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

REGION V

Report No. 50-275/81-02, 50-323/81-02

Docket No. 50-275, 50-323 License No. CPPR-39, CPPR-69

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

Facility Name: Diablo Canyon Units 1 & 2

Inspection at: Pacific Gas & Electric Corporate Offices, San Francisco, CA
Diablo Canyon Site, San Luis Obispo County, California

Inspection Conducted: January 20-21, 1981

Inspectors: D M Sternberg for — 2/22/81
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Approved by: D. Sternberg — 2/20/81
D. Sternberg, Chief — Date Signed
Reactor Project Section 1

Summary:

Inspection on January 20-21, 1981 (Report Nos. 50-275/81-02, 50-323/81-02)

This special announced inspection was a follow-up of the previous Evaluation of Licensee Organization and Management Improvements of Operating License Applicants, which was documented by Inspection Report 50-275/80-07//50-323/80-04, dated April 22, 1980. The contents of that report in conjunction with this report summarize the observations and conclusions of the NRC staff and document licensee committments related to NRC Task Action Plan Item (TAP) I.B.1.2. Other TAP items coincidentally addressed or closed out are referenced in the details of this report.

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Areas Inspected: This inspection involved 80 inspector hours in the areas of communications, training, shift crew procedures, control room access, onsite and offsite emergency support, onsite safety review group, licensee evaluation and dissemination of operating experience, shift technical advisor, low power test program, utility management for operations, and health physics technicians.

Results: Of the areas inspected, no items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

*E. Langley, Senior Vice President Operations
*J. Schuyler, Vice President Nuclear Power Generation
*J. Shiffer, Manager Nuclear Plant Operations
*J. Hoch, Manager Nuclear Projects
*W. Raymond, Manager Quality Assurance
*R. Thornberry, Plant Manager Diablo Canyon
*S. Skidmore, Technical Assistant to the Vice President
*M. Williamson, Senior Projects Licensing Engineer
*R. Kelmenson, Nuclear Projects
M. Norem, Resident Startup Engineer Diablo Canyon

Other licensee employees contacted included corporate management and support personnel and site technical support personnel.

*Denotes those attending the exit interview on January 21, 1981.

2. Communications (TAP III.A.3.3) (FL (fuel load) and FP (full power) requirement)

Position

Two direct dedicated telephone lines must be operative between the plant and the NRC.

Observations and Conclusions

The applicant currently has the dedicated line between the site and NRC Headquarters (Hotline or emergency notification system). Another dedicated NRC circuit, the health physics network is installed at the site and is operational. In addition to these lines, the applicant has a complex and versatile system of voice and data circuits utilizing both private (PG&E) telephone trunks and microwave circuits. This system can be used to establish additional circuits with the NRC as well as other necessary agencies during an accident situation. TAP III.A.3.3 is closed.

3. Training (TAP I.B.1.2((FL requirement)

Position

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

Observations 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. However, based upon review of the job description of the Senior Nuclear Generation Engineer (Training) Nuclear Plant Operations and an interview with the assigned individual, clear and concise guidelines do not exist that define the scope of this individual's assignment. Specifically, several of the areas cited in ANSI/ANS 18.1 (1971) (Selection and Training of Nuclear Power Plant Personnel) are not understood to be under the coordination of the Training Engineer. By phone conversation subsequent to the inspection of January 20-21, 1981, the staff made their evaluation of the Training Engineer's position known to the applicant. Accordingly, the applicant committed to rewrite the job description of the Training Engineer and assured the staff that the Training Engineer would be involved with coordination of all site training required to meet NRC requirements.

Pending resolution of the Training Engineer's duties TAP I.B.1.2 will remain open.

4. Shift Crew Procedures

a. Manning and Overtime (TAP I.A.1.3)(FL requirement)

Position: Each shift crew shall consist of senior licensed operators, licensed operators, and auxiliary operators as specified below any time a PWR is operating in Modes 1-4:

(a) A shift supervisor with a senior reactor operator's license, who is also a member of the station supervisory staff, shall be onsite at all times when at least one unit is loaded with fuel.

(b) In addition to a shift supervisor, a second licensed senior reactor operator (SRO) shall, at all times, be in the control room from which a reactor is being operated. The shift supervisor may from time-to-time act as relief operator for the licensed senior reactor operator assigned to the control room.

(c) For any station with more than one reactor containing fuel, the number of licensed senior reactor operators onsite shall, at all times, be at least one more than the number of control rooms from which the reactors are being operated.

(d) In addition to the licensed senior reactor operators specified in a., b., and c. above, for each reactor containing fuel, a licensed reactor operator (RO) shall be in the control room at all times.

(e) In addition to the operators specified in a., b., c., and d. above, for each control room from which a reactor is being operated, an additional licensed reactor operator (RO) shall be onsite at all times and available to serve as relief operator for that control room. As noted above, this individual may serve as relief operator for each unit being operated from that control room, provided he holds a current license for each such unit.

(f) Auxiliary (non-licensed) operators shall be properly qualified to support the unit to which assigned.

(g) In addition to the staffing requirements stated above, shift crew assignments during periods of core alterations shall include a licensed senior reactor operator (SRO) to directly supervise the core alterations. This licensed senior reactor operator may have fuel handling duties but shall not have other concurrent operational duties.

Observations and Conclusions: Based upon discussion with the licensee, PG&E will meet the shift staffing enumerated above. In addition the licensee committed to revise NPAP A-104 (Shift and Control Room Manning Requirements) prior to fuel load to reflect the requirements cited in the position statement. Accordingly, since the applicant will meet the upgraded shift staffing for issuance of a low-power operating license for Unit 1, this portion of TAP I.A.1.3 is satisfied with respect to manning requirements.

Position: Administrative procedures shall also set forth a policy concerning overtime work for the licensed shift personnel. These procedures shall stipulate that overtime shall not be routinely scheduled to compensate for an inadequate number of personnel to meet the shift crew staffing requirements stated above. In the event that overtime must be used, due to unanticipated or unavoidable circumstances, the following overtime restrictions shall be followed:

(1) An individual should not be permitted to work more than 12 hours straight (not including shift turnover time).

(2) There should be at least a 12-hour break between all work periods (shift turnover time is included in this 12-hour break).

(3) An individual should not work more than 72 hours in any 7-day period.

(4) An individual should not be required to work more than 14 consecutive days without having two consecutive days off.

However, for those circumstances which arise requiring deviation from the above, such deviation may be authorized by the plant manager or high levels of management in accordance with established procedures and with appropriate documentation of the cause.

Observations and Conclusions: The applicant has generated NPAP A-8 (Overtime and Emergency Relief Restrictions) which complies with the above requirements. Based upon review of NPAP A-8 by an inspector, this portion of TAP I.A.1.3. is satisfied with respect to overtime limitations.

Based upon the findings regarding shift staffing and overtime restrictions cited above TAP I.A.1.3 is satisfied and closed.

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

Position: 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 mitigationn 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).

Observations and Conclusions: An inspector reviewed NPAP A-101 and NPAP A-101 Supplement 1 (Relieving the Watch (Shift Turnover)). Turnover procedures and checklists have been created for the shift foreman, reactor control operators, and chemistry and radiation protection technicians. The inspector observed that the applicant had not generated a watch relief turnover checklist or prescribed the use of operating logs for watch relief turnover for auxiliary operators. In addition the procedural methods to evaluate the effectiveness of the watch relief turnover system does not meet specific requirements delineated by TAP I.C.2. Accordingly, this TAP will remain open pending revision of the above procedures as committed to by the applicant.

C. Shift Supervisor Responsibilities (TAP I.C.3)(FL requirement)

Position: The highest level of corporate management of each licensee shall issue and periodically reissue a management directive that emphasizes the primary management responsibility of the Shift Supervisor for safe operation of the plant under all conditions on his shift and that clearly establishes his command duties. In addition, plant procedures shall be reviewed to assure that the duties, responsibilities and authority of the Shift Supervisor and control room operators are properly defined to effect the establishment of a definite line of command and clear delineation of the command decision authority of the shift supervisor in the control room relative to other plant management personnel.

Administrative procedures shall be in effect which substantially relieve the Shift Supervisor of routine administrative duties. Administrative functions that detract from or are subordinate to the Shift Supervisor's management responsibility for the safe operation of the plant are to be delegated to other personnel.

Observations and Conclusions: By letter dated January 14, 1981, to all Shift Foremen from Mr. J. O. Schuyler, Vice President - Nuclear Power Generation, the policy of the applicant's corporate management was delineated regarding primary responsibilities of the Shift Foreman. This letter directed that all Shift Foremen specifically must also "...familiarize themselves with, and carry out, the provisions of (NPAP A-102 (General Authorities and Responsibilities of the Shift Foreman))".

An inspector has reviewed NPAP A-102 and NPAP A-100 (General Authorities and Responsibilities of Nuclear Plant Operators). Both procedures provide specific guidance regarding the responsibilities and behavior of the individuals tasked with the safe operation of the plant.

The applicant is currently hiring additional personnel to serve in the capacity of Shift Clerk. This position will perform administrative functions that traditionally had been assigned to the Shift Foreman. This effort will free the Shift Foremen even more to concentrate on the operation of the facility. After hiring the additional personnel to man the Shift Clerk's position, the applicant will delineate by directive those traditional duties that will be excluded from performance by the on-shift Shift Foreman. Accordingly, TAP I.C.3 will remain open pending generation of the directive relieving the Shift Foreman of specific duties.

5. Control Room Access (TAP I.C.4)(FL requirement)

Position: The licensee shall make provisions for limiting access to the control room to those individuals responsible for the direct operation of the nuclear power plant (e.g., operations supervisor, shift supervisor, and control room operators), to technical advisors who may be requested or required to support the operation, and to predesignated NRC personnel.

Observations and Conclusions: The applicant has generated NPAP A-103 (Control Room Access). An inspector has reviewed NPAP A-103 for conformance with the requirements cited in the Position. NPAP A-103 meets the requirements cited above and TAP I.C.4 is considered satisfied and closed.

6. Onsite and Offsite Emergency Support

a. Support of Onsite Staff (TAP I.B.1.2)(FL requirement)

Position: The utility-owner shall have available (both onsite and offsite) the necessary management and technical resources to support the onsite staff in the event of an accident. These resources may be provided from the utility-owner's staff or through contractual arrangements with other organizations.

Observations and Conclusions: As a result of increased staffing both at the corporate office and at the site, the applicant has upgraded the management and technical resources to support the onsite staff in the event of an accident. In addition the applicant has now generated implementing procedures that compliment both the corporate and site emergency plans. Both at the site and at the corporate office level formal training schedules have been generated that will dictate the required emergency training for the applicant's personnel. At the site, the licensee has committed to complete this training prior to fuel load. At the corporate level this training will be completed by June 1981. In addition to the increased manning and formal training program, PG&E has

recently signed a letter of intent to pool technical resources, in the event of an accident, with the Sacramento Municipal Utility District (Rancho Seco) and Southern California Edison/San Diego Gas and Electric (San Onofre). Based upon the licensee's upgraded staffing, commitment to complete formal emergency plan training, and effort to pool resources with other utilities, this portion of TAP I.B.1.2 is considered satisfied and closed.

b. Upgrade Emergency Support Facilities (TAP III.A.1.2)(FL requirement)

Position: Each operating nuclear power plant shall maintain an onsite technical support center (TSC) separate from and in close proximity to the control room that has the capability to display and transmit plant status to those individuals who are knowledgeable of and responsible for engineering and management support of reactor operations in the event of an accident. The center shall be habitable to the same degree as the control room for postulated accident conditions. The licensee shall revise his emergency plans as necessary to incorporate the role and location of the technical support center. Records that pertain to the as-built conditions and layout of structures, systems and components shall be readily available to personnel in the TSC.

Observations and Conclusions: During the course of the inspection conducted in March 1980 (50-275/80-07 and 50-323/80-04) the staff concluded that the proposed Temporary On-site Technical Support Center (OSTSC) was satisfactory for low power testing. Since the March 1980 inspection, the applicant has generated EP GA-7 (Emergency Procedure-General Appendix: Activation of the Temporary On-site Technical Support Center). An inspector has reviewed EP GA-7 for content and adequacy. Based upon this review, the staff has concluded that the applicant has a satisfactory directive that governs activation and utilization of the Temporary OSTSC. Accordingly, this portion of the TAP III.A.1.2 is closed.

Position: An area to be designated as the onsite operational support center shall be established. It shall be separate from the control room and shall be the place to which the operations support personnel will report in an emergency situation. Communications with the control room shall be provided. The emergency plan shall be revised to reflect the existence of the center and to establish the methods and lines of communication and management.

Observations and Conclusions: During the course of the inspection conducted in March 1980 (50-275/80-07 and 50-323/80-04) the staff concluded that the proposed On-site Operational Support Center (OSC) was satisfactory for low power testing. Since the March 1980 inspection, the applicant has generated EP GA-9 (Emergency Procedure - General Appendix: Activation of the Operational Support Center).

An inspector has reviewed EP GA-9 for content and adequacy. Based upon this review, the staff has concluded that the applicant has a satisfactory directive that governs activation and utilization of the OSC. Accordingly, this portion of the TAP is considered satisfied.

For the purposes of TAP I.B.1.2 management and organizational adequacy of onsite and offsite Emergency Support, TAP III.A.1.2 is closed. However, the intent of this inspection was not to cover each item in TAP III.A.1.2. Accordingly this TAP remains open pending review by NRR EPLB.

7. Onsite Safety Review Group (TAP I.B.1.2)(FL requirement)

Position: Assure that an independent, onsite safety review group (OSRG) exists. Consider the interaction of the independent safety review group with other committees/groups already established to oversee certain plant operational aspects to assure the effectiveness of the group and to avoid duplication of review efforts. Consider the characteristics of the independent safety review group: number of people, areas of expertise, competence, assigned scope of work, organizational relationships, authority, and reporting requirements.

Observations and Conclusions: The inspection team verified conformance to the NRC position by an examination of the applicant's Nuclear Power Generation Department administrative procedure W-650 Rev. 0., "Onsite Safety Review Group" and by discussion with management personnel. Based upon this examination and discussion, the NRC staff concluded that the OSRG will have sufficient functional independence from the line organizations, and will satisfy the requirements of the NRC position statement. The applicant's representatives stated that the OSRG will begin operating approximately 30 days prior to the date of the operating license. Since the personnel who compose the OSRG have other principle full time duties, they will be onsite and familiar with the project when the group begins its meetings. At the time of the inspection the OSRG was one member short, which still allows for one more than the minimum number of members. The applicant's representatives also stated that new personnel will be rotated to the OSRG about every two years. For the purposes of TAP I.B.1.2 this item is closed.

8.a. Licensee Evaluation/Dissemination of Operating Experience (TAP I.C.5) (FL Requirement)

Position: Each utility shall carry out an operating experience assessment function that will involve utility personnel having collective competence in all areas important to plant safety. In connection with this assessment function, it is important that procedures exist to assure that important information on operating experience originating both within and outside the organization is continually provided to operators and other personnel and that it is incorporated into plant operating procedures and training and retraining programs.

Observations and Conclusions: In response to this TAP the applicant has generated an administrative procedure NPAP W-100 (Dissemination of Operating Experience). An inspector has reviewed NPAP W-100. This procedure provides in detail the applicants organization for reviewing and disseminating operating experience at both the corporate office and site levels. However based upon review and after discussion with the applicant, the staff has concluded that either NPAP W-100 be revised or additional directives be generated that assure operating experience is disseminated to the entire plant staff, as appropriate. In addition the applicant needs to provide positive means that ensure that operating experience is incorporated into both the training and requalification training programs. Pending revision of NPAP W-100 and satisfactory review prior to fuel loading, TAP I.C.5 will remain open.

b. Verify Correct Performance of Operating Activities (TAP I.C.6)(FL requirement)

Position: It is required that licensees' procedures be reviewed and revised, as necessary, to assure that an effective system of verifying the correct performance of operating activities is provided as a means of reducing human errors and improving the quality of normal operations. This will reduce the frequency of occurrence of situations that could result in or contribute to accidents. Such a verification system may include automatic system status monitoring, human verification of operations and maintenance activities independent of the people performing the activity or both.

Observations and Conclusions: Based on discussions with the applicant's management, the staff determined that the applicant has previously completed a partial review of procedures to assure the correct performance of operating activities. However, based upon the scope of this TAP, the applicant is aware that either additional procedural review plus revision or promulgation of an encompassing directive is required that will enhance the proper performance of operating activities. Accordingly, the applicant has committed to provide administrative direction to the plant staff to satisfy this TAP. Pending issuance of the aforementioned directive and satisfactory review by IE prior to fuel load, TAP I.C.6 will remain open.

9. Shift Technical Advisor (TAP I.A.1.1)(FL requirement)

Position: Each licensee shall provide an on-shift technical advisor to the shift supervisor. The shift technical advisor (STA) may serve more than one unit at a multiunit site if qualified to perform the advisor function for the various units.

The STA shall have a bachelor's degree or equivalent in a scientific or engineering discipline and have received specific training in the response and analysis of the plant for transients and accidents. The STA shall also receive training in plant design and layout, including the capabilities of instrumentation and controls in the control room. The licensee shall assign normal duties to the STAs that pertain to the engineering aspects of assuring safe operations of the plant, including the review and evaluation of operating experience.

Observations and Conclusions: The applicant currently has at least five individuals on site designated as Shift Technical Advisors. Of these five, four have completed an extensive six month training program covering topics in reactor theory, reactor kinetics, core physics, heat transfer, fluid flow, thermodynamics, plant systems, two weeks at the Zion simulator, health physics, plant chemistry, accident analysis and nuclear design. The STA's are graduate engineers.

Due to personnel turnover 3 of the original 6 STA's have left the site. Two new STA candidates are in training at this time. The applicant also intends to eventually have the STA's obtain NRC operator licenses although not a requirement for this position. The applicant has further defined the specific duties and responsibilities of the STA in the Nuclear Power Generating Department Manual. The STA will advise the Shift Foreman in his capacity as a member of the operating crew and will report functionally and administratively to the Operations Engineering Senior Power Production Engineer.

Based upon the applicants implementation of the STA and integration of this individual into the operating shift crew TAP I.A.1.1 is considered closed.

10. Low Power Test Program

Position: The NRC staff has established five criteria for the Low Power Test Program. Criterion 2 requires that tests performed should provide supplemental operator training.

Observations and Conclusions: The applicant has committed to perform low power tests for each shift crew as specified by Criterion 2. Accordingly this item is considered closed.

11. Utility Management for Operations (TAP I.B.1.2)(FL requirement)

Position: A review was conducted of the corporate and site management organization of the Pacific Gas and Electric Company to evaluate the capability of the company to control and provide support for the safe operation of the Diablo Canyon Power Plant. As guidelines for this evaluation, the staff used the draft criteria for utility management and technical competence developed by the NRR staff.

Observations and Conclusions: Since conducting the management inspection in March 1980 (50-275/80-07 and 50-323/80-04), the individuals cited as prospectively filling the positions of Vice President-Nuclear Power Generation, Manager Nuclear Plant Operations, Manager Nuclear Projects, and Manager Quality Assurance have now held these assignments for 10 months. Based upon day-to-day interfacing between the staff and these individuals plus a detailed briefing by each of his responsibilities during the course of this inspection, the staff concludes that the corporate organization of PG&E is satisfactory.

Since the March inspection, the plant staff organization has likewise been reorganized. In addition to the site reorganization, the position of Plant Manager has been assigned to Mr. Robert C. Thornberry as a result of the death of Mr. Raymond Ramsay in September 1980. Again based upon day-to-day interfacing between the staff and the applicant's personnel onsite plus an ongoing evaluation of the plant staff by the resident inspectors, the staff concludes that the plant staff organization is satisfactory. In addition the staff has reviewed the qualifications of Mr. Thornberry and find them acceptable for his assignment as the Plant Manager.

Since Diablo Canyon will be the first Pressurized Water Reactor (PWR) to be started up by PG&E, the staff has required that the applicant commit to augment the existing plant staff with personnel having experience in the operation of large PWR's. Accordingly, the applicant has contracted with the NSSS to provide not only personnel with operating experience but also individuals with expertise in several highly specialized disciplines that will be used during plant testing.

Based upon the licensee's demonstrated commitment to a management organization and to augmentation of the plant staff during the startup phase of plant operation this portion of TAP I.B.1.2 is satisfied.

12. Resident Inspector (TAP I.B.2.2)

This item is closed.

13. Health Physics Technicians (TAP I.B.1.2)(FL requirement)

Position: There shall be a radiation protection technician onsite at all times when there is fuel in one or more reactors.

In addition, the Criteria for Utility Management and Technical Competence require that HP technicians be qualified in accordance with ANSI/ANS 18.1.

Observations and Conclusions: The applicant has committed to man each shift crew with at least one Health Physics Technician. Based upon current manning levels at the site, the applicant has nine individuals that meet the requirements of ANSI/ANS 18.1. In addition the applicant is requiring the nine individuals cited above to complete the licensee's training program prior to shift assignments. Based upon inspector review of these individuals qualification progress, the applicant will be able to meet their shift commitment by March 1, 1981. Accordingly this portion of TAP I.B.1.2 is considered satisfied.

14. Exit Interview

The inspection team met with the applicant's representatives (denoted in Paragraph 1) on January 21, 1981. The scope and findings of the inspection were summarized by the inspectors.