[7590-01-P]

U.S. NUCLEAR REGULATORY COMMISSION

[Docket No. 72-27]

Notice of Availability of Environmental Assessment and Finding of No Significant Impact for Construction and Operation of the Humboldt Bay Independent Spent Fuel Storage Installation

AGENCY: U.S. Nuclear Regulatory Commission (NRC)

ACTION: Notice of Availability and Finding of No Significant Impact

FOR FURTHER INFORMATION CONTACT: James Park, Environmental and Performance Assessment Directorate, Division of Waste Management and Environmental Protection, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555. Telephone: (301) 415-5835; Fax number: (301) 415-5397; Email: jrp@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Introduction

By letter dated December 15, 2003, Pacific Gas and Electric Company (PG&E) submitted an application to the U.S. Nuclear Regulatory Commission (NRC), requesting a site-specific license to build and operate an Independent Spent Fuel Storage Installation (ISFSI), to be located on the site of the Humboldt Bay Power Plant (HBPP), in Humboldt County, California.

A holder of an NRC license for a power reactor under 10 CFR Part 50 can construct and operate an ISFSI at that power reactor site under the general license provisions of 10 CFR Part 72, or may apply for a separate site-specific license. PG&E has applied for a site-specific license for the proposed Humboldt Bay ISFSI in accordance with the applicable regulations in 10 CFR Part 72.

Attachment

The NRC staff has prepared an Environmental Assessment (EA) in support of its review of PG&E's application in accordance with the requirements of 10 CFR Part 51. Based on the EA, the NRC has concluded that a Finding of No Significant Impact (FONSI) is appropriate.

II. EA Summary

Background

The HBPP consists of five electric generation units. Unit 3, a boiling water reactor, operated for approximately 13 years before being shutdown for a refueling in July 1976. It has remained inactive since that time. In 1988, the NRC approved the SAFSTOR plan for Unit 3 and amended the plant's license under 10 CFR Part 50 to a "possession only" license that expires on November 9, 2015. (SAFSTOR is a method of decommissioning in which the nuclear facility is placed and maintained in such condition that the nuclear facility can be safely stored and subsequently decontaminated (deferred decontamination) to levels that permit release for unrestricted use.) PG&E currently stores spent fuel from previous HBPP operations in the Unit 3 spent fuel pool.

Review Scope

The NRC staff reviewed PG&E's request in accordance with the requirements under 10 CFR Part 72 for ISFSIs and under the environmental protection regulations in 10 CFR Part 51. The EA provides the results of the NRC staff's environmental review; the staff's radiation safety review is documented separately in a Safety Evaluation Report.

The NRC staff prepared the EA in accordance with NRC requirements in 10 CFR 51.21 and 51.30, and with the associated guidance in NRC report NUREG-1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs."

The NRC staff's review did not address either the decommissioning of Unit 3 following transfer of the spent fuel to the ISFSI, nor the transportation of the fuel offsite to a permanent federal repository.

Proposed Action

The proposed action is for PG&E to construct, operate, and decommission an ISFSI at the HBPP site. The ISFSI would provide temporary dry storage capacity for the spent nuclear fuel that PG&E currently stores in the HBPP spent fuel pool, located in the shut-down Unit 3. The proposed ISFSI is intended as an interim facility consisting of an in-ground concrete structure with storage capacity for six shielded casks. Five casks would contain spent nuclear fuel and one would contain Greater-than-Class C (GTCC) waste. (GTCC waste is low-level radioactive waste generated by the commercial sector that exceeds NRC concentration limits for Class C low-level waste, as specified in 10 CFR 61.55). All such spent fuel and GTCC waste to be placed in the casks was generated from prior HBPP operations. The spent fuel would be stored in the ISFSI until the U.S. Department of Energy (DOE) takes possession and transports the spent fuel offsite to a federal repository, or until PG&E elects to transfer the spent fuel to another acceptable offsite interim storage facility, if one becomes available.

Need for the Proposed Action

Removal of the spent fuel from the HBPP Unit 3 spent fuel pool to the proposed ISFSI would permit the dismantling of the existing radioactive reactor structures, thereby providing for earlier decommissioning of the HBPP Unit 3 facility. This would allow earlier termination of the SAFSTOR license and restoration of most areas on site to unrestricted use.

Transfer of the fuel to dry storage in an ISFSI also would result in lowered operational costs for PG&E. In contrast with the currently-used wet storage method (*i.e.*, storage in the spent fuel pool), dry storage in an ISFSI is a passive storage process that does not require extensive operating equipment or personnel to maintain. The dry storage process would

reduce both the amount of effluents generated by the existing SAFSTOR operation and the amount of solid radioactive wastes generated.

Alternatives to the Proposed Action

No Action Alternative:

Under the “no action” alternative, PG&E would continue to store the spent fuel from prior operations at the HBPP in the spent fuel pool in Unit 3. PG&E would continue to conduct approved and appropriate maintenance and monitoring. Unit 3 would remain under the SAFSTOR license.

Other Alternatives:

The NRC staff also evalutated other alternatives to the proposed action. First, PG&E could construct a new storage pool and support facilities separate from the existing HBPP Unit 3, which would allow PG&E to decommission the Unit 3 facility. However, this alternative would increase the number of times a fuel assembly was handled and, consequently, the potential occupational exposure to the workers. The additional maintenance and surveillance activities to support operation of the new pool would also result in higher worker exposures. This alternative also has a high cost, due to construction of the new pool and facilities, and for the dry transfer system needed to transfer the fuel. For these reasons, building a new fuel pool was not considered a viable alternative and was eliminated from further detailed study.

A second alternative would be to transport the spent fuel offsite, either (1) to store at another nuclear power plant with sufficient capacity; (2) to store at a permanent federal or privately-owned repository; or (3) to reprocess overseas. None of these offsite options was deemed viable at this time. Storage at another power plant would require a receiving utility to be licensed to accept the HBPP spent nuclear fuel and willing to accept the fuel. Because most nuclear power plant operators are expected to face their own limitations on spent fuel storage capacity, PG&E felt it unlikely that other operators would be willing to accept spent fuel owned

by another company. Secondly, with respect to storage at a repository, neither a permanent federal repository nor a privately-owned facility are currently available in the United States. Finally, although reprocessing facilities exist in other countries, the political, legal, and logistical uncertainties and the high cost of shipping spent fuel overseas make this alternative not viable.

The NRC staff also evaluated PG&E's analysis of alternate locations on the HBPP site for the proposed ISFSI and PG&E's selection of an in-ground vault design versus a surface pad design for the proposed ISFSI. The NRC staff determined that PG&E's selections of a final proposed location and design for the proposed ISFSI were acceptable.

Environmental Impacts

No-Action Alternative:

Under this alternative, PG&E would not be permitted to completely dismantle the existing HBPP Unit 3 radioactive reactor structures, and therefore would not be able to decommission the Unit 3 facility to allow unrestricted use, and thus could not terminate the SAFSTOR license. PG&E would continue to incur the costs and impacts associated with maintaining and monitoring the spent fuel pool, the management of solid radioactive wastes, and the monitoring of effluents generated by the existing SAFSTOR operation.

Proposed Action:

The environmental impacts due to construction of the HBPP ISFSI are expected to be small. The ISFSI would be located within the boundaries of the 143-acre PG&E-controlled site area, and constructed in an area previously disturbed during HBPP operations. Construction activities associated with the proposed ISFSI would impact less than one acre of land area. This impact would involve excavating the vault area, disposing the excavated spoils, forming and pouring of the vault structure, widening and extending the oil supply road, constructing security structures, and controlling dust and runoff. Dust generated during construction is expected to be minimal given that the construction traffic would be using paved onsite and

offsite roadways. Gaseous emissions from construction equipment would be mitigated through regular maintenance of the equipment.

Excavated material disposed at the onsite spoils area would be contoured to the existing slope. As appropriate, PG&E would use best management practices to address storm water runoff, erosion control, and revegetation. All areas disturbed during construction activities would be revegetated with an appropriate seed mix.

ISFSI construction activities are not expected to impact any state or federally listed threatened or endangered plant, terrestrial wildlife, marine life, or fish species. Construction would not impact historical or cultural resources in the region around or at the HBPP site.

The storage of spent fuel in casks at the ISFSI is expected to result in small radiation doses to the offsite population. The closest point that a member of the public may access (*i.e.,* via the public trail) is 16.2 m (53 ft) from the ISFSI, and the nearest resident is approximately 244 m (800 ft) away. In its environmental report, PG&E provided the results of conservative calculations of offsite dose (PG&E, 2003a). These calculations assumed contributions to the total dose due to direct radiation from the spent fuel in the storage casks, as well as contributions from the spent fuel in the MPCs during their transfer to the storage overpacks and from the casks as they are transported to and loaded into the ISFSI. The MPCs would be seal-welded and therefore are considered leak tight, so that no leakage is expected during normal operation, off-normal conditions, or design basis accidents. The analysis also assumed that access to the public trail would be controlled to keep members of the public more than 100 meters (328 ft) away while the spent fuel casks are transported to and loaded into the ISFSI.

Assuming a continuous occupancy time (*i.e.,* 8760 hours per year), the calculated annual dose to the nearest resident from ISFSI activities is 0.0631 mSv (6.31 mrem), which is significantly below the annual limits specified in 10 CFR 72.104(a) and 10 CFR 20.1301(a), of 0.25 mSv (25 mrem) and 1 mSv (100 mrem), respectively. The cumulative offsite dose to the

nearest resident from all site activities is calculated to be about 0.0641 mSv/year (6.41 mrem/year), which is also significantly less than the limit referenced in 10 CFR 20.1301. Assuming an occupancy time of 2080 hours per year (based on a 40-hour week and 52 weeks per year, although the public trail is only occasionally used), PG&E calculated an annual dose at the point of closest access of approximately 0.21 mSv (21 mrem). Following transfer of the six casks to the ISFSI, the annual offsite dose will be limited primarily to direct radiation, thus reducing the calculated doses at the point of closest access and to the nearest resident to approximately 0.17 mSv/yr (17 mrem/yr) and 0.045 mSv/yr (4.5 mrem/yr) respectively. Given the assumptions in the calculations, actual doses are expected to be less than these values.

Conclusion

The NRC staff reviewed the environmental impacts of the proposed action in accordance with the requirements of 10 CFR Part 51. The NRC staff has determined that the storage of spent nuclear fuel in an in-ground ISFSI at the Humboldt Bay Power Plant would not significantly affect the quality of the human environment. Therefore, an environmental impact statement is not warranted for the proposed action, and pursuant to 10 CFR 51.31, a Finding of No Significant Impact (FONSI) is appropriate.

Agencies and Persons Consulted

The NRC staff consulted with several other agencies regarding the proposed action. These consultations were intended to afford the designated State Liaison agency the opportunity to comment on the proposed action, and to ensure that the requirements of Section 106 of the National Historic Preservation Act (NHPA) and Section 7 of the Endangered Species Act (ESA) were met with respect to the proposed action.

By letter dated July 15, 2005, the NRC staff provided a pre-decisional draft EA for review and comment to the California Energy Commission (CEC), which is the designated State liaison agency. The CEC provided its comments in a telephone call in August 2005, stating its

desire to see an expanded discussion of seismic and tsunami hazards in the EA. The NRC staff revised the discussion of seismic and tsunami hazards in response to the CEC's comments. On behalf of the CEC, Ms. Byron provided additional editorial comments by electronic mail on September 30, 2005, and in that same electronic mail message, raised the issue of potential terrorist attacks. The Commission previously has ruled that that analysis of the possibility of a terrorist attack is "speculative and simply too far removed from the natural or expected consequences of agency action to require a study under [the National Environmental Policy Act]" (Commission Memorandum and Order CLI-02-25. "In the Matter of Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation)." December 18, 2002).

With respect to the requirements of Section 7 of the ESA, the NRC staff consulted with the U.S. Fish and Wildlife Service, Arcata Fish and Wildlife Office (USFWS/AFWO), and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries). As a result of this consultation, by letters dated July 29, 2005, the NRC staff separately notified the USFWS/AFWO and NOAA Fisheries of its determination that the proposed action would have no effect on an endangered or threatened species or on critical habitat within the area of influence for the proposed action and provided an assessment in support of this determination.

Pursuant to the requirements of Section 106 of the NHPA, the NRC staff consulted with the California Office of Historic Preservation, the Calfornia Native American Heritage Commission, and three Federally-recognized Indian Tribes: the Wiyot Tribe, the Bear River Band of Rohnerville Rancheria, and the Blue Lake Rancheria. As a result of this consultation and its own evaluation, the NRC staff determined that no historic or cultural resources would be adversely affected by the proposed action. The California Office of Historic Preservation concurred in this determination by letter dated October 25, 2005.

III. Finding of No Significant Impact

On the basis of the EA, the NRC has concluded that there are no significant environmental impacts from the proposed action of constructing and operating the Humboldt Bay ISFSI and has determined not to prepare an environmental impact statement.

IV. Further Information

Documents related to this action, including the application for amendment and supporting documentation, are available electronically at the NRC's Electronic Reading Room at <http://www.NRC.gov/reading-rm/adams.html>. From this site, you can access the NRC's Agencywide Document Access and Management System (ADAMS), which provides text and image files of NRC's public documents. The ADAMS accession numbers for the documents related to this notice are:

Document Date	Description	ADAMS Accession No.
10/30/2005	NRC staff's EA for the proposed ISFSI	ML052430106
12/15/2003	PG&E's transmittal letter	ML033640441
12/15/2003	PG&E's Environmental Report	ML033640453 ML033640677
7/15/2005	NRC staff letter transmitting the pre-decisional draft EA to the CEC	ML051780043
7/29/2005	NRC staff's transmittal of determination of no effect to USFWS/AFWO	ML052030228
7/29/2005	NRC staff's transmittal of determination of no effect to NOAA Fisheries	ML051380126
10/25/2005	SHPO concurrence on NRC staff determination of no adverse affect	ML053040051

If you do not have access to ADAMS or if there are problems in accessing the documents located in ADAMS, contact the NRC's Public Document Room (PDR) Reference staff at 1-800-397-4209, 301-415-4737, or by email to pdr@nrc.gov.

These documents may also be viewed electronically on the public computers located at the NRC's PDR, O 1 F21, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852. The PDR reproduction contractor will copy documents for a fee.

Dated at Rockville, Maryland this 4th day of November 2005.

FOR THE NUCLEAR REGULATORY COMMISSION

R/A

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Division of Waste Management
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