

# ORIGINAL

JAS 9/7/05

## NMED LER INPUT

LER: 50-133/2004-001

Event Report #	40961	NMED (if issued)	040585
PN # (if issued)	IV-04-017A	Date NRC Notified	July 16, 2004
Licensee	Pacific Gas and Electric, Co.	Abnormal occurrence?	No
License #	DPR-7	Docket #	50-133
Address	1000 King Salmon Ave.	City, State	Eureka, CA 95503
Nuclides	Mixed Fission Products	Personnel Exposures?	No
Dose Rates	8.1E2 rem/hr contact, 2.0E rem/hr @ 1 foot	Associated Equipment	N/A
Leak Test Info	N/A	Transportation Event?	No

### Narrative:

Revision 2 to LER 2004-001 provides further details related to the investigation of the three missing fuel rod segments and includes the cause analysis and corrective actions.

On June 23-25, 2004, Humboldt Bay Power Plant (HBPP) personnel discovered conflicting information regarding segments cut from spent fuel assembly A-49. One document indicated that the segments were stored in the spent fuel pool (SFP) in 1968, while another document indicated the A-49 assembly was shipped in its entirety for reprocessing in 1969. The NRC was notified on July 16, 2004, pursuant to 10 CFR 20.2201(a)(1)(ii) and 10 CFR 50.72(b)(2)(xi). (Reference NRC Event Notification 40877).

HBPP personnel have searched the SFP, but the intact segments have not been located. It is believed that the segments are either safely stored in the SFP, perhaps in an altered configuration, or were shipped to a facility licensed to accept radioactive material. Therefore, there is no undue risk to the health and safety of the public and licensed facility workers.

### Event Cause:

- Plant management did not require development of procedures for control and accountability of fuel rod segments.

### Contributing factors:

- Plant culture in the 1960s and early 1970s encouraged individual problem solving, rather than development and use of procedures for non-complex evolutions. This approach resulted in activities that were either performed without procedures, or with procedures that would be considered inadequate by current standards.
- The SNM Custodians were not adequately trained on control and accountability of SNM.
- There was no specific regulatory guidance for the control and accountability of fuel rod

segments.

- There was no specific industry experience or standards for the control and accountability of fuel rod segments.

**Licensee corrective actions:**

Immediate Corrective Actions:

- HBPP programs, procedures, and personnel training have been revised to require specific detail(s) regarding the documentation of location of fuel components (e.g., fuel fragments, fuel rod segments, fuel pellets, etc.) as they are identified in the SFP. A full cataloging and characterization of the contents of the SFP was performed to ensure a complete and accurate accounting of all SNM in PG&E's possession at HBPP, down to the fragment level.

Corrective Actions to Prevent Recurrence

1. Develop procedures that will measure and quantify SNM waste and fuel fragments. These procedures will result in corrections to the SNM inventory that will constitute an acceptable long-term corrective action.
2. Complete a detailed SNM inventory based on results of the ongoing SFP work.
3. Revise HBPP procedures to require specific detail(s) regarding the documentation of location of fuel components as they are identified in the SFP. A full cataloging and characterization of the contents was performed to ensure a complete and accurate accounting of all SNM in PG&E's possession at HBPP, down to the fragment level.
4. Revise HBAP D-7 "Control and Accountability of Special Nuclear Material and Waste Shipments" and STP 3.6.6 "Annual Special Nuclear Materials Physical Inventory and Spent Fuel Pool Cover Seal Verification" to address the issue of the physical inventory of non-fuel SNM in the pool.
5. Revise procedures EDOI B-3, EDOI B-5 and HBAP D-7 to ensure that procedures used for future work in the SFP and other areas where SNM may be located shall include provisions for control and accountability of fuel fragments and non-fuel SNM.
6. Create a "qualification" for the SNM Custodian and persons designated to be SNM Custodian.

**Licensee Notifications: patients, physician, other agencies, etc.**

The licensee notified applicable stake holders such as local, state and Federal Officials and other interested parties. The licensee has issued several press releases.

**NRC Inspection(s):**

NRC has conducted a Special Inspection. An interim Inspection Report 05000133/2005001 was issued on April 6, 2005, ML050900069. The final Inspection Report 05000133/2005002 was issued on August 19, 2005, ML052310593.

**NRC Notifications:**

The NRC has notified applicable stake holders such as State and Federal Officials and prepared and issued a communications plan.

**Enforcement:**

Three apparent violations were identified. Escalated enforcement action pending.

**Event Status for lost, stolen or abandoned material:**

The intact segments have not been located. The licensee believes that the segments are either in the SFP, perhaps in broken pieces, or were shipped to a low level radioactive waste facility.