

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

Report No. 50-275/81-08
50-323/81-08

License No. 50-275, 50-323 Priority CPFR39, CPFR69 Category _____

Licensee: Pacific Gas and Electric Company
P. O. Box 7442
San Francisco, California 94106

Facility Name: Diablo Canyon Units 1 & 2

Inspection at: Diablo Canyon Site, San Luis Obispo County, California

Inspection conducted: April 1-30, 1981

Inspectors: *Mario Bagaglio Jr.* 5/5/81
Mario Bagaglio, Jr., Senior Resident Reactor Inspector Date Signed

Marvin Mendonca 5/5/81
Marvin Mendonca, Resident Reactor Inspector Date Signed

Approved by: *D. M. Sternberg* _____ Date Signed
D. M. Sternberg, Chief, Reactor Projects Section 1 Date Signed
Division of Resident Reactor Projects

Summary:

Inspection of April 1-30, 1981 (Report Nos. 50-275/81-08 & 50-323/81-08)

Areas Inspected: Routine inspection of plant tours, procedure reviews, fuel loading prerequisites, bulletin/circular followups, preoperational test results, followup of outstanding items, fire prevention/protection, fuel storage and security, and operating staff training. This inspection involved 110 inspector-hours onsite by two NRC resident inspectors.

Results: No items of noncompliance or deviations were identified.

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DETAILS

1. Persons Contacted

- *R. Thornberry, Plant Manager
- *R. Patterson, Plant Superintendent
- *J. S. Diamonon, QC Supervisor
- *J. M. Gislson, Power Plant Engineer
- *D. A. Backens, Supervisor of Maintenance
- *J. A. Sexton, Supervisor of Operations
- *R. R. Smith, Security Shift Supervisor
- *J. V. Boots, Supervisor of Chemistry and Radiation Protection
- *R. T. Twiddy, Supervisor of Quality Assurance

The inspectors also talked with and interviewed a number of other licensee employees including members of general construction, the operations staff and QA personnel.

*Denotes those attending the exit interview.

2. Plant Tour

The inspectors walked through various areas of the plant on a weekly basis to observe activities in progress; to inspect fuel storage security; to inspect the general state of cleanliness, housekeeping and adherence to fire protection rules; to check the proper approval of "man on the line, caution and clearance" tags on equipment, and to review with operation personnel the status of various systems in the plant.

The inspectors noted that the status of the systems and the housekeeping appeared consistent with construction activities. The reactor cavity is still being maintained as a clean area. Cleanliness and housekeeping of the plant is still improving.

No items of noncompliance or deviations were identified.

3. Procedure Review

An inspector reviewed the following new or revised procedures:

- | | |
|-------------------|---|
| STP I-4B3 | Determination of Source Range Detector Characteristic Curves |
| STP P-6B | Routine Surveillance Test of Steam Driven Auxiliary Feed-water Pump |
| STP R-28 | Determination of Shutdown Flux Level |
| NPAP A-102 | General Authorities and Responsibilities of the Shift Foreman |
| NPAP A-102 Supp 1 | Assignment of Shift Administrative Duties |
| NPAP A-101 Supp 1 | Relieving the Watch |

No items of noncompliance or deviations were identified.



4. Fuel Load (FL) Prerequisites

The following Task Action Plan (TAP) items were reviewed during the course of this inspection:

- a. TAP I.B.1.2 - Evaluation of Organization and Management Improvements of OL Applicants (FL requirement).

Summary:

The criteria for utility management required establishment of a training manager in the plant organization and an administrative training staff at the corporate level.

Findings and Conclusions:

The applicant has elected to maintain decentralized training at the site. Basically, the individual departments at the site will be responsible for conducting their individual training and providing supplementary general training for the entire site as necessary. The applicant will also have provision at the site for monitoring training that has been given and formulating that training which must be completed. The responsibility for maintaining training records will come under the cognizance of the Technical Assistant to the Plant Manager.

At the corporate level training will be coordinated by the Technical Assistant to the Vice President - Nuclear Power Generation. The applicant has elected to coordinate the site training program from the corporate office, an acceptable option. Based upon review of the revised job description of the Senior Nuclear Generation Engineer (Training) Nuclear Plant Operations, clear guidelines now exist that define the scope of this individual's assignment. Specifically, the areas cited in ANSI/ANS 18.1 (1971) (Selection and Training of Nuclear Power Plant Personnel) are now under the coordination of the Training Engineer. Accordingly, the training organization is considered satisfactory utilizing the criteria for utility management guidelines. Since final evaluation of the training organization was the last open item under I.B.1.2., this TAP is considered satisfied and closed.

- b. TAP I.A.1.2 - Shift Supervisor Administrative Duties (FL requirement).
TAP I.C.3 - Shift Supervisor Responsibilities (FL requirement).

Summary:

Review the administrative duties of the shift supervisor and delegate functions that detract from or are subordinate to the management responsibility for assuring safe operation of the plant to other personnel not on duty in the control room.

Issue a corporate management directive that clearly established the command duties of the shift supervisor and emphasized the primary management



responsibility for safe operation of the plant. Revise plant procedures to clearly define the duties, responsibilities and authority of the shift supervisor and the control room operators.

Findings and Conclusions:

During inspection 50-275/81-02 an inspector reviewed the management directive to the Shift Foreman and the administrative directive (NPAP A-102) delineating the Shift Foreman's duties and responsibilities. The management directive was evaluated as satisfactory but NPAP A-102 needed revision. Accordingly, the applicant has revised NPAP A-102 and issued a site specific supplement to NPAP A-102 detailing shift administrative duties and assigning responsibility for their completion. An inspector has reviewed both NPAP A-102 and its supplement and has found them satisfactory to meet the requirements of both TAP's I.A.1.2. and I.C.3. Accordingly, TAP's I.A.1.2. and I.C.3. are considered closed.

c. TAP II.E.4.1 - Dedicated Hydrogen Penetrations (FL requirement).

Summary:

Plants using external recombiners or purge systems for postaccident combustible gas control of the containment atmosphere should provide containment penetration systems for external recombiner or purge systems that are dedicated to that service only, that meet the redundancy and single-failure requirements of General Design Criteria 54 and 56 of Appendix A to 10 CFR 50, and that are sized to satisfy the flow requirements of the recombiner or purge system.

The procedures for the use of combustible gas control systems following an accident that results in a degraded core and release of radioactivity to the containment must be reviewed and revised, if necessary.

Findings and Conclusions:

The applicant has elected to install hydrogen recombiners inside containment. The applicant has completed the internal recombiner installation and pre-operational testing. This effort by the applicant meets the requirement for installation by 7/1/81.

The applicant is now in the process of writing and/or revising operating procedures for the use of the internal recombiners. Pending issuance of operating procedures for the internal recombiners this TAP will remain open.

d. TAP II.G.1 - Emergency Power for Pressurizer Equipment (FL requirement)

Summary:

Consistent with satisfying the requirements of General Design Criteria 10, 14, 15, 17, and 20 of Appendix A to 10 CFR Part 50 for the event of loss-of-offsite power, the following positions shall be implemented:



Power Supply for Pressurizer Relief and Block Valves and Pressurizer Level Indicators

- (1) Motive and control components of the power-operated relief valves (PORVs) shall be capable of being supplied from either the offsite power source or the emergency power source when the offsite power is not available.
- (2) Motive and control components associated with the PORV block valves shall be capable of being supplied from either the offsite power source or the emergency power source when the offsite power is not available.
- (3) Motive and control power connections to the emergency buses for the PORVs and their associated block valves shall be through devices that have been qualified in accordance with safety-grade requirements.
- (4) The pressurizer level indication instrument channels shall be powered from the vital instrument buses. The buses shall have the capability of being supplied from either the offsite power source or the emergency power source when offsite power is not available.

Findings and Conclusions:

- (1) Each PORV is controlled by a solenoid-operated air valve which is energized-to-open, spring-to-close. The circuits to the solenoid valves are supplied with power from the emergency station batteries (125 v DC). The PORV's are air-to-open, fail-closed valves. They are normally supplied by the plant air compressors with 80 psi air. Two of the three valves have a backup supply from the nitrogen system to function on loss of air, and Class I high pressure accumulators which have sufficient capability to operate each valve 120 times after the loss of both air and nitrogen. The applicant currently is in the process of preoperationally testing the N₂ system for PCV-455C and PCV-456.
- (2) The PORV block valves are powered from ESF buses which are served by either offsite power or the emergency diesel generators. Each of the three valves is powered from a separate 480 volt ESF bus (Bus Sections 1F, 1G and 1H).
- (3) The motive and control power connections for the PORV block valves are made with equipment qualified to safety-grade requirements. The motive power for the PORV's is air or nitrogen (see 1 above). The piping, accumulators, control power connections, and the solenoid valves are qualified in accordance with safety-grade requirements.
- (4) The pressurizer level indication circuits are safety-grade and post-accident qualified. AC power for all Class IE instrument



channels is supplied from inverters which are supplied from the ESF buses with automatic backup from the emergency batteries.

Pending completion of satisfactory preoperational testing on the backup N₂ system cited above this TAP will remain open.

e. TAP I.C.2 - Shift Relief and Turnover Procedures (FL requirement)

Summary: The licensees shall review and revise as necessary the plant procedure for shift and relief turnover to assure the following:

- (1) A checklist shall be provided for the oncoming and offgoing control room operators and the oncoming shift supervisor to complete and sign.
- (2) Checklists or logs shall be provided for completion by the offgoing and oncoming auxiliary operators and technicians. Such checklists or logs shall include any equipment under maintenance or test that by themselves could degrade a system critical to the prevention and mitigation of operational transients and accidents or initiate an operational transient (what to check and criteria for acceptable status shall be included on the checklist); and
- (3) A system shall be established to evaluate the effectiveness of the shift and relief turnover procedure (for example, periodic independent verification of system alignments).

Findings and Conclusions:

During a previous inspection (50-275/81-02) an inspector verified partial compliance with the Summary cited above. The applicant has since revised NPAP A-101 Supplement 1, Relieving the Watch. The revised procedure provides direction on use of the Auxiliary Operator's Log at shift turnover and now includes provision for independent system alignment verification by the Shift Engineer evaluating the shift turnover procedure. Based upon changes made to NPAP A-101 Supplement 1, the applicant's administrative procedure for shift turnover meets TAP I.C.2. requirements and this TAP is closed.

No items of noncompliance or deviations were identified.

5. IE Bulletin/Circular Followup

An inspector reviewed licensee actions related to IE Bulletins and Circulars. Inspection findings relating to the Bulletins and Circulars reviewed were as follows:

IE Circular 80-05, Emergency Diesel-Generator Lubricating Oil Addition and Onsite Supply (closed): The licensee has now completed lube oil consumption



testing on the 3 diesel generator units that will be used to support Unit 1 operation. Accordingly, this Circular is closed.

No items of noncompliance or deviations were identified.

6. Preoperational Test Results

An inspector has reviewed the following preoperational tests for adequate documentation, satisfactory use of measuring instrumentation, and the results meeting the prescribed acceptance criteria:

<u>Procedure</u>	<u>Title</u>
12.2 Addendum 2	Containment Spray System Preop Test
18.11	Fire Damper Alarms
21.3 Addendum 3	Diesel Engine Air Systems Compressors Preoperational Tests and Air Blow
21.4 Addendum 5	Diesel Generator Preop Test
23.2 Addendum 2	Ventilation - Area H. Elevations 100', 115', 128', and 165'
23.10 Addendum 5	Containment Hydrogen Purge System
28.9 Addendum 1	Energizing of Nuclear Instrumentation Inverters and Vital Instrument AC Distribution Panels
33.1 Addendum 4	Containment Isolation and Spray Initiation
34.1	Fuel Transfer System Functional Test
35.1 Addendum 2	Reactor Protection System Time Response
35.3 Addendum 3	Safeguards Systems Operational Test
37.7 Addendum 2	Main Steam Isolation Valve Tests
37.20	Control Room Inaccessibility
37.27	Dedicated Shutdown Instrument Panel
39.4 Addendum 2.	Containment Structural Integrity and Integrated Leak Rate Test

No items of noncompliance or deviations were identified.

7. Follow-up of Outstanding Items

a. Motor Driven Auxiliary Feedwater (AFW) Pump Suction Gages (80-19-01, closed)

The Motor Driven AFW Pumps Suction Gages did not meet the ASME Section XI Paragraph IWP-4120 requirement with respect to the full scale range. The applicant has changed the subject gages and an inspector has verified their compliance with the aforementioned requirement. Accordingly, this item is closed.

b. Steam Driven AFW Pump Surveillance Test Procedure (STP) (80-23-01, closed)

Performance of the Steam Driven AFW Pump STP would have required ascension into Mode 1 prior to verifying pump operability in lower modes and would have violated the proposed Technical Specifications. The licensee has revised the subject STP to provide for its performance in Modes 2 and 3 in accordance with proposed Technical Specifications. Accordingly, this item is closed.



c. Maintenance Procedures (80-23-02, closed)

Some maintenance procedures reviewed did not include provision for documenting the criteria, specifications, and/or qualifications of measuring instruments used on safety-related equipment. Based upon discussions held with the applicant the licensee has committed to review existing maintenance procedures and add provisions to identify and document the measuring instruments used in maintenance procedures. Such documentation will either enumerate specific qualifications of the measuring instrumentation or provide sufficient identifying information that will allow independent evaluation of the measuring instrumentation apart from the maintenance procedure. Accordingly, this item is closed.

d. Operating and Emergency Procedures (80-16-02, open)

Four of the subject procedures cited in IE report 50-275/80-16 appeared to conflict with the applicant's proposed Technical Specifications (TS). An inspector has reviewed revised procedures OP L-4, Normal Operation at Power, and EP OP-16, Nuclear Instrumentation Malfunctions. Based upon this review, OP L-4 and EP OP-16 now comply with the proposed TS. Pending revision of EP OP-24, Loss of Containment Integrity, and EP M-6, Non-radiological Fire, to meet the proposed TS, this item will remain open.

No items of noncompliance or deviations were identified.

8. Fire Prevention/Protection

The control room and cable spreading room were inspected. The fire alarm, extinguishing equipment actuating controls and fire fighting equipment were verified to be operable in the cable spreading room and 25% of the balance of the plant.

The results of the latest fire inspections that were performed by the licensee and its consultant have been reviewed. An audit of potential fire hazards for vital areas found that corrective actions had been taken or planned.

No items of noncompliance or deviations were identified.

9. Operating Staff Training

The inspectors sat in on several training sessions being conducted for the operating staff. The training sessions included requalification for licensed operators, health physics training for instrument and control technicians, security training for various plant staff, and radiation protection training for plant management/supervisory personnel. The inspectors reviewed some of the lesson plans used during these lectures.

An inspector reviewed and discussed with a licensee representative the applicant's computerized training records system. The licensee is currently



instituting use of this system to track individual and group training needs and then formulate training schedules.

No items of noncompliance or deviations were identified.

10. New Fuel Storage Unit 1

The new fuel storage and security was inspected. The inspector verified that the integrity of the security controls were being maintained and adequate procedures were available and enforced. Environmental protection to control dust and debris, and to prevent fuel damage was being maintained. The inspection ascertained that the requirements of the special nuclear materials license was being met.

No items of noncompliance or deviations were identified.

11. Exit Interview

The inspectors met with a senior licensee representative on a weekly basis and with the representatives denoted in Paragraph 1 on May 1, 1981. The scope and findings of the inspection were summarized by the inspectors.

