U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-275/84-18

Docket No. 50-275

License No. DPR-76

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

Facility Name: Diablo Canyon Unit 1

Inspection at: San Luis Obispo County, California

Inspection conducted: June 20 through 22, 1984

Inspectors: E. M. Garcia — 6/29/84
E. M. Garcia, Radiation Specialist — Date Signed

G. P. Yuhas — 6/29/84
G. P. Yuhas, Chief, Reactor
Radiation Protection Section — Date Signed

Approved by: F. A. Wenslawski — 7/2/84
F. A. Wenslawski, Chief
Radiological Safety Branch — Date Signed

Summary:

Inspection on June 20-22, 1984 (Report No. 50-275/84-18)

Areas Inspected: Special announced inspection by a regionally based inspector to observe the implementation of NUREG 0737, item II.B.3, the Post Accident Sampling System (PASS). Specifically, the inspection was to observe the operability of the system. Other areas examined during this inspection period included a facility tour and review of plant status and planned evolutions. This inspection involved 50 hours on site by two inspectors.

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

DETAILS

1. Persons Contacted

a. Pacific Gas and Electric Co. Staff

R. C. Thornberry, Plant Manager
*R. Patterson, Plant Superintendent
*J. M. Gisclon, Assistant Plant Manager
*J. V. Boots, Chemistry and Radiation Protection (C&RP) Manager
*C. M. Seward, Onsite Quality Assurance Supervisor
*E. T. Murphy, Regulatory Compliance Supervisor
*W. T. Rapp, Onsite Safety Review Group Chairman
*M. J. Peterson, Senior C&RP Engineer
W. A. O'Hara, Senior C&RP Engineer
*G. A. English, Nuclear Generation Engineer, General Office
L. T. Moretti, C&RP Foreman
H. A. Ferguson, C&RP foreman

b. Contractors Staff

R. E. Harris, Supervisor Radiation Protection (NUMANCO)

c. NRC Resident Inspectors

*M. M. Mendonca, Senior Resident Inspector
M. L. Padovan, Resident Inspector
T. J. Polich, Resident Inspector

*Indicates those individuals attending the exit interview.

In addition to the individuals noted above, the inspector interviewed other members of the licensee's staff.

2. NUREG 0737, Item II.B.3, Post Accident Sampling System (PASS)

License condition C.(8)h and Technical Specification 6.8.4e require the licensee to implement the recommendations of NUREG 0737, Item II.B.3, PASS. By letter dated November 15, 1983, NRR established that this requirement shall be implemented prior to exceeding five percent of rated power.

In letters dated February 29, 1980 and February 20, 1981 PG&E committed to implement certain sampling and analyses capability to meet the PASS requirements. These commitments were reviewed and approved by NRR as noted in NUREG-0675, "Safety Evaluation Report related to the operation of Diablo Canyon Nuclear Power Plant, Units 1 and 2", Supplement 14, April 1981. The licensee has clarified their commitments in letters dated September 8, 1983 and November 11, 1983.

This inspection was to observe the licensee's progress in implementing their commitments; specifically, the licensee's capability to collect and

analyze a reactor coolant or containment atmosphere sample within the required 3 hour limit.

The following applicable licensee's procedures were reviewed by the inspector:

Number	Title	Rev	Date
CAP G-1	Post Accident Sample Handling	4	5/22/84
CAP G-2	Access and Operation of Interim Post LOCA Sampling System	7	6/14/84
TP TC-8303	Sentry Room Access and Containment Air Sampling During Accident Conditions	3	6/08/84
EP RB-14	Core Damage Assessment Procedure	0	4/07/84

The first three procedures have received extensive testing by the licensee during technician training and appear to be adequate and workable. The last procedure addresses the four core damage conditions listed in NRR's letter of November 15, 1984. The licensee has submitted this procedure to NRR for review.

The inspector observed the licensee collecting and analyzing containment atmosphere and reactor coolant samples. The first three procedures listed above were used. The reactor coolant sample was collected from the residual heat removal system (RHR). The reactor was in mode 5, cold shutdown. The licensee had interpreted the requirement to collect and analyze a sample within 3 hours to mean both samples, containment atmosphere and reactor coolant. Their procedures are written to conduct both samples within the 3 hours limits. Sampling and analysis was completed in two hours fifteen minutes. The coolant was analysed for dissolved hydrogen, boron, and radionuclides by gamma spectroscopy. The containment atmosphere sample was analysed for hydrogen and radionuclides by gamma spectroscopy. The inspector noted that the licensee staff was well-trained, procedures were workable, and the required equipment was readily available.

Five issues requiring resolution were identified. These issues and the licensee's response at the exit interview are described below:

A. The interim post LOCA sampling system (IPLSS) can collect samples from two locations, RCS hot legs 1 and 4 and the Residual Heat Removal (RHR) discharge. The sample line for the RCS is longer than 400 feet of 3/8" [illegible] pipe. The driving force for RCS samples is the pressure in the system. The licensee needs to verify that this line can be purged and samples collected within the required time at range of pressures from normal operation to that at which sampling would be shifted to RHR. This capability has only been determined at operating pressure. The licensee needs to verify system performance as a function of RCS pressure.

Exit interview response:

P. G. and E. will verify system performance as a function of RCS pressure.

B. Dilution of liquid samples collected by IPLSS is accomplished by two diluter valves. These two diluter valves have been designed with nominal dilution factors of 28 to 1 and 550 to 1. The table below summarizes measured dilution factors.

SOURCE	NOMINAL 28:1	NOMINAL 550:1
RHR	29.0 $\pm$ 1.3	509 $\pm$ 28
HOT LEG	21.0 $\pm$ 1.3	276 $\pm$ 25

As the data indicates, at system pressure the valves do not perform as designed. The licensee has not taken measurements at other pressures. The licensee needs to resolve or quantify the observed phenomenon throughout the range of pressures.

Exit interview response:

P. G. and E. will measure and investigate the observed phenomenon during the RCS pressure testing as committed in the first issue.

C. The licensee's program does not include a procedure that defines what constitutes system operability or establishes alternatives for meeting required parameters. It is the position of Region V that such a procedure is required to meet the intent of technical specification 6.8.4e.

Exit interview response:

P. G. and E. will review the comments and take the action they feel is appropriate.

D. A ventilation exhaust plenum is located directly above the IPLSS panel. IPLSS operators would we required to work directly below this plenum. During some postulated accidents leaks from systems containing highly radioactive fluids could generate radioactive gases that would be exhausted by this plenum. This plenum could then constitute a significant source of radiation exposure to the IPLSS operators. The licensee staff was not able to determine at the time of the inspection if this source term had been considered in their design dose calculation. The licensee is required to include doses to IPLSS operators from the ventilation duct source term in their evaluation.

Exit interview response:

P. G. and E. will review the IPLSS design dose calculation and include the plenum source term if neccesary.

E. SSER 14 lists the sample locations and analysis that the licensee has committed to have in their program. The combination of the IPLSS and Sentry systems demonstrated during the inspection did not have the capability to sample at all locations or conduct all the analysis listed in SSER 14. Specifically, the system demonstrated can not sample from the pressurizer or letdown and can only sample from the containment sump under some conditions. Also, the system does not provide for analysis of oxygen, pH, or conductivity. The licensee stated that the parameters noted on SSER 14 refer to their fully operational Sentry system. They further stated that in a letter to NRR, dated September 8, 1983, their current status had been clarified. The inspector commented that it is not clear if NRR understood the status of their "interim" program. The Sentry system is not fully operational.

Exit interview response:

The Sentry system is not fully operational but the containment air sampling portion presently performs it's intended function.

These issues were discussed at the exit interview. Under the existing plant conditions, no violations of NRC requirements were identified. (Open, 81-16-01)

3. Facility Tour

The inspector toured portions of the facility's restricted area and radiologically controlled area. No violations of NRC requirements were observed.

4. Review of Plant Status and Planned Evolutions

During the period of May 22 to June 22, 1984 the inspector communicated weekly with the licensee's radiation protection staff and the NRC resident inspector. These discussions involved the radiological perspective of current plant status and planned evolutions. No violations of NRC requirements were identified.

5. Exit Interview

At the conclusion of the inspection the inspector met with the individuals denoted in Paragraph 1. The extent and findings of the inspection were discussed. The five issues discussed in Paragraph 2 were presented. The licensee response to each issue is described in Paragraph 2. The licensee was informed that no Violations of NRC requirements had been identified .