

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-275/88-01 and 50-323/88-01

Docket Nos. 50-275 and 50-323

License Nos. DPR-80 and DPR-82

Licensee: Pacific Gas and Electric Company
77 Beale Street, Room 1451
San Francisco, California 94106

Facility Name: Diablo Canyon Units 1 and 2

Inspection at: San Luis Obispo County, California

Inspection Conducted: January 19-22, 1988

Inspector: C. A. Hooker
C. A. Hooker, Radiation Specialist

2/4/88
Date Signed

Approved by: G. P. Yuhas
G. P. Yuhas, Chief
Facilities Radiological Protection Section

2/12/88
Date Signed

Summary:

Inspection on January 19-22, 1988 (Report Nos. 50-275/88-01 and 50-323/88-01)

Areas Inspected: Routine unannounced inspection of previous inspection findings, solid wastes, licensee reports and licensee identified problems, surveys and monitoring, and facility tours. Inspection procedures addressed included 30703, 84722, 92700, 92701 and 83726.

Results: Of the areas inspected, no violations or deviations were identified.

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DETAILS

1. Persons Contacted

a. Pacific Gas and Electric Company (PG&E) Personnel

- *J. D. Townsend, Plant Manager
- *J. M. Gisclon, Assistant Plant Manager
- *D. B. Miklush, Acting Plant Superintendent, Assistant Plant Manager
- *W. B. McLane, Assistant Plant Manager, Technical Support
- *K. Doss, Senior Nuclear Generation Engineer
- *J. V. Boots, Manager, Chemistry and Radiation Protection (C&RP)
- *C. L. Eldridge, Manager, Quality Control
- *R. P. Powers, Senior C&RP Engineer, Supervisor Radiation Protection (RP)
- *J. E. Gardner, Senior-C&RP Engineer, Supervisor Chemistry
- *R. M. Taylor, Supervisor, Quality Assurance (QA)
- C. C. Miller, C&RP Engineer
- *T. L. Grebel, Supervisor, Regulatory Compliance
- J. A. Hays, General Foreman, RP
- *L. T. Moretti, Foreman, RP

b. NRC Personnel

- *J. L. Crews, Senior Reactor Engineer, Region V
- *A. D. Johnson, Enforcement Officer, Region V
- *M. L. Padovan, Acting Senior Resident Inspector
- *K. E. Johnston, Resident Inspector

* Denotes those present at the exit interview on January 22, 1988.

In addition to the individuals identified above, the inspector met and held discussions with other members of the licensee's and contractor's staffs.

2. Licensee Action on Previous Inspection Findings (92701)

(Closed) Followup (50-323/87-21-04): Inspection Report Nos. 50-323/87-21, 50-323/87-30 and 50-323/87-40 describe previous inspection efforts regarding the licensee's Quality Hotline (QH) investigation, No. QCSR-87-005, involving radiation protection concerns of an individual working in the radiological controlled area (RCA) of Unit 2 during the refueling outage. Inspection Report No. 50-323/87-40 documented the review of the C&RP Department's investigation and response to QH regarding this matter.

During this inspection, the on-site QH representative informed the inspector that the concerned individual had reviewed C&RP's reply and had no further concerns or questions regarding radiological controls that were at issue. The inspector had no further questions regarding this matter.



(Closed) Followup (50-323/87-40-01): Inspection Report No. 50-323/87-40 documented the inspector's review of a draft extremity exposure evaluation of an individual who had a radioactive fuel particle on his sock that was not identified on an initial survey. During this inspection the inspector reviewed the licensee's final investigation and dose evaluation report, Evaluation No. 0151. Based on this review the inspector noted that the licensee's extremity dose estimation of 1.642 rem appeared conservative and appropriate. The results of the evaluation emphasizing the lessons learned were forwarded to the Training Department for incorporation into the licensee's radioactive particle training program. The inspector also observed this matter being discussed during a RP radioactive particle requalification training class on January 21, 1988. The inspector had no further questions regarding this matter.

3. Radioactive Solid Wastes (84722 - Minimum)

a. QA Audits

QA Audit Report No. 87248T, dated December 1, 1987, was examined. The audit was conducted November 2-10, 1987, to verify that Diablo Canyon Power Plant (DCPP) had adequately implemented the applicable requirements of the Code of Federal Regulations, QA Policy, Technical Specifications (TS), and procedures for the receipt, control and accountability, disposal and transportation of licensed radioactive material.

The audit, among other items, included: interviews with cognizant management personnel, reviews of numerous procedures and documents related to the areas audited.

The audit identified one discrepancy that resulted in the issuance of one Audit Finding Report (AFR), No. 87-269, that required corrective action. The AFR was issued to the Materials Department for failure to notify the C&RP Department upon receipt of an area monitoring instrument that contained a limited quantity of radioactive material. The C&RP Department had identified this item on October 26, 1987, during a routine inventory of material stored at the warehouse. The package was located in the appropriate storage area and was not considered a safety and health problem. Based on a discussion with the Materials Superintendent, the inspector confirmed that corrective actions appeared appropriate.

With the exception of the one AFR issued, the QA auditors concluded that DCPP had been implementing the requirements for receipt, control and accountability, disposal and transportation of radioactive material.

The inspector, being familiar with the named QA audit team members, determined that the audit was conducted by qualified personnel.

b. Changes

The inspector was informed by the responsible C&RP Engineer that DCPP was in the process of changing vendors for radioactive waste



solidification encapsulation and dewatering operations. The final QA acceptance and approval of the new contract vendor was nearly complete.

Since the last inspection of this area, the licensee had moved their clean trash sorting and surveying operation from the 115 ft. level of the Unit 2 Fuel Handling Building to Bay No. 6 of the Waste Storage Facility. During a tour of the clean waste sorting area on January 20, 1988, the inspector made the following observations.

- While waste sorting was in progress, it was noted that the air flow into the small sorting hood appeared nonexistent as indicated by using a very thin strip of masslin cloth.
- Although the room was equipped with an existing ventilation exhaust system, the licensee was using a small portable exhaust blower equipped with a shop type bag filter (non HEPA) that exhausted into the room area.
- Bags of supposedly clean waste to be sorted and surveyed were overflowing (three to four feet) into the designated zone where marked bags of surveyed trash were being stored.
- Prior to sorting, bags of chemical and reagent bottles, and bags containing oily rags and/or rags with absorbed paint solvents (noted by odor) were not typically marked as hazardous waste.
- Surveys of waste being sorted appeared to be adequate for the detection of any radioactive material that could be present. The inspector was also informed by waste sorters that only infrequently is radioactive material found (typically <500 net cpm with a thin window hand held frisker) in the clean waste. The inspector noted that detailed records for each bag sorted were maintained at the work location. In review of recent sorted clean trash records and survey data, the inspector observed no problems that would indicate any lack of control of the licensee's inplant segregation of radioactive contaminated and clean waste.
- Recent daily air sample data from the waste sorting operations indicated nothing other than natural occurring activity.

The observations of poor air flow, exhaust system setup, unmarked bags that appeared to contain hazardous waste, and general housekeeping practices in this area were discussed with the RP supervisory staff. The RP Supervisor and other members of his staff visited the area and acknowledged the inspector's observations. The RP Supervisor halted the clean waste sorting operation, and informed the inspector that clean waste sorting would not restart until the operation was brought up to normal standards. This matter was also discussed at the exit meeting on January 22, 1988. The Plant Manager acknowledged the inspector's observations and made assurance that the matter would be handled expeditiously.



No violations or deviations were identified.

4. Licensee Event Reports (LERs) and Licensee Identified Problems (92700 and 83726)

The following LERS and problems were reviewed on-site:

a. LERs

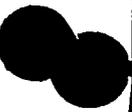
LER No. 1-87-027-00, Radiation Monitor Alarm and Hot Particle Caused Fuel Handling Building Ventilation System Change (Actuation of Engineered Safety Feature) due to Failure to Perform Survey, dated January 19, 1988. This event occurred on December 20, 1987, in the Unit 1 Fuel Handling Building during reracking when a hot particle (Co-60) was apparently removed from the Spent Fuel Pool, while a diver tender was taking slack out of an air grinder's hose that had tangled with the divers air hose. The hot particle exhibited dose rates sufficient to cause the FHB radiation monitor (RE-58) to alarm and cause automatic initiation of the ventilation system into the iodine removal mode. Based on the potential radiological safety significance, the licensee immediately initiated an investigation of this event in accordance with Nuclear Plant Administrative Procedure, NPAP C-18/NPG-7.5, Event Investigations. The licensee's Event Investigation Report No. 87-02, Hot Particle Event of December 20, 1987, was also examined during this inspection.

Based on review of the licensee's investigation, discussions with the contract divers and cognizant licensee representatives, and observations during several tours of the Unit 1 FHB during diving operations, the inspector observed that:

- The licensee had appropriately identified the hot particle to be 45.5 millicuries of Co-60. The licensee had also conservatively calculated that had the diver tender come in contact (0.5 seconds) with the hot particle with his hands, he could have received an extremity dose of 895 mrem and 5 mrem to other portions of the body. The licensee's approach and methodology for dose calculations and estimates appeared reasonable.

10 CFR 20.101 limits the extremity dose to 18.75 rem/quarter.

Root causes of this event, as determined by the licensee, was a lack of: 1) adequate procedure policy; 2) communication between the C&RP technician staff and management concerning the accelerated weekend work activities and reduced staff; and 3) recognition of work activities in the pool which could provide a mechanism for production and transport of hot particles to the surface of the pool. Corrective actions appeared appropriate and had been effectively implemented to preclude recurrence.



LER No. 1-87-026-00, Mode 1 (Power Operation) Entry While in Action Statement TS 3.6.2.2.a In Violation of TS 3.0.4 due to Lack of Procedural Guidance, dated January 19, 1988. This event occurred on December 17, 1987, at 0430 hours and involved the failure to maintain the NaOH concentration in the Spray Additive Tank at the TS required concentration of 30-32% prior to entering Mode 1. The concentration had been adjusted to 29.5% and the responsible shift chemistry foreman had incorrectly rounded the analysis data to 30%, which was reported to the shift foreman. The licensee's analysis for determining the NaOH concentration has an accuracy of $\pm 0.2\%$. On December 17, 1987, at 0830 hours, the Senior C&RP Engineer (Chemistry Supervisor) observed the error when reviewing the previous shift work activities. The Shift Foreman was immediately notified.

Draft LER No. 01-88-01, Failure to Perform Technical Specification 3.3.3.10.b Required Plant Vent Air Sampler Flow Estimate Due to Personnel Error. This event occurred on January 1, 1988, with Unit 1 in Mode 1, and involved the failure of a shift chemistry technician to review the shift turnover log sheet per Administrative Procedure A-10151, Relieving the Watch. The applicable T.S. Action Statement (51) requiring a 4 hour sample flow rate estimate for the plant vent monitor (RE-24) had been noted in the shift turnover log on the previous shift. According to cognizant licensee representatives, the LER would be issued within the 30 day time limit requirement.

The above LERS were reviewed for event description, root cause, corrective actions, generic applicability and report timeliness.

No violations or deviations were identified.

Action Request No. A0097157

During the inspection, on January 20, 1988, at about 1816 hours, while initiating a radioactive liquid discharge, from the No. 2 Laundry Holdup Storage Tank, the liquid radwaste monitor RE-18 alarmed and automatically terminated the discharge. This was the first liquid radwaste discharge following a spent resin transfer earlier in the day. The Auxiliary Control Operator notified a Chemistry Technician that RE-18 had tripped, flushed the system lines and re-initiated the discharge. This was in violation of procedures OP G-1:11, Liquid Radwaste System - Processing and Discharge of Liquid Radwaste, and CAP A-5, Liquid Radwaste Discharge Management, which require termination of the discharge permit so that an evaluation can be made and resampling of the source of discharge. After about one hour into the discharge, a C&RP Foreman observed a note related to the RE-18 trip, immediately investigated the matter, had the discharge terminated, and calculated the potential release rate which was about 0.11% of TS limit. The licensee informed the inspector of this event on January 21, 1988, at about 0900 hours.



The radioactive resin transfer system and the liquid radwaste system share some common lines. The licensee has had previous problems as a result of this system sharing and RE-18 alarms. Inspection Report No. 50-275/87-30 describes these problems and the need for procedural changes to reduce RE-18 alarms, which was also noted as a followup item (50-275/87-30-04).

The inspector discussed the licensee's recurring problems associated with the shared systems and RE-18 alarms at the exit meeting on January 22, 1988. The inspector also encouraged the licensee to put extra effort on resolving the problems due to the shared systems. The inspector's observations were acknowledged by the Plant Manager. The licensee's final investigation of this event will be examined in a subsequent inspection (50-275/88-01-01, Open).

5. Surveys and Monitoring (83726)

The inspector reviewed two licensee personnel exposure evaluation reports due to particle contaminations to determine the licensee's compliance with 10 CFR Part 20 and licensee procedures.

Radiological Occurrence Report No. 87-15848, dated December 20, 1987. This report and associated exposure evaluation involved an individual who had a Co-60 particle of about 0.073 uCi on his chin. This individual had been performing decontamination activities on a spent fuel rack removed from the Unit 1 SFP. The licensee evaluated the event and assigned a dose of 635 mrem to the skin of the whole body using the total time this individual had been in the radiologically controlled area. 10 CFR 20.101 limits the whole body skin dose to 7.5 rem/quarter.

Extremity Exposure Calculation, dated January 7, 1988. This event involved a suspected radioactive particle when a diver performed an underwater survey of himself during Unit 1 rerack operations. While the diver was vacuuming the floor area, previously occupied by a fuel rack, the under water dose rate meter showed fluctuations from a 5 mrem/hr background to 20 mrem/hr. An underwater survey, by the diver, indicated a reading of 54 mrem/hr on his left forearm. The dive was terminated and the diver surfaced. The surface survey did not detect any readings above the normal background (0.2-0.5 mrem/hr) readings. Based on the plants good fuel history and analysis of contaminants that had been encountered during rerack operations, the licensee assumed that a Co-60 particle was the cause for the reading on the divers forearm. The licensee evaluated and assigned an extremity dose of 404 mrem to the individual.

In review of the above events and through discussions with licensee representatives, the inspector observed that the licensee's evaluations appeared to be conservative, methodology for calculations and doses assigned appeared reasonable.

No violations or deviations identified.



6. Facility Tours (83726)

The inspector toured various areas of the auxiliary, fuel handling, waste storage and turbine buildings of Units 1 and 2 on several occasions. The inspector made independent radiation measurements using an NRC RO-2 portable ion chamber, S/N 2694, due for calibration February 5, 1988.

In addition to observations noted in the above paragraphs, the inspector noted that radiation areas and high radiation areas were posted as required by 10 CFR Part 20. Licensee access and posting controls for high radiation areas were observed to be consistent with TS, Section 6.12, and licensee's procedures.

No violations or deviations were identified.

7. Exit Interview

The inspector met with the licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on January 22, 1988. The scope and findings of the inspection were summarized.

The inspector informed the licensee representatives that no violations or deviations were identified.

The inspector's observations concerning areas of improvement discussed in this report were acknowledged by the licensee.

