

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-275/92-10 and 50-323/92-10

License Nos. DPR-80 and DPR-82

Licensee: Pacific Gas & 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: April 6-10, 1992

Inspection by: G.P. Kuhas
M. CILKS, Senior Radiation Specialist

4/30/92
Date Signed

Approved by: G.P. Kuhas
G. P. Kuhas, Chief
Reactor Radiological Protection Branch

4/30/92
Date Signed

Summary:

Areas Inspected:

Routine, unannounced inspection of radioactive waste management and a tour of the licensee's facility. Inspection module 84750 was addressed.

Results:

One inspection followup item involving the recording of "as left" data during the calibration of radiation monitoring system instruments is discussed in Section 2.

Strengths were noted in licensee activities associated with the performance of quality assurance audits. The licensee's programs appeared fully capable of accomplishing their safety objectives. No violations or deviations were identified.



DETAILS

1. Persons Contacted

a. Licensee

- J. Townsend, Vice President, Diablo Canyon Operations & Plant Manager
- *T. Moulin, Assistant to Vice President
- *D. Miklush, Manager, Operations Services
- *R. Gray, Director, Radiation Protection
- *J. Molden, Director, I&C
- *M. Sommerville, Radiation Protection, Senior Engineer
- *J. Boots, Director, Chemistry
- *J. Gardner, Senior Chemical Engineer
- D. Taggart, Director, Quality Performance and Assessment
- *T. Irwin, Radiation Protection General Foreman
- *J. Griffin, Sr. Engineer, Regulatory Compliance
- G. Monk, Training Instructor
- W. Wallace, Acting I&C Foreman
- M. Nash, I&C Planner
- *T. Bast, Work Planning Coordinator
- *G. Boiles, Radiation protection Foreman
- *R. Synder, Senior Chemistry Instructor

b. NRC

- *M. Miller, Resident Inspector

*Denotes those individuals present at the exit interview conducted on April 10, 1992.

Additional discussions were held with other members of the licensee's staff.

2. Radioactive Waste Treatment, and Effluent and Environmental Monitoring (84750)

An examination was conducted to verify:

- o The licensee's radioactive waste treatment systems and radiation monitoring systems (RMS) were maintained and operated in accordance with Technical Specification (TS) requirements.
- o The licensee effectively controls, quantifies, and monitors releases of radioactive materials in liquids, gaseous, and particulate forms to the environment in accordance with TS requirements.



a. Audits and Appraisals

The following audits performed by the licensee's Quality Assurance (QA) and Quality Control (QC) departments were reviewed:

- o Audit Report 91012I, "Radioactive Effluents Monitoring Program and Off-Site Dose Calculation Procedure (ODCP)"
- o Audit Report 91034I, "Radioactive Material Management"

Although some deficient conditions were observed during the audits, no violations of regulatory requirements had been identified. The deficiencies were documented as Action Requests or Quality Evaluation reports. Corrective actions were taken in a timely manner.

The audits appeared to cover a broad scope of the areas that were examined. The inspector concluded that the licensee's audit/surveillance program provided the licensee with a viable tool for measuring their performance. The licensee maintained its previous level of performance in this area, and the audit/surveillance program was adequate in meeting the recommendations of ANSI/ANS-3.2/18.7, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants."

b. Changes

(1) Radiation Monitoring System Upgrades

A major project to upgrade (e.g., replace) the licensee's existing radiation monitoring system (RMS) with new, state of the art, equipment was underway during this inspection period.

The inspector discussed the project with the licensee's staff and witnessed the work that was in progress at the time of this inspection.

The licensee's staff informed the inspector that the replacement of the RMS would be accomplished in three phases and was expected to take a minimum of three to four years to complete. The work to replace the RMS was initiated in September of 1991.

The project includes modifications to portions of the RMS governed by the TS. A license change request has been submitted to the NRC on June 5, 1991, as License Amendment Request (LAR) 91-06. The proposed changes are expected to affect TS Sections 3/4.3.2, "Engineered Safety Features Actuation System Instrumentation," 3/4.3.3.1, "Radiation Monitoring for Plant Operations," 3/4.3.3.10, "Radioactive Gaseous Effluent Monitoring Instrumentation," 3/4.9.9, "Containment Ventilation Isolation," and 3/4.9.12, "Fuel Handling Building Ventilation System." The upgrade will include the following changes to portions of the RMS governed by TS:



- (a) Addition of radiation monitors to the Containment Ventilation exhaust line (RM-44A and RM-44B) and to the Fuel Handling Building Ventilation Exhaust line (RM-45A and RM-45B).
- (b) Modifications to the Plant Vent Noble Gas Activity Monitors (RM-14A and RM-14B) and the Fuel Storage Area Radiation Monitors (RM-58 and RM-59).
- (c) Addition of Plant Vent RMS flow rate monitors and removal of the iodine sampler flow rate monitors.

The changes are expected to improve the performance, reliability, and capability of the current RMS. The licensee's staff stated that the recommendations of NUREG 0737, "Clarification of TMI Action Plan Requirements," Regulatory Guide (RG) 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," and ANSI N-13.1, "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities" were factored into the design change packages.

The RMS affected are as follows:

Plant Vent-Normal Range	RE-14 (Noble Gas) RE-24 (Iodine) RE-28 (Particulate)
Plant Vent-Redundant Normal Range	RE-14 (Noble Gas) RE-24 (Iodine) RE-28 (Particulate)
Plant Vent-Extended Range	RE-87 (Noble Gas- this also includes skid mounted Iodine and particulate cartridges)
Plant Vent Room Area Monitor	RE-34
Containment Ventilation & Purge/Hydrogen Exhaust	RE-44A RE-44B
Liquid Radwaste Discharge	RE-18 (Common to Unit 1 & 2)
Gas Decay Tank Discharge	RE-22
Containment Atmosphere	RE-09 (Noble Gas) RE-11 (Iodine) RE-12 (Particulate)
Control Room Atmosphere (Common to both Units)	RE-21 (Noble Gas) RE-46 (Iodine) RE-47 (Particulate)



Control Room Intakes	RE-25 RE-26
Control Room Ventilation Pressurization Intake	RE-51 RE-52 RE-53 RE-54
Component Cooling Water Discharge	RE-17 RE-17R
Steam Generator Blowdown Tank Inlet	RE-19 (Liquid)
Steam Generator Blowdown Tank Discharge to Discharge Tunnel	RE-23 (liquid)
Oily Water Separator	RE-03
Control Room Area Monitor	RE-01
Residual Heat Removal Room Ducts 1 and 2	RE-13 RE-13R
Main Steam Line Monitor	RE-71 RE-72 RE-73 RE-74
Gas Decay Tank #1	RE-41
#2	RE-42
#3	RE-43
Post Accident Sampling Room	RE-48
ALARA Area Monitor	
Iodine Sampler Room	RE-35
ALARA Area Monitor	
Container Area Monitor	RE-02
In-Core Seal Table Area Monitor	RE-07

The modification will include the installation of a Central Radiation Processor (CPR) Digital Highway Integration and Radiation Monitoring Terminal Display Unit during phase two.

The inspector was informed that some of the monitors would be relocated to new areas to improve their performance, accessibility, and reliability. The inspector observed work associated with the installation of RE-15A and RE-15B and RE-44A and RE-44B monitors during the inspection. The licensee's staff reported that the



installation of RE-15A and RE-15B was expected to be completed by June 1, 1992.

The inspector commended the licensee's staff for their efforts to upgrade their RMS and informed the staff and individuals attending the exit interview that the NRC Region V staff would continue to routinely examine the licensee's progress to complete the upgrades during subsequent inspections.

(2) Implementation of Generic Letter 89-01

The licensee's staff informed the inspector that they had recently received Amendments 66 and 67 to the Unit 1 and 2 Operating License. The amendments revise the TS to:

- (a) Relocate the procedural details of the Radiological Effluent Technical Specifications (RETS) to the Radiological Monitoring Control Procedure (RCMP) or the Process Control Program (PCP), as appropriate.
- (b) Implement programmatic controls in the Administrative Controls section of the TS to satisfy existing Regulatory requirements for RETS.

These actions, which are expected to be implemented by June 1, 1992, will simplify the RETS and still meet the regulatory requirements for radioactive effluents and radioactive environmental monitoring. The guidance provided in NRC Generic Letter 89-01 was used request the changes.

c. Procedures

The following procedures and documents were reviewed:

- o Monthly Radioactive Effluent Reports
- o CAP A-8, "Offsite Dose Calculation Procedure"
- o AP C-252, "Chemistry Data Reporting to other Departments"
- o STP G-14, "Operability Determination of Post Accident Sampling Program"
- o CAP D-6, "Specific Activity Determination in Liquid Samples"
- o CAP D-15, "Steam Generator Leak Rate Determination"
- o CAP D-18, "Noble Gas Contents of Gas Decay Tank(s) in Terms of Equivalent Xe-133"
- o CAP G-3, "Trouble Shooting Surveillance, and Maintenance for Sounder PASS"
- o NPAP C-203, "High-Alarm Setpoint Control"
- o EP RB-15, "Post Accident Sampling System"
- o AP A-58, "Control of Equipment Not Required by the Technical Specifications"
- o STP I-101B3, "Radiation Source Presentation (Isotopic) Calibration of Plant Vent Radiogas Monitors RM-14A and RM-14B"



- o STP I-103B, "Calibration of Gas Decay Tank Gas Discharge Monitor RM-22"
- o Updated Final Safety Analysis Report (UFSAR)
- o Abstract prepared by K.L. James and C.C. Miller of Pacific Gas and Electric Company (PG&E), entitled, "The Impact of Ion Exchange Media and Filters on LLW Processing"
- o PG&E Memorandum, dated February 12, 1992, entitled "Minutes of Source Term Reduction Meeting, January 28, 1992, NOS Log #2075"
- o Training lesson plans and attendance records for the PASS

d. Post Accident Sampling System (PASS)

The licensee's program for assuring compliance with TS 6.8.4.e, "Post Accident Sampling" was examined.

The examination included a review of applicable procedures and training records, discussions with the assigned PASS engineer and training instructor, and by direct observations during tours of the licensee's PASS.

The review disclosed that the licensee uses the PASS, which is referred to as the Sounder System, very effectively for training PASS users. Chemistry and Radiation Protection Technicians (C&RPTs) are trained as PASS users. A group of ten C&RPT are rotated quarterly. Eight of the ten C&RPTs are trained in pairs to operate PASS and the remaining two C&RPTs are used to set up the PASS for the users.

C&RPTs are required to demonstrate their capability for obtaining and analyzing a reactor coolant sample (RCS) and containment atmosphere sample within three hours. The analysis must meet an acceptance criteria that is established in accordance in the training lesson plan before the C&RPTs team is considered qualified to stand watch as a qualified PASS users. A review of training records for the past year indicated that all C&RPTs teams were capable of obtaining and analyzing the samples within the three hour criteria; however, no records of the start or stop times were maintained and nor were any data maintained as to the sample analysis results. These observations were discussed with the licensee's staff. The licensee's staff thought that it would be useful information to document and decided to maintain such records even though its not a regulatory requirement to do so.

Upon completion of training at least two users are assigned the responsibility for completing STP G-14 at once per quarter. The results obtained are compared with the normal sampling system. The results must compare within the acceptance criteria established in STP G-14 before the system is considered to be operable. Failure to meet the acceptance criteria may result in repeating a portion or the entire STP over again. A review of recent PASS analysis results indicated the PASS system was functioning properly.



The inspector verified that procedures for sampling and analysis were established and that provisions for maintenance of sampling and analysis equipment were being implemented.

The inspector concluded that the licensee's post accident sampling program met or exceeded TS 6.8.4.e requirements.

e. Radiation Monitoring System (RMS)

The inspector verified that the surveillance requirements for the existing RMS were performed at the frequencies specified in TS 3/4.3.3. Applicable surveillance test procedures for performing channel checks, source checks, channel functional tests, and channel calibrations for the period of 1990-1992 were reviewed. The inspector also verified that the alarm/trip set points were consistent with the values listed in the TS and applicable licensee procedures.

The inspector noted that the "as left" high alarm set point (HASP) data had not been recorded upon completion of calibration of RM-14A and RM-14B. It was further noted that other STP's used for calibrating other RMS only require the "as left" status be recorded under certain conditions, e.g., if any adjustments were made, readings out of desired accuracy, etc. The observation was discussed with the licensee's staff. The staff reported that an Action Request (AR) Number A0133884, dated December 6, 1988, identified a need to change STP I-101B3 because of various problems with the procedure. The inspector also discussed the observation with the Director of I&C and at the exit interview.

The inspector was informed that the double standard observed during the inspection would be corrected during the next revision to applicable procedures. The inspector informed the licensee that it appeared that their corrective actions had not been timely and that this item would be examined during a subsequent inspection (50-275/92-10-01 and 50-323/92-10-01).

f. Radioactive Effluents

The inspector reviewed records of reactor coolant system chemistry for 1991 and 1992. The licensee had performed analyses of dissolved oxygen, fluoride, chloride, and dose equivalent Iodine-131 at the frequencies required by TS 3/4.4.7, "Chemistry" and TS 3/4.4.8, "Specific Activity." Records of analyses results associated with sampling for the specific activity of the secondary coolant system pursuant to TS 4.7.1.4 were also examined.

All sample results were well within TS limits.

g. Offsite Dose Calculation Procedure (ODCP)

No changes had been made to the Off-Site Calculation Procedure since the previous inspection.



h. Semiannual Effluent Release Report

The inspector reviewed the licensee's July 1 - December 31, 1991, Semiannual Effluent Release Report that was submitted in accordance with the requirements of TS 6.9.1.6. The report was consistent with the format recommended in Regulatory Guide (RG) 1.21 and the methodology appeared to conform to that recommended in RG 1.109.

Radioactive releases of liquid and gaseous effluents and resulting doses for the period were significantly below the limits of TS 3/4.11. The inspector noted that quantities of discharged activity resulting from liquid releases had decreased for the second consecutive year. The total activity released for 1991 was reported as 0.831 Curies as compared to approximately 2.5 Curies reported during 1989. Discussions with the licensee's staff disclosed that regularly scheduled meetings are held for the purpose addressing methods for reducing the source term. The meetings are used to address generate new concepts for reducing the source term.

Two insignificant abnormal (e.g., unplanned) noble gas releases were reported. Both releases were monitored by the plant vent monitors. The percent of release rate were a small fraction (less than 3.69 E-4 and 1.51 E-2 percent, respectively) of the TS 3.11.2.1.a, "Gaseous Effluent Dose Rates."

i. Holdup Tanks

The quantity of radioactivity contained in temporary liquid holdup tanks and in each gas decay holdup tank were well below the limits prescribe in TS 3.11.1.4 and 3.11.2.6.

The inspector concluded that the licensee was maintaining its previous level of performance in this program area and that the licensee's REMP was fully capable of meeting its safety objectives. No violations or deviations were identified.

3. Facility Tour

Tours of the licensee's facilities were conducted during the inspection period. Radioactive waste storage areas were included in the tours. Independent radiation measurements were made using an ion chamber survey instrument, Model RO-2, serial number 2694, due for calibration on April 10, 1992. The following observations were made:

- a. NRC Form 3 posting and labeling practices were consistent with 10 CFR 19.11 and 20.203 requirements.
- b. Plant cleanliness was being maintained at the same level as the previous inspection.
- c. All portable radiation survey instruments observed were in current calibration.



- d. All personnel observed in the licensee's controlled areas were equipped with appropriate dosimetry devices.

The licensee's performance in this subject area appeared fully capable of meeting its safety objectives.

5. Exit Interview

The inspectors met with the individuals denoted in paragraph 1 at the conclusion of the inspection on April 10, 1992. The scope and findings of the inspection were summarized. The licensee was informed that no violations or deviations were identified.

