFSI, on approximately 5 acres of the 760 acre DCPD site, has been previously disturbed during plant construction, as have the disposal sites for the excavated material. The proposed ISFSI site and the disposal areas have been extensively surveyed and no federal or state listed threatened or endangered species have been found in those areas. Thus, the staff does not expect the proposed ISFSI to impact any threatened or endangered species. There will be minor impacts of increased noise and dust from construction equipment and activities during the construction phase, but this phase will be of short duration and will not impact off-site populations. The proposed ISFSI site is near a site which is included in the National Register of Historic Places, CA-SLO-2, but construction of the ISFSI will not cause any adverse impacts to that site, due to the natural features and to the administrative controls employed by the applicant.

There will be no significant radiological or non-radiological environmental impacts from routine operation of the ISFSI. The ISFSI is a passive facility and no liquid or gaseous effluents will be released from the storage casks. The dose rates from the spent fuel will be limited by the design of the storage cask concrete overpacks. The total occupational dose to workers at the DCPD site may increase slightly due to work associated with loading, transferring, and storing the casks, but all occupational doses must be maintained below the limits specified in

10 CFR Part 20. The annual dose to the nearest resident from ISFSI activities is estimated to be 0.40 mrem/year, which is significantly below the annual dose limits specified in 10 CFR 72.104 and 10 CFR 20.1301(a) (25 mrem and 100 mrem, respectively). The cumulative dose to an individual offsite from all site activities will be 0.45 mrem/year, which is also much less than the limits specified in 10 CFR 72.104 and 10 CFR 20.1301. These doses are also a small fraction of the doses resulting from naturally-occurring terrestrial and cosmic radiation of about 100 mrem/yr in the vicinity of the DCP. Additionally, occupational doses received by facility workers will not exceed the limits specified in 10 CFR 20.1201. For hypothetical accidents, the calculated dose to an individual at the nearest site boundary is well below the 5 rem limit for accidents set forth in 10 CFR 72.106(b) and in the U.S. Environmental Protection Agency's protective action guidelines.

The impacts from decommissioning the ISFSI will be much less than the minor impacts of construction and operation. Very small occupational exposures could occur during decontamination activities, if they are necessary, and minor noise and dust impacts could result from dismantling the pad and structures.

Alternatives to the Proposed Action: The applicant's Environmental Report and the staff's EA discussed several alternatives to the proposed ISFSI. These alternatives included shipment of spent fuel off site, and other methods to increase on-site spent fuel storage capacity, as well as the no action alternative. In the first category, the alternatives of shipping spent fuel from Diablo Canyon to a permanent Federal Repository, to a reprocessing facility, or to a privately owned spent fuel storage facility were determined to be non-viable alternatives, as no such facilities are currently available in the United States, and shipping the spent fuel overseas is impractical in light of the political, legal, and logistical uncertainties and the high cost. Shipping the DCP spent fuel to another nuclear power plant was also determined to be a non-viable alternative, because the receiving utility would have to be licensed to store the DCP spent fuel, and it is unlikely that another utility would be willing to accept it, in light of their own limitations on spent fuel storage capacity.

Other on-site storage alternatives considered by the applicant included increasing the capacity of the existing spent fuel pools by re-racking or spent fuel rod consolidation, or construction of a new spent fuel storage pool. The applicant has previously amended the

DCPP licenses to permit re-racking, and although further re-racking is possible, it could require extensive modifications to the spent fuel pools and supporting systems, and would not accommodate all of the spent fuel to be generated for the duration of the plant's current operating licenses. Spent fuel rod consolidation is also possible, but would require replacement of the existing storage racks to support the greater weight of the consolidated assemblies, and would require extensive operational resources to reconfigure all the fuel assemblies currently in storage. This alternative was also considered impractical, due to the high cost and the significant occupational exposure to be incurred. Similarly, although the applicant could construct an additional spent fuel pool, the high cost associated with constructing and maintaining such a facility and all of the necessary support equipment, coupled with the significant occupational exposures resulting from the extensive fuel handling operations, make this alternative impractical.

The no action alternative could result in the extended or permanent shutdown of both DCPP units many years before the expiration of their current operating licenses, once the current capacity of the units' spent fuel pools is reached. The electrical generation capacity lost would likely be replaced by fossil-fueled plants, which could result in greater environmental impacts and higher costs for electricity. In the short-term, the shutdown of the DCPP would have a negative impact on the local economy and infrastructure. For these reasons, the no action alternative is not considered a practical alternative.

As discussed in the EA, the Commission has concluded there are no significant environmental impacts associated with the proposed Diablo Canyon ISFSI, and other alternatives were not pursued because of significantly higher costs, additional occupational exposures, and the unavailability of offsite storage options.

Agencies and Persons Contacted: Officials from the California Energy Commission (CEC), the California Office of Historic Preservation and the U.S. Fish and Wildlife Service were contacted in preparing the staff's environmental assessment. The CEC provided comments by letter dated August 12, 2003; these comments have been addressed in the EA.

## FINDING OF NO SIGNIFICANT IMPACT

The staff has reviewed the environmental impacts of the proposed ISFSI relative to the requirements set forth in 10 CFR Part 51, and has prepared an Environmental Assessment. Based on the EA, the staff concludes that there are no significant radiological or non-radiological impacts associated with the proposed action and that issuance of a license for the interim storage of spent nuclear fuel at the Diablo Canyon ISFSI will have no significant impact on the quality of the human environment. Therefore, pursuant to 10 CFR 51.31 and 51.32, a finding of no significant impact is appropriate and an environmental impact statement need not be prepared for the issuance of a materials license for the Diablo Canyon ISFSI.

Further details related to this proposed action are provided in the license application, dated December 21, 2001, as amended October 15, 2002, and the staff's EA, dated October 24, 2003. These documents and others related to this proposed action are available for public inspection and copying at the Commission's Public Document Room, One White Flint North Building, 11555 Rockville Pike, Rockville, Maryland, or from the publicly available records component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC web site at: <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room). Persons who do not have access to ADAMS, or who encounter problems in accessing the documents located in ADAMS, should contact the NRC PDR Reference staff by telephone at 1-800-397-4209, 301-415-4737, or by email to [pdr@nrc.gov](mailto:pdr@nrc.gov).

Dated at Rockville, Maryland, this 24th day of October 2003.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/

James R. Hall, Senior Project Manager  
Spent Fuel Project Office  
Office of Nuclear Material Safety  
and Safeguards

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James R. Hall, Senior Project Manager  
Spent Fuel Project Office  
Office of Nuclear Material Safety  
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\*see previous concurrence

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