

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-275/88-23 and 50-323/88-21

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: Diablo Canyon site, San Luis Obispo County, California

Inspection Conducted: August 15-19, 1988

Inspector:

H. S. North
H. S. North, Senior Radiation Specialist

9/13/88
Date Signed

Approved by:

H. S. North
H. S. North, Acting Chief
Facilities Radiological Protection Section

9/13/88
Date Signed

Summary:

Inspection on August 15-19, 1988 (Report Nos. 50-275/88-23 and 50-323/88-21)

Areas Inspected: Routine, unannounced inspection of licensee action on previous inspection findings and follow-up, Chemistry and Radiation Protection reorganization, liquid and gaseous waste audits, liquids and liquid wastes, gaseous wastes, instrumentation-liquid and gaseous wastes, facility tours, review of licensee reports, and an exit interview. Inspection procedures 92702, 92701, 83722, 84723, 84724, 90713 and 30703 were addressed.

Results:

In the areas inspected, the licensee's programs appeared capable of superior performance in the accomplishment of their safety objectives.

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DETAILS

1. Persons Contacted

- *J. D. Townsend, Plant Manager
- *J. V. Boots, Manager, Chemistry Department
- *K. C. Doss, Senior Nuclear Generation Engineer - Onsite Safety Review Group
- *C. L. Eldridge, Manager, Quality Control Department
- *J. E. Gardner, Senior Chem & Rad Protection Engineer
- *B. W. Griffin, Assistant Plant Manager/Technical Services Division
- *T. L. Grebel, Supervisor, Regulatory Compliance
- *D. A. Taggart, Director, Quality Support
- *R. P. Powers, Manager, Radiation Protection Department
- *L. F. Womack, Assistant Plant Manager/Operations Services

*Denotes those individuals present at the exit interview on August 19, 1988. In addition discussions were held with other members of the licensee's staff.

2. Licensee Action on Previous Inspection Findings and Follow-up (Closed) Enforcement (50-275/88-09-01)(92702)

This matter concerned the failure to properly lock closed the doors to very high radiation areas (VHRA) (>1000 mR/hr at 18 inches) on two separate occasions. The licensee's timely response specified that independent verification of VHRA doors would be instituted. It was verified that the applicable procedure had been amended and independent verification was in effect. The licensee stated in their response that an independent human factors evaluation of these events was to be performed. Further, during the inspection the licensee stated that modification of such doors, to provide for more positive closing and locking was being evaluated. The licensee noted that based on the results of the above evaluation the requirement for independent verification might be deleted from the procedure in the future.

(Open) Follow-up (50-275/87-30-04)(92701)

This matter concerns frequent alarms and effluent release terminations by monitor RE-18 (liquid radwaste discharge monitor) which is common to Units 1 and 2. The cause was traced to the common use of liquid radwaste piping and filters for spent resin sluice water. The alarms were caused by the failure of the filters to trap and retain resin fines and the inability to properly flush dead legs following sluice water transport. The licensee was adding parallel piping to separate the two systems and filters of a different design to remove resin fines from the sluice water system. This matter will remain open pending the completion of work.

(Closed) Follow-up (50-275/88-06-30)(92701)

This matter concerned the report of an anomalous 7 rem extremity exposure. No exposure in excess of regulatory limits was involved. On



June 30, 1988, the licensee reported that a contractor had reported that a TLD finger ring used by a workman indicated a 7 rem exposure. Subsequently the licensee investigated the occurrence. The investigation included interviews of the workman and radiation protection technicians that accompanied the workman, special surveys of the work area, rereview of the prejob surveys, evaluations of the TLD chip by the contractor, MCA counting of the TLD chip and ring label by the licensee (other ring components had been disposed), evaluation of the exposure of another workman that had performed essentially the same task as the exposed workman and a review of the workman's exposure history. The licensee was able to postulate but not support several scenarios that could have resulted in a TLD only exposure. In the absence of contrary supporting information the exposure was assigned to the individual and the investigation report and supporting documentation were placed in the individuals dosimetry file. The investigation was thorough and well documented.

(Closed) Follow-up on Information Notices (IN 87-39, IN-88-08, IN-88-22)(92701)

The licensee's practices following receipt of Information Notices was discussed. Administrative Procedure, Dissemination of Operating Experience, AP C-1451, was reviewed. It was verified that the notices had been received and the review process started or completed.

No violations or deviations were identified in the reviews in these program areas.

3. Chemistry and Radiation Protection Reorganization (83722)

With the July 25, 1988, issuance of amendments Nos. 29 and 28 to Diablo Canyon license Nos. DPR-80 and 82, respectively, the licensee reorganized the Chemistry and Radiation Protection organization. The Chemistry and Radiation Protection Department was divided into separate Radiation Protection and Chemistry Departments whose managers report to the Assistant Plant Manager for Operational Services. The reorganization was applicable to exempt employees (managers, supervisors and foremen). The Chemistry and Radiation Protection technician staff still rotates between the two organizations. The separation of chemistry and radiation protection functional areas at the technician level was awaiting resolution of questions with the technicians union representatives.

The Radiation Protection Department included Radiation Protection Engineering, Radwaste Management and Foremen staffs.

The Chemistry Department included Chemistry technical support foremen, Systems, Operations Support, Hazardous Waste Management, Water Management and Chemistry Process Instructor staffs. The reorganization provided an organizational recognition of operational realities which had existed for some time.

The reorganization represents a strengthening in both function areas.



4. Liquid and Gaseous Wastes (84723 & 84724)

Audits

Reports of two audits, titled, "Offsite Dose Calculation Procedure and Radiological Effluent Monitoring Program" conducted by the Corporate Quality Assurance staff, and the response to six Audit Finding Reports (AFRs) were reviewed. Audit Report 8709T documented an audit conducted April 20-24, 1987. This audit resulted in the issuance of six AFRs and no Nonconformance Reports. Audit Report 88810T documented an audit conducted March 28-April 1, 1988. No AFRs or Nonconformance Reports resulted from that audit. The reports noted that the audits were conducted to verify effective implementation of NRC Regulatory Guides, Technical Specifications, FSAR, QA Program and departmental procedures. The reports identified the records examined and the sample size in each case. The six AFRs addressed the following areas:

- ° The gaseous and liquid radwaste computer software validation and verification had been completed prior to implementation however the procedural documentation requirements had not been satisfied prior to implementation;
- ° Monthly updates of correlations of discharges to monitor readings had not been performed. Observations of monitor responses had not identified significant response variations.
- ° Objective evidence of quality control gamma spectrometer background checks was not available. Based on discharge authorization records and daily quality control checks it was determined that no Technical Specifications had been exceeded;
- ° A quality problem report was not generated when a gas-flow proportional counter, used for emergency backup, had exceeded its calibration date;
- ° Objective evidence of gas-flow proportional counter operating plateau evaluations was not available; and
- ° Several radiological effluent monitoring records had not been submitted to the Records Management System within the time interval specified in the plant procedures.

Responses to all AFRs had been completed and identified causes and corrective actions.

In a telephone conversation on August 29, 1988, the inspector established that the audit teams were led by an individual qualified in radiation protection practices.

The audits were detailed, and searching in scope with appropriate types and quantities of samples.



5. Liquids and Liquid Wastes (84723)Changes

During the first Unit 1 outage the licensee identified increased releases of cobalt isotopes in apparently colloidal form. The use of polyelectrolytes in the treatment of liquid waste was evaluated. Based on the evaluation it was determined that no 10 CFR 50.59 review was required for the use of this material and that no plant changes except for a spool piece on a pump suction line were required. Prior to the use of this pre-release treatment the annual release maximum was approximately 11 curies.

During the first year of use a goal of 5 curies was established with releases of approximately 3.5 curies. The goal for 1988, was reported to be 4 curies, which based on results to date would be met. At the time of the inspection the licensee was installing two additional liquid effluent filters increasing the number available to five, providing increased capacity and redundancy.

In the PASS-Sentry system the licensee had reworked Panel 80, the sample line isolation valves outside the Sentry system. The valves which were initially installed had been degraded by temperature and pressure effects. The proposed change in Panel 80 valves was evaluated and found not to constitute an unreviewed safety question.

The PASS-Sentry drain system was originally designated to drain to the post LOCA sample tank. It was found that when the tank became pressurized check valves leaked back generating airborne activity in the Sentry area. The PASS drain lines to the post LOCA tank were redirected to the equipment drain receiver tank and the Sentry sink drains were routed to the floor drains rather than the post LOCA tank.

PASS-Sentry system changes planned included the use of an inline dissolved hydrogen monitor in place of the gas chromatograph. The gas chromatograph capability was to be retained. It was determined that a 10 CFR 50.59 review was not required. Also pH and conductivity systems were to be changed to be internally consistent.

<u>System</u>	<u>Was</u>	<u>Change to</u>
pH	Beckman to L & N	Beckman to Beckman
specific conductivity	L & N to Beckman	L & N to L & N

There were no changes to the gaseous waste systems.

With respect to PASS procedures, emergency procedures were being edited to permit their use during normal operations, in an effort to eliminate redundant procedures. The surveillance test procedure interval for sampling the reactor cavity sump was changed from quarterly to once per fuel cycle (approximately 18 months) since during normal operations there was no source of water in the reactor cavity sump.



Effluents

The Semiannual Radioactive Effluent Release Report dated March 1, 1988 was reviewed. No obvious mistakes, anomalous measurements or omissions were noted. It was noted that during 1987, the quantity of liquid waste released was significantly reduced when compared with 1986, from approximately 11 to 4 curies. The licensee's procedures, practices, calculations and documentation of liquid waste releases were examined. The total body dose resulting from the discharge of a floor drain receiver tank was verified using the method contained in procedure CAP, A-8, Chemical Analysis Procedure, Off-Site Dose Calculations. The releases from the facility during 1987, were less than the values specified in 10 CFR 50 Appendix I.

Reactor Coolant and Secondary Water

This portion of the licensee's program will be examined during a subsequent inspection (50-275/88-23-03 and 50-323/88-21-03).

Technical Specification 3.11.1.4 limits the quantity of radioactive materials in any temporary outdoor tanks. The licensee had no temporary outdoor tanks used for radioactive material storage.

The liquid waste effluent program appeared to be effective in meeting the safety objectives of the program.

6. Gaseous Wastes (84724)

Changes

The licensee reported that there were no changes to the gaseous waste system.

Effluents

The Semiannual Radioactive Effluent Release Report dated March 1, 1988 was reviewed. No obvious mistakes, anomalous measurements, omissions or trends were noted. Procedure CAP A-6 Chemical Analysis Procedure, Gaseous Radwaste Discharge Management, was reviewed. The licensee's practices, calculations and documentation of gaseous waste releases were examined. The calculated total body site boundary dose due to the discharge of waste gas decay tank No. 2-3, batch No. 87-2-15, was verified using procedure CAP A-8 Chemical Analysis Procedure, Off-Site Dose Calculation. The releases from the facility during 1987, were less than the values specified in 10 CFR 50 Appendix I.

Air Cleaning Systems

The licensee had assigned a system engineer with both general systems and air cleaning systems training to these systems. The licensee's staff performed filter (DOP) and charcoal (freon) bank tests. The testing included, in addition to the fuel handling building, auxiliary building and control room systems required by Technical Specifications 3/4.7.5,



3/4.7.6 and 3/4.9.12 the technical support center, laundry and solid radwaste facility ventilation systems. In addition to the monthly operating tests performed by the operations staff, a weekly system check of all systems had been instituted. The weekly check included; duct inspection for damage, abnormal equipment noise, housekeeping, filter differential pressures (magnehelic) failed indicating lamps and verification of system lineup and status. In the case of the monthly tests a notice, restricting painting, welding and chemical releases was issued on the plant wide computer bulletin board restricting such activities during the testing period. Test frequency and results of charcoal samples, performed by a contractor, were examined for the control room, auxiliary building and fuel handling building. In addition the auxiliary building DOP and freon tests completed in May 1988, were reviewed.

The gaseous waste effluent program appeared to be effective in meeting the safety objectives of the program.

7. Instrumentation - Liquid and Gaseous Wastes (84723 and 84724)

Licensee procedure CAP A-8 Chemical Analysis Procedure, Off-Site Dose Calculations, addressed effluent monitor setpoint determination. Liquid releases from Units 1 and 2 follow a common pathway while gaseous releases were plant specific. The procedure provided for both pre-release calculations with consideration of all possible contributions to the waste stream and in the case of gaseous effluents the use of the 5 year annual average X/Q value. Following specific releases a post release calculation was performed based on actual volumes released, release duration and flow rates and in the case of gaseous waste the actual, real time X/Q value. It was verified that the licensee's practices were consistent with the procedure. The calculations performed in connection with waste releases were computer supported. The computer program used for waste release calculations had been validated, verified and documented. The licensee had imposed appropriate security controls on the computer system to prevent unauthorized program changes.

Procedure CAP D-19 Chemical Analysis Procedure, Correlation of RAD Monitors to Radioactivity, provided for routine evaluation of monitor performance. The procedure provided for the determination of the isotopic response for each type of monitor at specified intervals. The methods used in establishing the values and the most recent correlations were discussed. Due to the low level of activity in certain discharge pathways the licensee experienced difficulty in making the determinations with respect to certain monitors.

The licensee was in the final stage of issuing a request for bids for a major upgrade of the radiation monitoring system. The licensee had elected to upgrade the system due to continuing problems in maintenance and calibration, a lack of appropriate instrument range, sensitivity and accessibility of information and equipment which was not state of the art. The licensee estimated that the project would require approximately two years to complete once work started. New equipment will be installed piecemeal on a priority basis in parallel with existing equipment. In



some cases the changes will consist of upgrades of existing equipment. The progress in upgrading these systems will be followed during subsequent inspections. (50-275/88-23-01 and 50-323/88-21-01).

Calibration of effluent monitors will be examined during a subsequent inspection (50-275/88-23-02 and 50-323/88-21-02).

The licensee seemed to be maintaining their previous level of performance in this area and their program appeared to be adequate to accomplish its safety objectives.

8. Facility Tours

The radiologically controlled area (RCA) was toured. The tour included the fuel handling building levels 140' to 115' and auxiliary building 140' to 55' elevations. Very high radiation area doors were verified to be locked closed. Surveys, using an ion chamber survey instrument (NRC 022906, due for calibration August 20, 1988) established that areas were properly posted. The tour also included portions of the turbine building, specifically the Unit 1 condensate polisher area and condensate polisher laboratory. The facility was observed to be neat and orderly.

9. Review of Licensee Reports (90713)

The following LER's were reviewed in office without onsite follow-up:

Unit 1, 88-10-L0, 88-11-L0 and 88-12-L0;

Unit 2, 88-05-L0.

The licensee's Personnel Exposure and Monitoring Report for 1987, dated March 28, 1988 was reviewed. A total of 335.64 man-rem was received by a work force of 2863.

The licensee Semiannual Radwaste Effluent Release Report dated March 1, 1988, for the period July 1 - December 31, 1987, was reviewed.

The licensees Annual Environmental Operating Report, Part B for 1987, dated April 29, 1988, was reviewed.

No significant strengths or weaknesses were identified.

9. Exit Interview (30703)

The scope and findings of the inspection were discussed with the licensee's representatives identified in report section 1. The licensee was informed that no violations or deviations were identified.

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