

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

PACIFIC GAS AND ELECTRIC COMPANY

DIABLO CANYON NUCLEAR POWER PLANT

REPORT NOS. 50-275/84-34 AND 50-323/84-22

ASSESSMENT PERIOD: JANUARY 1, 1983 THROUGH JUNE 30, 1984

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I. INTRODUCTION

1. Purpose and Overview

The Systematic Assessment of Licensee Performance (SALP) is an integrated NRC staff effort to collect available observations on an annual basis and evaluate licensee performance based on those observations with the objective of improving the NRC Regulatory Program and licensee performance.

The period of this assessment was January 1, 1983 through June 30, 1984. Evaluation criteria used during this assessment are discussed in Section III below. Each criterion was applied using the "Attributes for Assessment of Licensee Performance" contained in NRC Manual Chapter 0516.

2. SALP Board Meeting:

October 17, 1984, Region V Office

Board Members:

T. W. Bishop, Director, Division of Reactor Safety and Projects (Board Chairman)
D. F. Kirsch, Chief, Reactor Projects Branch
R. Dodds, Chief, Reactor Projects Section 3
M. D. Schuster, Chief, Physical Security Licensing and Emergency Preparedness Section
M. M. Mendonca, Senior Resident Inspector
P. J. Morrill, Senior Reactor Inspector
T. Polich, Resident Inspector
E. Garcia, Radiation Specialist
H. Schierling, NRR Project Manager
J. Crews, Senior Reactor Engineer
G. Knighton, Chief, Licensing Branch No. 3
F. Wenslawski, Chief, Radiological Safety Branch

3. Licensee Activities

a. Construction

At the beginning of the assessment period (January 1, 1983) a major modification program, was in progress for both units as a result of the design verification effort. The effort for this program was concentrated on the modifications in the following areas in the containment and auxiliary building for Unit 1 and the fuel handling building:

- Electrical Raceway Supports
- Piping Supports/Restraints
- Piping Changes
- Containment Spray Rings/Riser Supports
- Polar Crane
- Containment Annulus Structural Steel
- Fuel Handling Building Structural Steel
- Turbine Building Structural Modifications
- HVAC Duct Supports
- Instrumentation Equipment/Tubing Supports

The construction/modification program in Unit 1 was completed during the early fall of 1983.

The construction effort for accomplishing modifications in Unit 2 was increased during early 1983, with the initiation of modifications to the containment spray ring hangers and polar crane. These modifications were completed during this assessment period. Modifications to the following systems in the containment and auxiliary building for Unit 2, started during this period, were still in process at the end of this assessment period (June 30, 1984):

- Electrical Raceway Supports
- Piping Supports/Restraints
- Piping Changes
- HVAC Duct Supports

The construction in Unit 2 is presently scheduled for completion during the last quarter 1984.

b. Pre-operational Activities

Unit 1

Unit 1 pre-operational activities, performed during this SALP period, included preservice inspection of the reactor vessel, a velocity flush and chemical cleaning of the condensate and feedwater systems and hot system walkdowns.

Unit 2

Unit 2 pre-operational activities included preservice inspection of the reactor vessel, emergency core cooling system testing, and cold hydrostatic pressure testing of the reactor coolant system.

c. Operations

The Unit 1 fuel load license was issued on November 11, 1983; and fuel loading was conducted during November 15 - 20, 1983. In April 1984, the licensee was granted a license for power operations to 5% of rated power; initial criticality was on April 29, 1984, followed by low power testing through May 23, 1984.

Licensed operator examinations were administered by NRC in September 1983 and March 1984. Fifteen candidates in September, 1983 and all four candidates in March 1984 were granted licenses based on these examinations. In June 1983, six licensed personnel (20% of the existing total number of licensed personnel) were administered and passed an NRC requalification examination, and in July 1983, one RO was upgraded to a SRO. Additionally, in March 1984, control room advisors were brought onsite to supplement operating crews. While these advisors held reactor operator licenses at similar operating plants, they were provided specific training relative to Diablo Canyon.

Other major licensee activities conducted during this SALP period included 1) the third annual emergency response field exercise at Diablo Canyon on October 19, 1983; 2) a major revision to the Quality Assurance Program (FSAR Chapter 17), which was approved by the NRC on December 20, 1983; 3) full reinstatement of Unit 1 security measures in September 1983; and 4) establishment of radiation area controls.

d. Engineering, Design and Licensing

The licensee's activities during the assessment period were predominantly directed towards the reinstatement of the suspended low power license and issuance of a full power license for Unit 1. The major efforts were: (1) the completion of the design verification efforts, including a hearing before the Atomic Safety Licensing and Appeal Board on

the matter of quality assurance in the fall of 1983 (a commission requirement for reinstatement of the low power license); and (2) the review and necessary design and engineering of piping and supports as required by seven NRC license conditions. Other matters were the evaluation of numerous allegations, additional engineering and design effort to complete the Post Accident Sampling System, revisions to technical specifications, and the resolution of NRC requirements for fire protection (Appendix R). In addition to the technical efforts the licensee also performed the associated licensing activities.

4. Summary of Regulatory Activities

a. Inspection Activities

Approximately 13,000 on-site inspector hours were involved in performing a total of 51 routine resident and region-based inspections and three special inspections to follow-up allegations. Areas of inspection activity are summarized in Table 1. Inspections conducted within the SALP period are listed individually in Table 2. Allegation related inspection efforts in support of Diablo Canyon Supplementary Safety Evaluation Reports (SSER) 21, 22 and 26 are described in those documents.

b. Licensing Activities

The NRC technical review and licensing efforts during this SALP period apply almost exclusively to Unit 1 of the Diablo Canyon Nuclear Power Plant. The licensee's performance could be expected to be the same for Unit 2. These NRC efforts were principally directed to the reinstatement, in April 1984, of the Unit 1 suspended low power license and to the issuance of the Unit 1 full power license (NRC effort was completed in July 1984, however, because of court appeals the full power license was not issued until November 2, 1984.) Because of the unique conditions associated with the low power license reinstatement, active intervention, and numerous allegations, the NRC effort was more extensive than normal and included technical review, licensing activities and management considerations throughout the review period.

The effort required frequent interactions with the licensee at all levels. The NRC staff met on numerous occasions with the licensee, including management, performed detailed audits at the licensee's offices and at the Diablo Canyon site, and participated in a number of plant walkdowns during hot functional testing. As a result of this effort eight SER Supplements (SSER 16 through SSER 23) were issued during the evaluation period and four additional supplements (SSER 24 through SSER 27) were issued in July 1984 on staff evaluations also performed during that period.

II. SUMMARY OF RESULTS

Overall, the SALP Board found the performance of licensed activities was satisfactory and directed toward safe operation of facilities. The overall performance showed a trend towards moderate improvement since the last SALP evaluation period. The SALP Board has made specific recommendations in most functional areas for management's consideration.

<u>Functional Area</u>	<u>Rating Last Period</u>	<u>Rating This Period</u>	<u>Trend</u>
1. Plant Operations	2	2	Improving
2. Radiological Controls	2	2	No Change
3. Maintenance	2	2	Improving
4. Surveillance (Including Inservice Inspection)	2	2	No Change
5. Fire Protection	2	2	Improving
6. Emergency Preparedness	1	2	Decline
7. Security & Safeguards	1	1	No Change
8. Fuel Loading	-	2	-
9. Licensing Activities	2	2	No Change
10. Construction Activities	2	2	No Change
11. Quality Programs, Administrative Controls and Other	2	2	Improving

III. CRITERIA

The following attributes were evaluated for each functional area above as appropriate.

1. Management involvement in assuring quality.
2. Approach to resolution of technical issues from a safety standpoint.
3. Responsiveness to NRC initiatives.
4. Enforcement history.
5. Reporting and analysis of reportable events.
6. Staffing (including management).
7. Training effectiveness and qualification.

To provide consistent evaluation of licensee performance, attributes associated with each functional area and describing the characteristics applicable to Category 1, 2, and 3 performance were applied as discussed in NRC Manual Chapter C516, Part II and Table 1.

The SALP Board conclusions were categorized as follows:

Category 1: Licensee management attention and involvement are aggressive and oriented toward nuclear safety; licensee resources are ample and effectively used such that a high level of performance with respect to operational safety is being achieved.

Category 2: Licensee management attention and involvement are evident and are concerned with nuclear safety; licensee resources are adequate and are reasonably effective such that satisfactory performance with respect to operational safety is being achieved.

Category 3: Both NRC and licensee attention should be increased. Licensee management attention or involvement is acceptable and considers nuclear safety, but weaknesses are evident; licensee resources appear strained or not effectively used such that minimally satisfactory performance with respect to operational safety is being achieved.

IV. PERFORMANCE ANALYSIS

The following is the Board assessment of the licensee's performance in each of the functional areas and the Board's conclusions and recommendations regarding corrective actions in each area, if any are required.

1. Plant Operations

Inspection activities have consisted of 16 inspections by resident inspectors, 4 inspections by region-based inspectors, and 2 special inspections. For Unit 1 the inspection activities of the resident inspectors have included examination of operational activities, TMI task action plan items (including natural circulation test observation), the licensee's problem resolution and reporting system, and training activities. For Unit 2, the resident inspectors examined preoperational test activities, preparations for operation, and coordination/interface with Unit 1. These inspections consisted of about 1,970 inspector-hours on Unit 1 and 260 inspector-hours on Unit 2. Region based inspectors expended 198 hours in the 3 inspections of this functional area; and examined the licensee's surveillance program, Bulletin and Circular responses, and safety evaluation commitment implementation. The special inspections consisted of 42 inspector-hours on follow-up of inoperable ECCS flowpath and 657 inspector-hours observing initial criticality and low power testing, with emphasis on the performance of plant operating crews, shift technical advisors, and plant management. The results of these inspections have been analyzed and used in the evaluation of the licensee's performance in the plant operations functional area.

The licensee's initial experience during startup resulted in several problems, generally related to management control and communications. The staff assessment of these problems was that these were typical of those found at almost all plants in the startup phase; further, the number of enforcement actions and LERs was typical and not excessive. The following examples are illustrative of the licensee's learning curve regarding communications and management control.

- a. One item of noncompliance was issued for failure of General Construction (GC) personnel to notify Nuclear Plant Operations (NPO) management of a potentially reportable item. A management meeting was held by the NRC on this topic, and the licensee subsequently instituted corrective actions. Since this action, there has been improved communications between GC and NPO. Improvement of licensee performance in this area has been demonstrated in the conduct of the startup and preoperation programs for Units 1 and 2, respectively.
- b. For the NPO/Engineering interface, a communications weakness was manifest in that an inordinate amount of effort and time was needed to establish a list of equipment power supplies. Additionally, the licensee has encountered problems with the control and maintenance of vendor technical manuals. In some cases, vendors are not identifying necessary changes to the technical manuals and the licensee, in other cases, has failed to incorporate the changes which are identified by the vendors. Many of the LER's have been attributed to personnel errors and a majority of these can be related to problems in the engineering-operations interface. Management attention to the organizational interface situation has resulted in continued improvement.
- c. A few operationally related events have occurred which reemphasized the need to assure that plant management effectively communicates their expectations to all personnel. The most illustrative instance, in our judgement, was related to an inoperable ECCS flow path. This event resulted in a management meeting on May 1, 1984. A strong contributory factor was identified during this management meeting; this being that apparently plant management had not effectively assured that the procedure reviews were performed in a sufficiently substantive and comprehensive manner. The licensee has since revised their procedure development and review programs and increased the level of management attention to these activities.
- d. The staff feels that improved management involvement and communications could have precluded a few enforcement actions; e.g., an inoperable radiation control valve, and loss of source range monitors, and the failure to assure a redundant

power supply for the control room pressurization system. These actions were the result of inadequacies in the interface of work activities and procedures in the area of equipment control. The licensee has since extensively revised their equipment control program to preclude such instances in the future.

Team inspection reviews of low power operations and testing found the situation pretty good. Of particular note was the extensive licensee management coverage of these activities, which probably contributed to the low problem rate during low power operations.

Recognizing that the operating crew, in general, lacked reactor operations experience, the NRC undertook a special team inspection to assess the conduct of operations for the Unit 1 low power testing program. The inspection of operating crew performance was concluded with the observation of natural circulation tests and the associated training of the operating crews. This inspection found that the overall operating crew performance was well controlled and efficient; that licensee management, including senior corporate management, involvement in day-to-day operation was substantial and effective; and that licensee corrective actions was thorough and timely.

The following examples illustrate the licensee's conservative approach in the analysis, resolution and reporting of generic and plant-specific events: ASW water hammer, reactor trip breaker maintenance, inadvertent safety injections due to equipment malfunctions, 4 KV breaker overhauls, and steam generator snubber rebuilds. These events and numerous others (some previously mentioned) are examples of the generally thorough approach that the licensee staff has taken to technically resolve and administratively control identified problems.

Finally, during this SALP period, all candidates for operator licenses were successful. In addition to observations of licensed operator training, observation of general employee and special advisor training disclosed that positions and responsibilities were well defined and understood.

Conclusion

Performance assessment - This area is still Category 2 but * improving.

Board Recommendations

The Board recommends that the licensee apply the same intensive management attention during the power ascension test program and beyond.

2. Radiological Controls

A total of 7 inspections were performed by the Reactor Radiation Protection Section during this review period. All inspections examined programs in Unit 1, one inspection also included Unit 2. A total of 390 inspector hours were spent in this area. Of this total, 326 inspector-hours were onsite. The primary emphasis of the inspection program during this rating period was directed toward the implementation of radiologically related TMI upgrades and startup testing. The plant operating status during this period was such that it did not present an operational challenge to the radiological control program. Due to the lack of any significant activities in the areas of transportation of radioactive materials and effluent releases, these areas were not examined in depth. Specific areas examined are delineated in items a. through j. below:

- a. Radiation control program during initial fuel load.
- b. Unit 2 Special Nuclear Materials (SNM) license's radiation protection program.
- c. NUREG 0737 items II.B.3 and II.F.1.
- d. Follow-up on allegations.
- e. Unit 1 Startup Tests.
- f. Unit 2 Preoperational Tests.
- g. Unit 2 FSAR identified radiation monitors calibration.
- h. Waste Management.
- i. Follow-up on IE Information Notices.
- j. Follow-up on Licensee Event Reports.

The resident inspector staff also provided observations in these areas.

During the appraisal period, one Severity Level IV Violation, failure to adhere to procedures, and one Severity Level V Violation, failure to properly post a radioactive material storage area, were identified. No deviations were identified in this area during the assessment period. No unresolved items existed at the end of the assessment period.

The Severity Level IV Violation related to the failure of individuals in responsible positions, e.g. Senior Reactor Operator and Chemistry and Radiation Protection foreman, to adhere to a procedure. At the time, the Violation had minor radiological significance, however it is important to establish good practices at the onset of facility operations.

The Unit 1 preoperational inspection program has been completed. The startup test inspection program has been initiated and will continue as the licensee proceeds through power ascension. The licensee demonstrated good planning in the startup test for radiation shielding effectiveness; however, in those startup tests related to radioactive effluent control and radiochemistry control, the same degree of planning was not demonstrated.

The licensee has provided timely submittals of required event reports, demonstrating adequate analysis and, for the most part, sufficient corrective action. Initial actions taken to preclude unauthorized removal of small radioactive check sources did not prevent recurrence; however, effective controls were subsequently implemented.

A significant portion of the inspection effort in this functional area during this review period was directed to the implementation of NUREG 0737 Items II.B.3 and II.F.1, Attachment 1, 2, and 3. In this specific area a number of design or installation deficiencies were identified by Region V. The licensee subsequently established a task force to correct the deficiencies and to assure that other problems were identified and corrected. However, subsequent inspections identified additional deficiencies. At the end of the review period the licensee was taking action to correct these deficiencies. The licensee has demonstrated a management commitment to staff training to assure proper implementation of Item II.B.5.

During this review period the licensee has been directing most of their attention to Unit 1. As a result of this emphasis, most of the review and acceptance by the operational staff of Unit 2 construction work has not been completed. These tasks must be finished by the licensee before the preoperational inspection program is completed. The preoperational inspection program for Unit 2 is approximately 80% complete. Inspection of the work related to for Unit 2 NUREG 0737 Items II.B.3 and II.F.1 is approximately 10% complete.

Conclusion

In summary, due to plant status during the assessment period, the radiological control program has not had a significant operational challenge. However, the licensee has maintained a satisfactory program in a state of readiness. Although a number of deficiencies were identified in areas related to TMI modifications, the licensee has been responsive. Staffing of the Chemical and Radiation Protection Department has been improved by the addition of contractor personnel. However, additional staffing will be necessary to support the operation of both units. There have been no significant enforcement actions in this functional area, but the items identified did indicate the need for additional emphasis on and a total commitment to a good radiological control program from the outset of facility operations.

Performance assessment - Category 2. This is the same rating as was assigned to this functional area during the previous SALP review period.

Board Recommendation

Unit 1

Strong management support should continue to be afforded the radiation protection program. Attention to procedural details should be demonstrated by all individuals affected by the radiation protection program, particularly those in supervisory positions. Sufficient resources should be available so that Unit 2 requirements do not impact on the needs of Unit 1.

Unit 2

Sufficient human resources should be provided to the operating staff to assure that the review and approval of terminated construction work can be carried out without unduly impacting on the needed resources for Unit 1. Lessons learned from the implementation of NUREG 0737 commitments in Unit 1 should be used when implementing these commitments in Unit 2.

3. Maintenance

Inspection of the maintenance program consisted of monthly routine inspections by the resident inspectors. Three LERs and one special report were associated with this functional area, and were acceptably reported and resolved by the licensee.

The licensee's implementation of the maintenance program was evaluated by the resident inspectors' observations of preventative and corrective maintenance activities. These maintenance activities were performed by qualified individuals in accordance with approved procedures. Unusual maintenance activities, such as the overhaul of safety related 4 KV breakers and steam generator snubbers, were closely followed by licensee management. Licensee management concern demonstrated appropriate attention to this functional area by delaying initial criticality in order to repair a reactor coolant pump seal that had a relatively small leak. Finally, as a result of an in-house review by the licensee, and in response to NRC findings, the licensee is making efforts to improve the maintenance trending program and maintenance work planning.

Conclusion

Performance assessment - Category 2. While this was the same evaluation assigned in the last SALP cycle, improvement was noted.

Board Recommendation

Improved capabilities in the maintenance trending and work planning areas could be demonstrated with continued licensee management attention.

4. Surveillance

An October 1983 team inspection, along with routine monthly inspection by resident inspectors, evaluated the licensee's surveillance program and implementation. The results of these inspections indicate that the licensee's surveillance activities were satisfactory and performed by trained individuals in accordance with approved procedures. However, one notice of violation, related to surveillance activities, was attributed to unacceptable procedures and inadequate personnel briefing. Also, seven LER's resulted from surveillance activities, mostly related to errors by operations and instrumentation and control personnel. The programmatic inspection found that the surveillance control procedures should be changed to assure that 1) the review of the surveillance test data by the functional supervisor utilizes a complete approved procedure and acceptance criteria and 2) the shift foreman or control operator be promptly informed of any surveillance test failure. The licensee has aggressively pursued actions to provide added assurance that these NRC findings have been implemented.

Conclusion

Performance assessment - Category 2. This is the same category as in the previous SALP period, although several elements of licensee performance in this functional area were deemed to be a Category 1 level.

Board Recommendations

Based on the licensee's performance as summarized above, licensee management should strive to assure that their requirements are effectively communicated to all personnel. Particular attention should be given to assuring that personnel performance reflects a proper understanding of the management requirements.

5. Fire Protection

One fire protection specific inspection was conducted by Region based inspectors, in addition to routine inspections performed by the resident inspectors during plant tours and as part of the independent inspection effort. During this SALP reporting period, the licensee submitted four LER's and six special reports on the subject of fire protection. These reports were submitted in a timely and technically acceptable fashion. Also, four notices of violation pertaining to fire protection were issued during this SALP cycle. These violations either addressed the licensee's failure to post welding permits, or to understand and adhere to the requirements specified in the permits or procedures. During this SALP period, licensee management has taken positive steps to improve their fire protection program. A full time Fire Marshall has been assigned to coordinate the fire protection program, and an onsite fire protection section has been developed.

Conclusion

Performance assessment - Category 2. This rating is the same as that assigned to the licensee's fire protection activities during the previous SALP cycle, however, an improving trend was noted at the end of the SALP period.

Board Recommendations

An increase in licensee initiated improvements in this area should be a goal for the next SALP period.

6. Emergency Preparedness

During the appraisal period, the Region conducted one routine inspection of the emergency preparedness program and observed one emergency preparedness exercise. A total of 203 inspection hours were expended, 167 hours assigned to Unit 1 and 36 hours assigned to Unit 2. No significant deficiencies or violations of NRC requirements were identified. This evaluation focuses on the licensee's onsite activities, however, the emergency preparedness program addresses some interfacing with offsite authorities (i.e., State, local).

The routine inspection identified some weakness in the area of management involvement in assuring the quality of emergency planning. For example, the annual Emergency Plan audit was determined to be limited in scope and performed by personnel with no emergency planning background. Additionally, licensee management could be more involved in assuring that training remains a priority. Several examples of incomplete emergency plan training were noted, including personnel at the corporate level. As a possible result of incomplete training, one of seven interviewed Shift Supervisors was found to be weak in his overall knowledge of the plan and apparently would not have performed effectively as an Interim Emergency Coordinator. Also, most of the Shift Foremen could stand improvement in their ability to make protective action recommendations.

From a safety standpoint, the licensee's approach to resolution of technical issues has been clearly thorough and routinely conservative. The licensee's responsiveness to NRC initiatives has been generally timely, however, the need for improving the emergency plan training program was identified during the emergency preparedness appraisal conducted in December 1981.

The licensee's staff was considered to be adequate with organizational positions well defined and vacancies filled in a timely manner.

Conclusion

Performance assessment - Category 2. This represents a decline in performance from the Category 1 assigned during the previous SALP cycle.

Board Recommendation

- (1) The emergency preparedness training program appears to be adequate; however, management support of the program should be improved to provide better assurance that personnel will be trained/retrained on a timely basis and, thus, able to respond to an emergency in accordance with the Emergency Plan and related implementing procedures.
- (2) The effectiveness of the audit program could be improved by performing more substantial audits and by ensuring that audits are performed by qualified personnel.

7. Security and Safeguards

From January 1, 1983 through June 31, 1984, Region V conducted five Safeguards inspections at Diablo Canyon Power Plant for a total of 192 hours of inspection effort. All inspections were in the Physical Security area and all are assigned to Unit 1. No violations were identified. Routine inspection activities comprised 118 hours and 74 hours were devoted to reactive efforts.

On March 11, 1983, the NRC approved PG&E's February 25, 1983 request for suspension of portions (Section 2.E) of the physical security requirements of the Facility Operating License DPR-76. An exemption (pursuant to 10 CFR 73.5) to the requirements of 10 CFR 73.55(b)(h) for Unit 1 was approved with the provisions that full security be reinstated at least 30 days prior to fuel load. The reactive inspection of November 16-18, 1983 verified that the physical security requirements for the Unit 1 main protected area and Unit 1 vital areas required for fuel loading had been reestablished in accordance with their approved Security Plan.

Physical Security inspections during this SALP period showed licensee management to continue to be actively involved in the security program. Staffing of the uniformed security organization was judged by the inspectors to be very adequate, and an effective program for the reporting and analysis of reportable revents was in place. The security management staff was responsive to NRC initiatives, demonstrated an understanding of safety/security issues, and the individual Security Officers have generally demonstrated a thorough understanding of security requirements and a desire to comply with these requirements.

Conclusion

Performance assessment - Category 1

Board Recommendations

None.

8. Fuel Loading

Unit 1 fuel loading was conducted from November 15 through November 20, 1983. The fuel loading activities were performed quickly and were well controlled. Two items of noncompliance were issued during fuel load. These items are discussed in the Plant Operations and Radiation Protection sections, since they are related to those functional areas. One LER (83-31), which indicated that surveillance requirements were not met on the auxiliary hoist, was issued during the fuel load. Fuel loading was conservatively terminated several times to deal with equipment malfunctions. The resolution of these equipment malfunctions was conducted in accordance with applicable Technical Specifications.

Conclusion

Performance assessment - Category 2.

Board Recommendation

None.

9. Licensing Activities

The engineering and design efforts by the licensee throughout this SALP period required extensive licensing activities and interactions with the NRC.

The major NRC technical review and licensing activities were associated with the design verification effort (IDVP and ITP), allegations, piping and supports, including programmatic engineering aspects, and a variety of technical and licensing matters. The efforts, including support by consultants, during the evaluation period exceeded 25,000 hours of professional staff time. The following are specific activities included in this appraisal:

- a. Design Verification Effort
- b. Allegations
- c. Piping and Supports Review
- d. Programmatic Provisions for Onsite Activities
- e. Seismic Design Bases Reevaluation Program
- f. Shift Advisor Qualifications

- g. Shunt Trip for Scram Breakers
- h. Event Reporting
- i. Fire Protection
- j. Issuance of SSERs
- k. Issuance of License Amendments
- l. Technical Specifications

The assessment of the licensee's performance regarding these activities is presented below for the seven attributes.

(1) Management Involvement and Control in Assuring Quality

The licensee had earlier developed and implemented a very comprehensive program, the ITP, to respond to and resolve concerns that were raised by the IDVP, the NRC and by the licensee as a result of the design verification effort. The licensee management continued its active involvement in the planning of activities, assignments of priorities and the resolution of technical and licensing matters. The Diablo Canyon Project management and the engineering discipline management actively participated with their staff in numerous meetings with the IDVP and the NRC. Management had detailed knowledge and was aware of specific technical issues and their safety significance. Management initiated appropriate steps to assure proper corrective actions. This effort was essentially completed in late 1983.

Management had made the same commitment to prompt and satisfactory resolution of concerns identified during the piping and support effort. The commitment included implementation of quality assurance programs, control procedures and training. While such commitments had been made at the corporate level, the actual implementation of these efforts was not always evident during the NRC staff audits and inspections at the licensee's offices and at the site, in particular in late 1983 and early 1984. Some of the deficiencies were identified by the staff and were also the subject of numerous allegations. This resulted in seven license conditions which required the licensee to perform specific actions before issuance of a full power license. During its audits the staff identified a high rate of minor design errors and frequent misuses of procedures for design modifications by the Onsite Project Engineering Group (OPEG). These deficiencies indicated a lack of awareness and supervision by the Diablo Canyon Project management, and inadequate QA design control procedure implementation by the OPEG management. Necessary corrective actions were initiated by management once the problems were identified. The staff also noted that training procedures had not been fully implemented for many newly employed engineers working within OPEG. These procedures were subsequently revised and implemented for all engineers.

Various technical and licensing matters required frequent interactions between NRC staff and the licensee. These matters included allegations, fire protection, systems interaction, technical specifications, shunt trip for scram breakers, containment coatings, and seismic reevaluation program. In all cases the appropriate level of management was involved in the resolution of the matters. Awareness of safety significance, prior planning, assignment of priorities and anticipation of problem areas were evident in varying degrees of effectiveness. In all cases the management took corrective action after problems were identified.

In summary, while the licensee's corporate management had committed to assuring quality for all activities, this commitment was not implemented to the same degree of effectiveness. While in certain specific areas the licensee's performance meets the requirements for Category 1, the performance level with regard to OPEG was Category 3. The overall management involvement and control in assuring quality was at the Category 2 level.

(2) Approach to Resolution of Technical Issues

During the reporting period the licensee completed the design, analysis and modifications that resulted from the design verification effort. The licensee's effort on piping and supports was initiated as part of design verification effort to account for the revised seismic loadings. Much of the analysis and design in this area was performed by the Onsite Project Engineering Group (OPEG).

Based on numerous interactions with the licensee's technical staff and based on the evaluations of the licensee's submittals, the staff finds that the licensee fully understands the technical issues, including their safety significance, that were identified by the IDVP, the staff and in allegations. The licensee was cognizant of applicable staff positions and their bases. The resolution of issues is based on a sound technical approach with the objective of meeting applicable NRC design criteria and maintaining adequate safety margins. The licensee applied prevailing industry standards and current literature and test results, as applicable.

The deficiencies in the programmatic approach, as discussed in item (1) above, could, potentially, have led to deficiencies in the technical approaches. This was not the case. The NRC staff review and evaluation clearly indicated that the technical approaches, although not always being consistent with established programs, and results were sound and based on fully understanding the issue.

The licensee pursued the resolution of technical issues very actively. In some cases the approach was very responsive to the staff's concern once identified and required only a minimal amount of follow-up interaction. Examples of such positive approaches were the resolution of issues related to Technical Specifications, thermal gaps (one of the license conditions on piping and supports), seismic design basis reevaluation program, and the matter of fire protection.

In summary, the licensee's approach to the resolution of technical issues demonstrated an understanding of the issues, the safety significance, and the regulatory requirements. The licensee's performance fully meets the requisites for a Category 2 rating.

(3) Responsiveness to NRC Initiatives

Throughout the evaluation period the NRC staff interacted very frequently with the licensee's staff and management. This included written requests for additional information, audits of records, site visits and meetings. The licensee was very responsive in providing additional information requested either by letter or in meetings. The licensee fully cooperated in arranging audits/inspections and making available on short notice the necessary technical staff. The licensee's written responses were timely, technically sound and thorough. The licensee's presentations at meetings were well prepared and appropriate staff was always present to respond to further questions. Only in a few instances (e.g. fire protection and environmental qualification of motor capacitor) were extended interactions required to resolve the issue. The most positive approach to responding to NRC concerns was demonstrated during the piping and support effort. The licensee was very responsive to all NRC initiatives, including arranging for additional hot walkdowns of systems. The licensee's performance in the area of piping and supports was of a Category 1 level. Taking into consideration the performance with respect to the design verification effort and the allegations, the overall performance in responding to NRC initiatives was of a Category 2 level.

(4) Enforcement History

There is no basis for an evaluation of this attribute with respect to licensing activities.

(5) Reporting and Analyses of Reportable Events

During the evaluation period the NRC technical review and licensing efforts were limited to the follow-up of two events (flooding of auxiliary building pipe tunnel and disabling of high pressure injection trains during refill of BIT). The licensee's performance was at the Category 2 level.

(6) Staffing (Including Management)

The piping and support effort involved many engineers within the OPEG organization, some were newly employed for this specific purpose. There was evidence that insufficient personnel were assigned for QA/QC activities, both in the engineering of as well as for the resultant modifications in the plant. Since about April 1983 there was evidence of improvement in this staffing.

There was adequate and qualified staffing, both professional and management, throughout the evaluation period for all other activities. The overall licensee's performance was at a level of Category 2.

(7) Training and Qualification Effectiveness

The NRC technical review and licensing efforts were limited to an evaluation of shift advisor qualification and training for OPEG personnel. The licensee's performance for shift advisor qualification was at a Category 2 level. The OPEG personnel training and qualification was the subject of a number of allegations. Based on audits the staff found that the training provided did not meet established procedures and requirements. Corrective actions were subsequently taken by the licensee. In recognition of the observed OPEG training weakness and on the staff's limited involvement regarding this criterion the staff concludes that the licensee's performance was at a Category 3 level.

(8) Trending

Throughout the assessment period the licensee maintained an overall high performance in the area of licensing activities. With respect to "management involvement and control in assuring quality", which was at a Category 1 level during the previous period, the licensee maintained the high level, except for the implementation of the commitment to qualify to activities in the OPEG organization. While this was an isolated case it was of sufficient significance to reduce the performance level to Category 2 for this assessment period.

The licensee's performance with respect to "approach to technical issues" and "responsiveness to NRC initiatives" showed a continued improvement (performance during previous SALP period was at the Category 2 level). For many activities the performance was at the Category 1 level, most notably in responding to NRC requests in the area of piping and supports.

Another change in performance was in the area of "staffing (including management)", previously at the Category 1 level, now at the Category 2 level. This decrease in performance is due to the increased staffing which was required in OPEG to handle the large number of piping and support analyses and the need for QA/QC personnel.

There were no significant changes in the licensee's performance in the remaining attributes evaluated.

Conclusion

Taking all of the above into consideration the board concludes that the licensee maintained a satisfactory level of performance with respect to licensing activities. There was an overall increase in performance; however, the OFEG related performance greatly detracted from this achievement. In summary, the overall performance remained at the Category 2 level.

Board Recommendation

Strong management attention should be directed to insure that all engineering, design, and licensing issues are well understood and properly administered. Strict compliance with programmatic matters should be insisted upon by licensee senior management.

10. Construction Activities (Modifications)

Inspection activities have consisted of 20 inspections by regional based inspection staff. In addition, a contract was awarded by NRC Region V to the Lawrence Livermore National Laboratory (LLNL) to provide assistance in inspecting the plant modifications being implemented at Diablo Canyon as a result of the design verification program.

The total number of construction inspection hours applied to Unit 1 and 2 was 4,505 hours. The break-down of these hours is as follows:

	<u>UNIT 1</u>	<u>UNIT 2</u>	<u>TOTAL</u>
Regional Inspectors Hours	1,283	239	1,522
Contract Inspectors Hours	1,824	1,159	2,983
	-----	-----	-----
TOTAL	3,107	1,398	4,505

The number of construction items inspected within Units 1 and 2 during this period included 559 pipe supports, 212 structural steel connections (681 welds), 231 electrical raceway supports, 56 HVAC supports, qualifications of personnel, and rupture restraints.

Fourteen notices of violation pertaining to construction activities were issued during this SALP period. The majority of these violations addressed a cross-section of construction errors in welding of structural steel, piping, raceway, and HVAC supports. The licensee was responsive to the notices of the violations.

The construction inspections during this SALP period showed licensee management to be frequently involved in construction activities. Considering the extensive inspection effort and the number of minor violations identified, it appears that adherence to procedures was generally satisfactory. The licensee's personnel generally had a good understanding of safety issues and worked towards resolution in a timely manner. The licensee's construction staffing was good with identified positions filled on a priority basis. Training and qualification of licensee/contractor inspection personnel could have been improved as evidenced by the multiple minor violations related to contractor quality control.

Conclusion

Performance assessment - Category 2. This represents the same evaluation category as assigned in the last SALP cycle.

Board Recommendation

Continued licensee management attention to training, control, and implementation of construction activities should result in improved performance in the final phases construction activities.

11. Quality Programs, Administrative Controls and Other

During the assessment period extensive NRC examinations were performed as a consequence of an unprecedented number of allegations. These allegations dealt principally with construction activities, Quality Assurance, and Quality Control. Altogether over 1400 allegations were received by the NRC from various sources. The great majority of these allegations were received by the staff since September 1983, coincident with the Diablo Canyon Unit 1 readiness for fuel loading and low power testing. Due to the substantial increase in allegation activity, a Diablo Canyon Allegation Management Program (DCAMP) was instituted by the Commission. Prior to DCAMP, allegations were addressed within the standard reactive inspection program.

The purpose of DCAMP was to direct an expansive staff effort that would examine, analyze, and assess the safety significance of all outstanding issues of concern. As part of this effort, two onsite team inspections were conducted by the staff and consultant personnel (during March 30 thru April 29, 1983, November 28 thru December 9 of 1984, and January 4 thru 20 of 1984). Approximately 3342 staff inspector hours were devoted to this effort. Supplements 21 and 22 of NUREG-0675 (Safety Evaluation Report related to the operation of Diablo Canyon Nuclear Power Plant) were issued, subsequent to those onsite inspections, to report the status of staff resolution concerning allegations or issues about construction and operation at Diablo Canyon. Due to continuing allegations, a subsequent team inspection was performed (May 14 - May 25, 1984) involving 523 staff inspection hours. Supplement 26 of NUREG-0675 was issued as a result of this inspection. The results of these examinations and investigations indicated that while there may have been some lapses in the quality and management systems related to construction, the systems have worked reasonably well. The NRC has reasonable confidence that the licensee and contractors have acted responsibly over the years.

One area of concern, identified by the NRC as a result allegations, related to programmatic aspects for onsite training programs, procedures, audits and corrective actions, and design responsibilities, primarily within the Onsite Project Engineering Group (OPEG). As discussed under Item 9 (Licensing Activities), certain deficiencies occurred during the SALP period as identified by a staff inspection in July 1984. Corrective action was initiated by the licensee when the programmatic concerns were first identified.

Inspections of the licensee's committee activities related to quality programs and administrative controls indicated both positive and negative observations. The NRC SALP board members felt that the level III violation and civil penalty (related to failure to maintain a flow-path for the centrifugal charging pumps) was due in part to the review process for relevant procedures. It appeared that the Plant Staff Review Committee may not have been fully effective and that upgrading was needed. Actions have since been taken to strengthen this area.

The NRC SALP board members felt that the licensee's management was generally very involved and well staffed. Training related to quality activities and administrative controls was generally good for the permanent licensee staff, but was deficient in the OPEG organization and in contractor groups experiencing rapid growth or change of scope of work. The violations identify a need for the Plant Staff Review Committee to conduct more substantial reviews of procedures and for licensee management to become more aware of routine events which may become very significant to the safety of the plant. The NRC staff also observed that the licensee's approach to technical issue resolution, responsiveness, and reporting, was very good (and probably improving) once the licensee management became convinced that a significant issue actually existed. Again, licensee management should continue to strive to have a more immediate comprehensive and substantial knowledge of day to day plant activities.

Conclusion

Performance assessment - Category 2. This rating is the same as that assigned to the licensee's QA activities during the previous SALP cycle.

Board Recommendations

The licensee should continue additional management efforts to assure that plant procedures are adequate, that plant personnel adhere to the procedures, and that management is well informed of day to day activities.

V. SUPPORTING DATA AND SUMMARIES

1. Licensee Event Reports (LERs)

Licensee event reports were submitted for 47 reportable events which occurred during this SALP period. Table 5 gives a synopsis of the LERs, and they are listed in Table 6.

The 47 LERs were evaluated by Region V and by the Office for Analysis and Evaluations of Operational Data (AEOD). Regarding the reports themselves, it was concluded that the narrative information provided was adequate to provide the reader a good understanding of the event. There were no significant problems with coded information provided on the LER forms. In all cases when the licensee promised to submit an update report, it was submitted. Of the 47 LERs, the largest number (25, or 53%) were attributed to personnel error. Component failure accounted for 9 events (19%). (These data are based upon cause codes assigned by the SALP Board, although there were few differences between these and the cause codes assigned by the licensee.)

2. Part 21 Reports

5/27/83 - Defective Woodward governor/activator
6/16/83 - Defective electrical cable (Brand-Rex Company, 12-gauge
3-conductor)

3. Investigations and Allegations

A. Investigations

Inquires Closed:	QA and/or hardware defects - 3 Discriminatory acts - 6 False statements and/or documents - 3 Sabotage - 2
Cases Closed:	Discriminatory acts - 1
Inquiries in Open Status:	False statements and/or documents - 1
Cases in Open Status:	QA and/or hardware defects - 4 Discriminatory acts - 5 False statements and/or documents - 1

B. Allegations

During the SALP period approximately 1400 allegations were received by the NRC from various sources. The great majority of these concerns were identified since September 1983, coincident with the Diablo Canyon Unit 1 readiness for fuel loading and low power testing. Due to the substantial increase in allegation activity, a Diablo Canyon Allegation Management Program (DCAMP) was instituted by the Commission. Prior to DCAMP, allegations were addressed within the standard reactive inspection program and in accordance with regional procedures.

The purpose of DCAMP was to direct an expansive staff effort that would examine, analyze, and assess the safety significance of all outstanding issues of concern. As part of this effort, two onsite team inspections were conducted by staff and consultant personnel (during March 30 thru April 29, 1983, November 28 thru December 9 of 1983, and January 4 thru 20 of 1984), involving approximately 3342 staff inspector hours. Supplements 21 and 22 to NUREG-0675 (Safety Evaluation Report related to the operation of Diablo Canyon Nuclear Power Plant) were issued, subsequent to those onsite inspections, to report the status of staff resolution concerning allegations or issues about construction and operation at Diablo Canyon. Due to continuing allegations a subsequent team inspection was performed (during May 14 - May 25, 1984) involving 523 staff inspection hours. Supplement 26 of NUREG-0675 was issued as a result of this inspection.

4. Escalated Enforcement Actions

- a. Civil Penalties: One level 3 (\$50,000), failure to maintain an operable flow path for the centrifugal charging pumps (Report 50-275/84-06).
- b. Orders: None.
- c. Confirmation of Action Letters: None.

5. Management Conferences Held

April 7, 1983 - SALP Review Meeting

May 1, 1984 - Enforcement Conference (Circumstances related to the failure to maintain an operable flow path for both centrifugal charging pumps.

6. Special Reports

<u>NRC Corresp. No.</u>	<u>Event Description</u>	<u>Event Date</u>	<u>Letter Date</u>	<u>Comments</u>
83-118	Missing Radioactive Source	5/4/83	6/1/83	Radioactive check source was (100 ci CS-137) reported missing from the radiation monitor assoc. with Gas Decay Tank Discharge Line.
83-134	Lost or Stolen Radioactive Source	4/15/83	5/13/83	An exempt quantity radioactive check source was discovered missing from the radiation monitor assoc. with radwaste discharge line.
83-135	Earthquake	5/2/83	5/13/83	On-site seismic monitoring instrumentation was actuated during an earthquake; all plant areas were inspected and no damage was found.
83-252	Recovery of Missing Radioactive Source	9/16/83	10/17/83	Radiation survey discovered lost check source (see Special Report ltr. dated 6/1/83) inside a wall; method of placement and identity of individual(s) involved are unknown.
83-317	Non-Functional Fire Barrier Penetrations	11/22/83	12/22/83	Fire barrier penetrations were rendered non-functional in five zones, containing safety-related equip., due to construction activities. Required fire patrols were established.
83-318	Inoperable Fire Detection Instrumentation	11/29/83	12/29/83	Smoke Detectors were rendered inoperable in three zones, containing safety-related equipment, due to construction activities. Fire watches and patrols were established.

Special Reports (cont)

<u>NRC Corresp. No.</u>	<u>Event Description</u>	<u>Event Date</u>	<u>Letter Date</u>	<u>Comments</u>
84-004	Inadvertent lifting of primary plant PORV	12/5-9/83	1/4/84	During mode 5 (solid plant operations) primary plant PORV 455c was inadvertently lifted three times due to RCS pressure transients (caused by operator adjustment of RHR system flow).
84-025	Non-Functional fire barriers	12/22/83	1/23/84	Two fire barriers in safety-related areas were made non-functional due to construction activity. Fire patrols were established.
84-035	Non-Functional fire barriers	1/6/84	2/6/84	Misc. fire barriers were made non-functional in safety-related areas due to construction activities. All appropriate fire watches or patrols were established.
84-064	Inoperable Fire Pump	1/30/84	2/29/84	A fire water pump was rendered inoperable due to frequent motor starts in a short time period.
84-164	Non-functional fire barriers	3/30/84	4/26/84	A fire barrier in a safety-related area was made non-functional the removal of a door latch on a fire door. Fire patrols were established.
84-157	Challenges to Power Operated Relief Valves	3/16/84	4/16/84	During mode 5 (solid plant operations) primary plant PORV PCV-456 lifted due to pressure transients (caused by operator control of CVC system flow).

Special Reports (cont)

<u>NRC Corresp. No.</u>	<u>Event Description</u>	<u>Event Date</u>	<u>Letter Date</u>	<u>Comments</u>
84-199	Positive Moderator temperature coefficient		5/16/84	During zero power core physics testing MTC was computed to be positive (with all rods withdrawn, beginning of cycle life, and at hot zero thermal power.
84-262	ECCS Actuation	5/8/84	6/18/84	During mode 2 (start-up) a malfunction in the steam dump control system initiated a safety injection and reactor trip.

Table 1 - Summary of Inspection Activities
1/1/83 - 6/30/84) for Unit 1

<u>Functional Area</u>	<u>Inspection*</u> <u>Hours</u>	<u>Percent</u> <u>Effort</u>
1. Plant Operations	2626	24.5
2. Radiological Controls	380	3.5
3. Maintenance	70	0.7
4. Surveillance	94	0.9
5. Fire Protection	61	0.6
6. Emergency Preparedness	167	1.6
7. Security/Safeguards	219	2.0
8. Fuel Loading	10	0.1
9. Licensing Activities	N/A	N/A
10. Construction (Mods)**	3107	29
11. Quality Programs, Administrative Controls and Other***	<u>3988</u>	<u>37</u>
	10,722	100

*Allocations of inspection hours to each functional area are approximations based upon NRC form 766 data. Note, SALP (1983) inspection hours (324 m-h) have not been included.

**1824 Inspection hours from NRC contract personnel.

***Includes 3342 inspection hours used during late 1983 and 1984 to complete allegation investigations which are documented in SSER's 21, 22 and 26.

Table 1 - Summary of Inspection Activities (continued)
 (1/1/83 - 1/31/84) for Unit 2

<u>Functional Area</u>	<u>Inspection*</u> <u>Hours</u>	<u>Percent</u> <u>Effort</u>
1. Plant Operations	8	0.5
2. Radiological Controls	9	0.5
3. Maintenance	0	0
4. Surveillance	0	0
5. Fire Protection	16	1.0
6. Emergency Preparedness	36	2.0
7. Security/Safeguards	0	0
8. Fuel Loading	0	0
9. Licensing Activities	N/A	N/A
10. Construction (Mods)**	1398	79
11. Quality Programs, Administrative Controls and Other	<u>296</u>	<u>17</u>
	1763	100

*Allocations of inspection hours to each functional area are approximations based upon NRC form 766 data. Note, SALP (1983) inspection hours have not been included.

**1159 inspection hours from NRC contract personnel.

Table 2 - Inspections Conducted

<u>Report*</u> <u>No.</u>	<u>Dates</u>	<u>Inspector(s)</u>	<u>Area</u> <u>Inspected</u>	<u>Hours</u>
83-01	1/17-21/83	Safeguards	Routine Security Inspection	82
83-02 (83-01)	1/3-21/83	Construction	Construction and Modification Activities	97
83-03 (83-02)	1/2-29/83	Residents	Routine Monthly Inspection	106
83-04 (83-03)	1/25-27/83	Construction	Independent Verification Prog.	48
83-05 (83-04)	2/7-11/83	Construction	Construction and Modification Activities	64
83-06 (83-05)	2/7-11/83	Construction	Pre-Service Inspection Prog.	64
83-07 (83-06)	1/30-2/26/83	Resident	Routine Monthly Inspection	193
83-08 (83-07)	2/28-3/4/83	Construction	Construction and Modification	64
83-09	3/16-18/83	Safeguards	Special Security Inspection	21
83-11 (83-08)	-----CANCELLED-----			
83-12 (83-09)	3/1-31/83	Residents	Routine Monthly Inspection	204
83-13 (83-10)	3/30-4/29/83	Residents/ Construction	H. P. Foley Q.C. Allegations	242
83-14 (83-11)	3/1-31/83	Operations	Follow-up of licensee response to I.E. Bulletins	21
83-15 (83-12)	4/18-22/84	Construction	Construction and Modification * Activities	34
83-16	4/25-5/4/83	Safeguards	Special Security Inspection	27
83-17 (83-13)	4/3-30/83	Residents	Routine Monthly Inspection	56

Table 2 - Inspections Conducted (Cont)

<u>Report*</u> <u>No.</u>	<u>Dates</u>	<u>Inspector(s)</u>	<u>Area</u> <u>Inspected</u>	<u>Hours</u>
83-18 (83-14)	4/7/83	Regional Management	System Assessment of Licensee Performance	324
83-19 (83-15)	5/1-31/83	Residents	Routine Monthly Inspection	103
83-20	5/23-6/6/83	Construction	Event Follow-up	67
83-21 (83-16)	5/29-7/2/83	Residents	Routine Monthly Inspection	139
83-22	6/6-7/8/83	Radiation Specialist	TMI Action Plan, "Post Accident Monitoring Instrument"	91
83-23	6/27-7/1/83	Construction	Construction and Modification Activities	20
83-24 (83-17)	7/11-29/83	Construction	Construction and Modification Activities	76
83-25 (83-18)	7/18-8/18/83	Emergency Preparedness	Emergency Preparedness	126
83-26	7/1-22/83	Construction	Follow-up of L.E.R. concerning suspected under wall RCS piping	285
83-27 (83-19)	7/3-30/83	Residents	Routine Monthly Inspection	48
83-28 (83-20)	7/31-9/3/83	Residents	Routine Monthly Inspection	57
83-29 (83-21)	8/29-9/9/83	Construction	Follow-up of outstanding noncompliance items	62
83-30 (83-22)	9/4-10/1/83	Resident	Routine Monthly Inspection	59
83-31 (83-23)	10/2-29/83	Resident	Routine Monthly Inspection	125
83-32	10/3-7/83	Radiation Specialist	Follow-up on TMI Action Plan, LERs, and ALARA Allegation	41
83-33	10/17-21/83	Emergency Preparedness	Emergency Preparedness	77
83-34 (83-24)	10/11-14/83	Construction	NSC Audit Findings	22

Table 2 - Inspections Conducted (Cont)

<u>Report* No.</u>	<u>Dates</u>	<u>Inspector(s)</u>	<u>Area Inspected</u>	<u>Hours</u>
83-35	11/16-18/83	Safeguards	Special Security Inspection	26
83-36	10/30-11/26/83	Resident	Routine Monthly Inspection	48
83-37 (83-25)	11/14-18/83	Construction	NSC Audit Findings	402
83-38 (83-26)	11/14-18/83	Radiation Specialist	Follow-up of pre-op test, radiation monitor calibrations, and TMI action plan	39
83-39 (83-27)	12/5-22/83	Operations	Fire Protection/Prevention	77
83-40	12/6-20/83	Operations	Follow-up of SER Supplement No. 19 outstanding items	70
83-41	11/27-12/31/83	Residents	Routine Monthly Inspection	158
84-01 (84-01)	1/3-6/84	Construction	Construction and Modification Activities	23
84-02 (84-02)	1/1-2/4/84	Residents	Routine Monthly Inspection	96
84-03 (84-03)	2/5-3/24/84	Resident	Routine Monthly Inspection	190
84-04 (84-04)	4/2-6/84	Construction	Construction and Modification Activities	34
84-05	3/26-4/10/84	Radiation Specialist	Chemistry and Radiation Protection Dept, Follow-up on pass, LERs, IE notices, and allegations	55
84-06	4/7-17/84	Operations	Operational event involving the inoperability of an ECCS flow	42
84-07	4/13-5/2/84	Operations	Operating crews during initial start up and low power testing	657
84-09	4/23-5/25/84	Construction	Seismically Induced System Interaction Program and related allegations	48

Table 2 - Inspections Conducted (Cont)

<u>Report*</u> <u>No.</u>	<u>Dates</u>	<u>Inspector(s)</u>	<u>Area</u> <u>Inspected</u>	<u>Hours</u>
84-10	3/25-5/19/84	Resident	Routine Monthly Inspection	236
84-11	5/14-25/84	Operations	Follow-up on Allegations	523
84-12	5/18-6/29/84	Safeguards	Special Security Inspection	36
84-13 (84-05)	4/30-5/4/84	Construction	Construction and Modification and Activities	33
84-14	5/01/84	Regional Management	NRC Enforcement Conference	20
84-15	4/30-5/04/84	Radiation Specialist	Radiological Controls, follow-up on TMI	40
84-16 (84-06)	4/2-4/84	Construction	Records of Welding Activities	20
84-17 (84-07)	5/22/84	Regional Management	Meeting to discuss changes in QA program	2
84-18	5/22/84	Radiation Specialist	TMI Action Plan, "Post Accident Sampling System"	54
84-20 (84-09)	5/14-23/84	Construction	Follow-up on Allegations	59
84-21 (84-10)	5/20 - 6/30	Operations	Routine monthly inspection	424

*The inspection report number enclosed in parenthesis is applicable to Unit 2; the inspection report number not enclosed by parenthesis is applicable to Unit 1. Those inspections identified by Inspection report numbers from Unit 1 and Unit 2, represent inspection activity concerning both units.

Table 3 - Enforcement Summary

<u>Functional Area</u>	<u>Severity Level</u>					<u>Totals</u>
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>	
1. Plant Operations			1	4	1	6
2. Radiological Controls				1		1
3. Maintenance						0
4. Surveillance				1		1
5. Fire Protection				3	1	4
6. Emergency Preparedness						0
7. Security/Safeguards						0
8. Fuel Loading				2		2
9. Licensing Activities						0
10. Construction (Mods) Unit 1/2				10	4	14
11. Quality Programs, Administrative Controls and Other				1		1
			1	22	6	29*

*Numbers exceed total number of violations since one violation spanned two functional areas.

Table 4 - Enforcement Items - Unit 1 and 2, Diablo Canyon

<u>IR#</u>	<u>Subject</u>	<u>Severity Level</u>	<u>Functional Area</u>
323/83-04	Lapsed Acuity certification of NDE personnel.	V	10
275/83-08	Failure to perform welding in accordance with procedural and code requirements.	IV	10
323/83-10	Hold tags removed in violation of procedural instructions for controlling nonconformances.	V	10
275/83-13 323/83-10	Failure to maintain welder qualification in accordance with procedural and code requirements.	IV	10
275/83-13 323/83-10	Inadequate controls to assure welder recertification accomplished in accordance with regulatory and code requirements.	IV	10
275-83-17	Failure to notify Plant Manager or Superintendent of damage to RCS piping.	V	10
275/83-20	Failure to promptly notify the NRC of a reportable occurrence.	IV	1
275/83-24 323/83-17	Failure to install pipe and electrical raceway supports in accordance with quality control procedures.	IV	10
275/83-38	Failure of personnel to evacuate when evacuation alarm sounded. Procedure requirements for exiting Controlled Areas were not followed.	IV	2,8
275/83-39	Welding performed without required "welding and open flame" permit.	IV	5
275/83-39	"Welding and Open Flame" permits not posted at hot work location.	V	5
275/83-39	Fire watch personnel inadequately trained.	IV	5
275/83-40	Equipment Qualification file revised without review verification.	IV	11

Table 4 - Enforcement Items - Unit 1 and 2, Diablo Canyon (cont)

<u>IR#</u>	<u>Subject</u>	<u>Severity Level</u>	<u>Functional Area</u>
275/83-40	Inadequate controls prescribed for preparation, review, and retention of environmental qualification files.	IV	10
275/84-01	Nonconforming welds in Turbine Bldg. structural steel.	V	10
275/83-37 323/83-25	Q.A. inspectors performed weld inspections, prior to fulfilling procedural requirements for certification.	IV	10
275/83-41	Core alterations (initial fuel load) performed with the equipment hatch partially open.	IV	8
275/83-41	Source Range Nuclear Instrumentation deactivated for approx. two minutes during surveillance testing.	IV	1
275/83-41	Bypass of safety functions improperly indicated on jumper control log.	V	1
275/83-41	Welding operations conducted near combustible material and, without suitable fire extinguishers or fire watch present.	IV	5
275/84-02 275/84-02	One control room ventilation system inoperable for a period in excess of the action requirement.	IV	1
323/84-02	Failure to perform welding and bolting activities in accordance with QC procedures and code requirements.	IV	10
323/84-03	Improper control of personnel access to class I materials storage areas.	IV	10
275/84-04	Failure to follow approved QC QC procedures in the area of safety related electrical raceway supports.	IV	10
323/84-05	Failure to follow approved quality control procedures.	IV	10

Table 4 - Enforcement Items - Unit 1 and 2, Diablo Canyon (cont)

<u>IR#</u>	<u>Subject</u>	<u>Severity Level</u>	<u>Functional Area</u>
275/84-06	Failure to maintain an operable ECCS flow path for both centrifugal charging pumps.	III	1
275/84-10	Unacceptable administrative controls on "jumpers" and clearances.	IV	4
275/84-21	Personnel error resulting in a loss of both source range nuclear instruments.	IV	1

Table 5 - Synopsis of Licensee Event Reports (1/1/83-6/30/84)

<u>Functional Area</u>	<u>SALP Cause Codes</u>					<u>Total</u>
	<u>A</u>	<u>B</u>	<u>D</u>	<u>E</u>	<u>X</u>	
1. Plant Operations	7	4		1	2	14
2. Radiological Controls	3			6	2	11
3. Maintenance	3					3
4. Surveillance	5		2			7
5. Fire Protection	3		1			4
6. Emergency Preparedness						0
7. Security/Safeguards						0
8. Fuel Loading	1		1	1		3
9. Licensing Activities						0
10. Construction (Mods)	3	1		1	1	6
11. Engineering/Design						0
12. Pre-operational Testing (Unit 2 only)						0
13. Quality Assurance						0
	25	5	4	9	5	47

Cause Codes:

- A - Personnel Error
- B - Design, Manufacturing, or Installation Error
- D - Defective Procedure
- E - Component Failure
- X - Other

*One LER had two cause codes causing the total to be 48 vice 47 which is the actual number of LERS.

Table 6 - Licensee Event Reports (1/1/83 - 6/30/84)

<u>LER No.*</u>	<u>Summary Description</u>	<u>Functional Area</u>	<u>Cause LER</u>	<u>Codes SALP</u>
83-001/ 03L-0	Steam Generator Blowdown Multipoint Flow Recorder was discovered to be inoperable.	2	E	E
83-002/ 03L-0	Liquid Radwaste Effluent Flow Recorder was discovered to be inoperable during discharge.	2	E	E
83-003/ 03L-0	Liquid Radwaste Discharge Line Radiation Monitor was declared inoperable due to loss of installed check source.	2	X	X
83-004/ 01T-0	Grinding wheel and rotary file gouges were discovered on MC system discharge piping of #3 MCP.	10	X	X
83-005/ 04X-0	An erroneous full up-scale indication was observed on Earthquake Force Monitor following Coalinga earthquake.	1	E	E
83-006/ 01T-0	Ultrasonic thickness measurements of reactor coolant piping welds indicate possible under-wall condition.	10	A	A
83-007/ 01T-0	Welding flaw was discovered in Component Cooling Water System, when water was observed leaking from weld area.	10	A	A
83-008/ 03L-0	New Fuel Storage Area Monitor and Oily Water Separator Effluent Line Monitor were inadvertently de-energized.	2	A	A
83-009/ 03L-0	Power switch to Plant Vent Iodine Sampler was inadvertently moved into "off" position.	2	A	A
83-010/ 03L-0	Power was lost to all Main Control Room Annunciators, due to inadvertent short circuiting of assoc. panel.	1	A	A
83-011/ 03L-0	Monthly surveillance requirement to source check the Oily Water Separator Effluent Line Monitor was missed.	4	D	D
83-012/ 03L-0	Air sample pumps for Plant Vent Radiation Monitors were discovered in the tripped condition.	2	X	X

Table 6 - Licensee Event Reports (1/1/83 - 6/30/84) (Cont)

<u>LER No.*</u>	<u>Summary Description</u>	<u>Functional Area</u>	<u>Cause LER</u>	<u>Codes SALP</u>
83-013/ 03L-0	Air sample pumps for Plant Vent Radiation Monitors were inadvertently de-energized.	2	A	A
83-014/ 01T-0	Binding of torque switch was observed on a Limitorque Valve Operator, precluding remote operation in shut direction.	1	B	B
83-15/ 03L-0	Annunciator window for the Plant Vent Iodine Sampler failed to alarm, as required by procedure, during performance of channel functional test.	4	D	D
83-16/ 03L-0	Plant Vent Flow Rate Monitor was inadvertently de-energized.	1	A	A
83-17/ 03L-0	Power supply breaker for Oily Water Separator Effluent Flow Monitor was tripped open and would not reset.	2	E	E
83-18/ 03L-0	Raw water reservoir was inadvertently left isolated from the fire suppression header, rendering the Fire Suppression Water System technically inoperable.	5	A	A
83-019/ 03L-0	Welding was performed on Containment Spray Additive Tank without first draining the sodium hydroxide solution contained inside.	10	A	A
83-020/ 02L-0	Gaseous Radwaste System Noble Gas Activity Monitor detector tube failed in service, rendering monitor inoperable.	2	E	E
83-021/ 03L-0	Primary meteorological tower air temperature aspirator failed from short in power connector due to environmental exposure.	2	E	E
83-022/ 03L-0	Raw water reservoir was isolated, rendering Fire Suppression Water System technically inoperable, due to an underground water supply line break.	5	A	A
83-023/ 01T-0	Pacific Scientific Snubbers were discovered by vendor to have a potential problem of micro-cracks in the capstan spring tangs.	10	X	B

Table 6 - Licensee Event Reports (1/1/83 - 6/30/84) (Cont)

<u>LER No.*</u>	<u>Summary Description</u>	<u>Functional Area</u>	<u>Cause LER</u>	<u>Codes SALP</u>
83-024/ 03L-0	Power was lost to all Main Control Room Annunciators, due to inadvertent short-circuiting of assoc. panel.	3	A	A
83-025/ 03L-0	Steam Generator Blowdown Tank Vent Gross Activity Monitor failed downscale while in service.	2	E	E
83-026/ 03L-0	Power switch to Plant Vent Iodine Sampler was inadvertently moved into "off" position.	2	A	A
83-027/ 03L-0	Emergency diesel generator (1-2) starting air compressor (1-2A) internal relief valve did not reseal, causing assoc. air receiver to fall below minimum setpoint.	8	E	E
83-028/ 01T-0	Containment Equipment Hatch was not adequately shut during initial fuel load.	8	D	D
83-029	CANCELLED			
83-030/ 03L-0	Surveillance requirement for Channel Functional Test of Triaxial Time-History Accelerographs was not performed as required.	4	A	A
83-031/ 03L-0	Load test surveillance requirement of the auxiliary hoist was not performed within the specified time frame prior to fuel load operations.	8	D	A
83-032/ 01T-0	Fire barrier penetration seal in the RHR pump (1-1) room was non-functional, and without a stationed fire watch.	5	A	A
83-033/ 03L-0	Both channels of source range instrumentation were inappropriately de-energized during the performance of surveillance testing.	4	A	A
83-034/ 01T-0	Several wiring terminations affecting RHR pump control circuits were discovered to be inconsistent with circuit schematics.	5	D	D
83-035/ 03L-0	Valve position verification, of the Fire Suppression and Spray Sprinkler System and the Carbox System, was not performed, as required by the applicable surveillance test.	4	A	A

Table 6 - Licensee Event Reports (1/1/83 - 6/30/84) (Cont)

<u>LER No.*</u>	<u>Summary Description</u>	<u>Functional Area</u>	<u>Cause LER</u>	<u>Codes SALP</u>
83-36/ 03L-0	Main Supply Fan of Control Room Ventilation System tripped on thermal overload, causing the effected train to become inoperable.	1	X	X
84-01-00	Inadvertent safety injection actuation occurred when vital instrument AC supply was grounded by installation of surveillance test equipment.	4	A	A
84-02-00	Both trains of the Control Room Ventilation System were declared inoperable, subsequent to discovering each train was powered from the same vital bus.	1	A	A
84-03-00	A spurious safety injection actuation was initiated by a momentary voltage drop on an instrument AC bus.	1	X	X
84-04-00	For informational purposes of potential generic interest, PG&E and Westinghouse suggest removing the automatic closing interlock affecting RHR system suction valves.	1	N/A	N/A
84-05-00	Diesel Generator (1-2) was automatically started by a 4KV vital bus undervoltage condition due to inadvertent isolation of the normal power supply.	1	A	A
84-06-00	Failure of GE magne-blast circuit breakers to remain closed, which are used in 4.16 KV vital switchgear.	1	B	B
84-07-00	Inadvertent actuation of two ESF ventilation systems when 120V vital instrument A.C. Bus 1-3 de-energized.	1	A	A
84-08-00	Inadvertent safety injection actuation when I&C technician failed to follow procedures of a surveillance test on train of the solid state protection system.	4	A	A

Table 6 - Licensee Event Reports (1/1/83 - 6/30/84) (Cont)

<u>LER No.*</u>	<u>Summary Description</u>	<u>Functional Area</u>	<u>Cause LER</u>	<u>Codes SALP</u>
84-09-00	Automatic start of diesel generator(1-3) on 4KV startup power bus undervoltage condition due to the opening of the Unit 1 startup power feeder breaker.	1	A	A
84-10-00	Inoperable liquid radwaste effluent isolation valve due to an improperly coordinated jumper installation.	3	D	A
84-12-00	Momentary loss of control room main annunciator due to opening of the AC & DC power supply breakers.	3	A	A
84-13-00	Bit inlet and outlet valves were disable rendering the emergency core cooling system.	1	D	AD
84-14-00	An inadvertent actuation of the RPS due to a spurious signal from a protection set with one protection set out of service for a test.	1	X	B
84-15-00	Failed control module in the steam dump control system allowed several dump valves to open, initiating a hi steam flow/LL TAVE reactor trip and safety injection.	1	X	B

*1983 reports ending in 01T-0 were 14-day LERs; reports ending in 03L-0 were 30-day LERs. All 1984 reports were submitted pursuant to a 30-day reporting requirement.

(HOLD THIS ONE)

6. Emergency Preparedness

A routine inspection of the emergency preparedness program and an observation of an emergency preparedness exercise were performed during this assessment period. Neither of these inspections identified any significant deficiencies or violations of NRC requirements. However, both inspections did result in the identification of items that should be considered for improving the emergency preparedness program. Based on the licensee's response to NRC suggested improvement items and participation by the several levels of management in the emergency preparedness exercise, upper management has continued its support of the emergency preparedness training program; however, the inspection showed a need for a reassessment and some changes to better satisfy 10 CFR 50.47(b)(15) and IV.F of Appendix E to Part 50.

Conclusion

Performance assessment - Category 2. This represents a decline in performance from the Category 1 assigned during the previous SALP cycle.

Board Recommendation

- (1) The emergency preparedness training appears to be adequate; however, it should be improved to provide better assurance that personnel will be able to respond to an emergency in accordance with the Emergency Plan and related implementing procedures.
- (2) The change in the category rating from 1 to 2 is based on the results of the routine inspection. Some areas were identified where improvements are needed (e.g., EP training, audits of the EP program). Performance at the present level does not indicate the licensee might reach a Category 3 classification. The results of the EP exercise showed the licensee probably would be classified as Category 1.