

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION V

IE Inspection Report No. 50-133/75-10

Licensee Pacific Gas and Electric Company Docket No. 50-133
77 Beale Street License No. DPR-7
San Francisco, California 94106 Priority _____

Facility Humboldt Bay Unit No. 3 Category C

Location Eureka, California

Type of Facility BWR (65 MWe)

Type of Inspection Routine, Unannounced

Dates of Inspection October 14-17 and 30, 1975

Dates of Previous Inspection May 19-23, June 11-12, 24 & 27, 1975

Principal Inspector *H. S. North* 11/1/75
H. S. North, Radiation Specialist Date

Accompanying Inspectors None _____
_____ Date
_____ Date

Other Accompanying Personnel: None

Reviewed by *H. E. Book* 11/11/75
Herbert E. Book, Chief, Radiological and Date
Environmental Protection Branch

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SUMMARY

Enforcement Action

Three individuals received exposures to radiation in excess of the limits of 10 CFR 20.101(a) prior to compliance with the requirements of 10 CFR 20.101(b). (Item 5.C of Details)

Previously Identified Enforcement Items

Not applicable.

Design Changes

- A. Construction of the augmented off-gas system reinforced concrete structure is essentially complete. Startup of the facility is planned following the spring-summer 1976 refueling outage. (No Information in Details)
- B. Design of the planned ventilation changes has been completed, and major equipment items have been ordered with delivery to begin possibly in March 1976. Installation is expected to begin during the spring-summer 1976 refueling outage but may not be completed at that time if all equipment has not been received. The change will increase the plant ventilation from 10-12 Kcfm to 44-50 Kcfm. (No Information in Details)

Unusual Occurrences

With the exception of the licensee reported exposure of three individuals to radiation in excess of the limits of 10 CFR 20.101(a), no unusual occurrences were identified by the licensee or the inspector. (Item 5.C of Details)

Other Significant Findings

A. Current Findings

- 1. Training records for Radiation and Process Monitors (RPM) indicate that training is behind schedule. (Item 5.A of Details)
- 2. Clean heating steam condensate from the liquid rad waste evaporator could constitute an unevaluated release path in the event of a heating coil leak. (Item 6.B of Details)
- 3. The emergency kit at the Eureka Service Center did not contain a "Log and instructions for CP's and GM," as described in the inventory. (Item 4.B.(1) of Details)

4. No tests or drills of the Emergency Plan have been conducted during 1975. (Item 4.C of Details)
5. The licensee agreed to submit the results of analyses of samples collected during the inspection within 30 days. (Item 6.A of Details)
6. A whole body counter has been installed at the plant. Some difficulty is being experienced with the telephone transmission of data to the contractor supplying the service. Until resolved, data are being transmitted by mail. (No Reference in Details)

B. Status of Previously Reported Unresolved Items

The licensee has not established a limit on the level of airborne radioactivity in the Refueling Building which will preclude opening of the railroad doors (reference IE Inspection Report No. 50-133/75-08). (No Reference in Details)

Management Interviews

- A. The planned scope of the inspection was discussed with Messrs. Raymond, Rapp and Guehring on October 14, 1975, when the inspector arrived at the site.
- B. The results of the inspection were discussed with Messrs. Raymond, Weeks and Parker on October 17, 1975 at the conclusion of the inspection. The discussion included the items identified under the previous headings Enforcement Action and Other Significant Findings.

With respect to the noncompliance identified in the Enforcement Action section, the licensee's corrective actions described in the Letter of August 8, 1975 were verified during the inspection and found to be appropriate. (Item 5.C of Details)

The inspector informed the licensee's representatives that he had been favorably impressed by the following items:

1. Plant cleanliness. (Item 3. of Details)
2. Training in firefighting. (Item 4.B.(4)a. of Details)
3. Uniformly good coordination with off-site agencies as indicated by contacts with said agencies as a part of the inspection of the licensee's Emergency Plan. (Item 4.A of Details)

DETAILS

1. Individuals Contacted

Humboldt Operations Staff

W. A. Raymond, Plant Superintendent
E. D. Weeks, Power Plant Engineer
W. T. Rapp, Senior Power Production Engineer
R. S. Chaffee, Power Production Engineer
R. C. Parker, Chemical and Radiation Protection Engineer
J. S. Guehring, Chemical and Radiation Protection Engineer
J. Kamberg, Instrument Maintenance Foreman

Participating Off-Site Agencies - Emergency Plan

W. Schwartz, Civil Defense Technician
Humboldt County Office of Emergency Services

A. Lasser, Hospital Administrator
L. Yandell, Director of Building Services
General Hospital, Eureka, California

P. Kriger, Hospital Administrator
St. Joseph Hospital, Eureka, California

E. B. Jensen, Chief
Humboldt No. 1 Fire Protection District, Eureka, California

J. Kearns, Radiological Defense Officer
California State Office of Emergency Services, Sacramento, Calif.

2. Initial Discussion with Management

The licensee was informed of the items to be included in the inspection. The licensee reported that with the exception of the exposure of three employees in excess of 1.25 rem/quarter which was reported in the licensee's letter of August 8, 1975, there had been no unusual occurrences of radiological significance since the inspection of May 19-23, June 11-12, 24 and 27, 1975 (IE Inspection Report No. 50-133/75-04). The licensee was informed that an inspection would be conducted in December 1975 as a part of a change of inspector (Radiation Specialist) assignments.

3. Cleanliness

PG&E Quality Assurance Procedure No. 4.4, "Housekeeping and Cleanliness Control," has been prepared and published. The licensee is committed to an implementation date of December 31, 1975. Nuclear Plant Administrative Procedure No. C-10 relating to cleanliness and housekeeping has been prepared and approved by the Manager, Steam Generation. This procedure had not been reviewed and approved by the On-Site Review Committee at the time of the inspection. The licensee verified a commitment for implementation by December 31, 1975.

A tour of the plant disclosed improved housekeeping and cleanliness which was most noticeable in the Refueling Building. Slings and electrical extension cords had been hung on wall-mounted hangers. The quantity of equipment stored on the floor had been reduced.

4. Emergency Planning

The previously existing Emergency Plan at this facility was revised to assure the Plan's compatibility with the requirements of Appendix E of 10 CFR 50. The revised Emergency Plan was approved by the On-Site Review Committee October 9, 1974.

A. Coordination With Off-Site Agencies

Discussion with the licensee disclosed that contacts with off-site agencies are being maintained. The frequency of the contacts varies depending on the need for planning and coordination. The licensee's Emergency Plan identifies participating organizations and includes the participating agencies' plans or agreements.

During the inspection, the following off-site organizations were contacted, the existence of continuing contact, coordination and the agencies' understanding of their role in the Emergency Plan was verified.

Office of Emergency Services, County of Humboldt, Eureka, Calif.

The General Hospital, Eureka, California.

St. Joseph's Hospital, Eureka, California.

Humboldt No. 1 Fire Protection District, Eureka, California.

All personnel contacted indicated a satisfactory understanding of their respective roles and were satisfied with the degree of coordination and cooperation provided by the licensee.

The California State Office of Emergency Services was contacted by telephone. The principal response agency is Humboldt County Office of Emergency Services. The State Office of Emergency Services is willing to provide assistance if requested; however, because of the distances involved, such assistance would be delayed. A Radiological Emergency Response Workshop is planned in Sacramento for the week of November 17-21, 1975 in which Humboldt County Office of Emergency Services plans to participate.

B. Facilities, Equipment and Procedures

(1) Facilities and Equipment

The inventory of the emergency kit (Emergency Plan Table III-3.A.) located at the Eureka Service Center, the Off-Site Emergency Control Center, was examined. The inventory was verified with one exception. The inventory includes a "Log and instructions for CP's and GM," which was not included with the kit. The licensee stated that the "Log" would be a standard PG&E record log available at the Service Center. The licensee plans to include instructions for the instruments in the kit. The instruments were found to be operable, in calibration (tagged) and calibrations of the instruments were verified in plant records. The Emergency Control Center(s) described in Section F, Page III-8, of the Emergency Plan were found to be as described. The communications systems were as described in Section A, Page III-1, of the Emergency Plan except that the VHF radio system was not completely operational at the time of the inspection. The final installation of certain equipment at the Eureka Service Center and at the plant was being performed at the time of the inspection. In addition to the described communications equipment, the licensee has four radiopaging devices which are used by the plant superintendent and other personnel who are on call. No changes in emergency equipment and facilities were identified.

(2) Instruments for Monitoring Release of Radioactivity

The equipment described in Section III, D., "Plant Radiological Instrumentation and Equipment," of the Emergency Plan includes the area monitors, process monitors, portable survey and dose rate instrumentation, counting room instruments and miscellaneous

equipment which includes portable air sampling equipment was found to be as described. An examination of the records of maintenance and calibration verified that the equipment had been maintained and calibrated as required by the licensee's procedures.

The multichannel analyzer in the laboratory was inoperable at the start of the inspection but had been returned to service by the end of the on-site inspection. No changes in the emergency instrumentation from that specified in the Emergency Plan was identified.

(3) Medical Treatment Facilities

On-site facilities are limited to first aid kits, stretchers and blankets. The first aid kits (4) in the nuclear portion of the plant are not the standard PG&E first aid kits in that the Band Aids and mercurochrome have been removed. This is done to assure that minor injuries which occur in a possibly contaminated environment are brought to the attention of management and receive appropriate treatment. Existence and inventory of first aid supplies was verified.

Transportation of injured personnel to off-site medical facilities is assured by several plant vehicles and a continuing agreement between the licensee and a local ambulance service. The licensee has arranged for a panel of local physicians who have agreed to provide medical care for company employees. Visits to the two local hospitals confirmed the licensee's agreements with these facilities, the licensee's continuing coordination and cooperation, and the hospital's willingness to accept possibly contaminated patients under the terms of the agreements. No changes in the medical treatment facilities or agreements described in the Emergency Plan were identified.

(4) Training of Personnel

a. Fire Protection

The training in this area more than satisfies the requirements described in Paragraph A.1 of the Emergency Plan. The inspector observed a training session for plant personnel which included lecture, demonstration and use by plant personnel of dry chemical, CO₂, water fog and solid stream against wood and oil-solvent fires. The training was provided by Humboldt No. 1 Fire Protection District personnel and involved the use of equipment from the Fire Protection

District trucks which responded to the plant, as well as plant equipment and plant fire system pumps and hoses. Of particular interest was the use of fog nozzles both from the Fire Protection District trucks and the fog-solid stream nozzles used in the plant. The last such training was in October 1974. Training between the equipment drills has consisted of monthly lectures and films. Rosters of attendees are maintained.

b. First Aid Training

Nonshift workers receive four first aid and two CPR classes (two hours each) per year. Training is provided by a member of the licensee's on-site staff. Shift workers complete a written test on first aid every two months which is based on the PG&E safety manual. A copy of the manual is provided to each employee. A minimum passing grade of 70 percent is required.

c. Radiation Protection Training

Basic radiation protection training is provided various groups of workers as a part of the initial training program. Currently, licensed operator requalification training is being conducted which includes a four-hour lecture on radiation protection.

d. Emergency Procedure and Radiological Monitoring Training

The licensee has not completed the Emergency Procedures, and training will begin in these areas after the procedures are in effect. The licensee is committed to a December 31, 1975 date for completion of these procedures.

e. Implementing Procedures

The Emergency Procedures which will implement the Emergency Plan are in preparation. The licensee is committed to a December 31, 1975 completion date. Certain procedures which relate to the Emergency Plan are in effect, however, these procedures are not specific to the Emergency Plan alone. The procedures in this category include the following:

<u>Procedure No.</u>	<u>Subject</u>
J-6	Fire Protection, Equipment Description and Operating Instructions
J-7	Area Radiation Monitoring System, Equipment Description and Operating Instructions

<u>Procedure No.</u>	<u>Subject</u>
J-8	Refueling Building Isolation Monitoring System, Equipment Description and Operating Instructions
J-9	Liquid Process Radiation Monitoring System, Equipment Description and Operating Instructions
J-10	Off-Gas Monitoring System, Equipment Description and Operating Instructions
J-11	Stack Gas Radiation Monitoring System, Equipment Description and Operating Instructions
J-12	Discharge Canal Sampling Station, Equipment Description and Operating Instructions
J-13	Meteorological Equipment Description
J-14	Code Call and Emergency Communication System Call List
J-15	Emergency Communication System Description and Operation

C. Emergency Planning - Tests and Drills

Section VI.C, "Drills," of the Emergency Plan specifies the frequency of tests and drills. In the absence of Emergency Procedures and with the reorganization of the Emergency Plan, the licensee has not conducted emergency drills during 1975. The licensee plans to conduct one or more emergency drills before the end of the year. The radio communication network had not been checked in its entirety since the system was not complete at the time of the inspection. Records of previous emergency drills during 1974 were examined which verified that two drills were performed in that year.

5. Radiation Protection

A. Training

Training records of the two most recently assigned Radiation and Process Monitors (RPM) were examined (reference IE Inspection Report No. 50-133/75-04, Paragraph 4.A). One of these individuals is scheduled to complete his 18 month training program in November 1975. The records disclosed that there had been no entries in the "On-the-Job" (OJT) training record for this individual since July 1974. OJT is defined by the licensee as training obtained while observing or working under the supervision of the RPM foreman or the Chemical and Radiation

Protection Engineer (CRPE). It was also noted that the academic training of this individual was behind schedule. The licensee reported that this training had been delayed in order to combine the training program "Radiation Monitor Training Course" for the two most recently assigned individuals to provide for more efficient utilization of the instructor's time. The licensee was informed that training of these individuals would be examined during a subsequent inspection.

B. Retraining

The licensee stated that RPM personnel due for retraining will participate on a selective basis in the "Radiation Monitor Training Course" being held for the most recently assigned individuals. The retraining will be in respect to the reissued "Radiation Control Standards" and "Radiation Control Procedures."

C. Unusual Occurrences

The licensee's representative stated that there had been no unusual occurrences, exposures or releases since the last inspection (IE Inspection Report No. 50-133/75-04) with the exception of the exposures and proposed corrective actions reported in the licensee's letter of August 8, 1975. Discussion with licensee personnel and examination of records verified the exposures to be as reported in the licensee's letter. The exposures were to three PG&E employees working for General Construction on the Augmented Off-Gas Facility. The plant operations staff requested three individuals from General Construction for work in the controlled area. As a result of a misunderstanding between the CRPE and RPM's, it was believed that Forms NRC-4 had been completed on the three individuals when, in fact, this had not been accomplished. The individuals worked in the lower dry well on the dry well cooler coil replacement. As a result, the three received exposures in excess of the limit of 1.25 rem per quarter as shown below:

<u>Individual</u>	<u>Badge Period</u>	<u>Exposure (Total)</u> <u>REM</u>	<u>NRC-4 Completed</u>
A	4/22 - 5/15/75	0.080	
	5/15 - 6/10/75	0.110	
	6/10 - 7/1/75	2.200	
	7/3 - 7/14/75	0.030 (2.420)	7/11/75
B	6/30 - 7/2/75	2.600 (2.600)	7/8/75
C	7/2 - 7/7/75	3.000	7/8/75
	7/7 - 7/7/75	0.000 (3.000)	

Individuals A, B and C are identified in Attachment A to this report. The licensee's film badge quarter (second) is from April 15 to July 14.

None of the individuals involved had received previous exposure. To prevent recurrence, the licensee established a file of "Visitor Film Badge Log Sheet(s)" at the access control point where film badges are issued. The log identifies the visitor, provides necessary information concerning the visitor and specifies dose limitation and training information. At the time of the inspection, this log was in use and was available to RPM's issuing film badges. The revised procedure for issuance of visitor badges (all personnel other than plant staff) had been reviewed with the radiation protection staff.

D. Materials Inventory

The licensee's records of inventory of licensed materials authorized by Conditions B-3 and B-4 of the license were examined including records of leak tests. The records verified that the inventory was within authorized limits and that leak tests had been performed as required.

6. Radiation Waste Systems

A. Confirmatory Measurements

Samples of liquid rad waste and off-gas were collected and with licensee collected particulate and halogen samples were sent to the NRC laboratory for analysis. The licensee's representatives agreed to submit the results of the plant staff analysis of the samples within 30 days. The comparison of the results of the analyses will be contained in a subsequent report.

B. Unevaluated Release Paths

The inspector discussed a possible unevaluated liquid release path which had been identified at several other facilities, i.e., unmonitored or unsampled blow down of clean heating steam condensate from the rad waste evaporator. At other facilities contamination of the clean condensate resulted from a heating coil leak. An examination of available drawings and a tour of the facility indicated that the clean condensate is discharged to a yard drain which leads to the plant discharge canal. A proportional sampler is operational on the discharge canal.