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RECIP.NAME RECIPIENT AFFILIATION
SHIFFER,J.D. Pacific Gas & Electric Co.

SUBJECT: Forwards Insp Repts 50-275/89-01 & 50-323/89-01 on 890123-0228 & notices of violation & deviation.

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March 21, 1989

Docket Nos. 50-275
50-323

Pacific Gas and Electric Company
77 Beale Street, Room 1451
San Francisco, California 94106

Attention: Mr. J. D. Shiffer, Vice President
Nuclear Power Generation

SUBJECT: NRC Inspection of Diablo Canyon Units 1 and 2.

Gentlemen:

This refers to the special, announced inspection conducted by Messrs. C. J. Bosted and M. J. Royack of this office, Messrs. E. V. Imbro and S. R. Stein of the office of Nuclear Reactor Regulation, and NRC Contractors, on January 23 through February 28, 1989, of activities authorized by NRC License Nos. DPR-80 and DPR-82, and to the discussion of our findings held with you and other members of your staff on February 3, 1989.

The specific areas examined during this inspection are described in the enclosed inspection report. Within these areas, the inspection consisted of examination of selected Pacific Gas and Electric Safety System Functional Audit and Review (SSFAR) documents, Safety System Outage Modification Inspection Surveillance (SSOMIS) audits, procedures, representative records, interviews with site and corporate office personnel, and observations of related equipment by team personnel.

Based on the results of the inspection, it appears that certain activities were not conducted in full compliance with NRC requirements, as set forth in the Notice of Violation and Notice of Deviation, enclosed herewith as Appendices A and B, respectively. Your response to these Notices is to be submitted in accordance with the provisions stated in the associated Notice. In addition, three apparent violations identified in the enclosed inspection report will be the subject of additional NRC review and will be addressed in future correspondence.

Inspection Overview

The inspection conducted by the team was a review of your Safety System Functional Audit and Review (SSFAR), and Safety System Outage Modification Inspection Surveillance (SSOMIS) inspection programs. The purpose of our inspection was to assess the effectiveness of these programs and to assess the quality of your performance of technical work.

In order for the inspection team to adequately review these programs, the team performed an abbreviated independent SSFAR and SSOMIS type inspection on systems which had been previously reviewed by your programs. The SSFAR and SSOMIS packages that were reviewed included the Auxiliary Saltwater (ASW) System, Control Room Ventilation (HVAC) System, Diesel Generator System,

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Diesel Generator Fuel Oil System, Component Cooling Water (CCW) System, Safety Injection (SI) Pumps, and safety related ventilation systems.

In assessing the associated systems and modification packages, the team focused on the design basis of the systems and the ability of the engineering staff to evaluate and maintain the design basis, when modifying the systems and during system operations. The team evaluated the actual implementation of the design basis through maintenance, surveillance, testing, and plant operational aspects associated with the selected systems.

Team Findings

The inspection of the systems and modification packages identified a number of deficiencies and raised significant questions. The team's findings indicate three areas of generic weakness. The first two of these areas of weakness were previously identified during the NRC Maintenance Team inspection in July 1988. These weaknesses are summarized as follows:

The Plant Staff Does Not Fully Understand the Plant Design Basis

- Plant procedures addressing CCW/ASW operation did not ensure that the operation of the CCW heat exchangers was consistent with design calculations.

- Work was performed on the plant ventilation system apparently without consideration of the effect of the work on plant operation.

- Water level alarm switches in the ASW pump room were removed from the calibration program apparently without considering the function served by the switches.

- 480 volt power cable was routed through the plant without consideration of its affect on electrical separation criteria.

The Interface Between Engineering and the Plant is Weak.

- Analysis of off-normal plant operating conditions which resulted in a need for plant operating procedure changes were not effectively communicated to the operations staff. Procedure changes to insure that a second Component Cooling Water (CCW) System heat exchanger is placed in service when certain CCW pumps were inoperable was not issued as recommended by Engineering. Operation of the plant in other than the mode prescribed by the recommended procedure changes could have resulted in the operation of the plant outside of the safety analysis during an accident.

- Modifications to the GE/GW Ventilation system were made, and a blank flange was used to establish the main stack exhaust boundary. The blank flange was installed without prior engineering input. The field change request used to document the work was issued after the work was completed. Maintenance was performed on this system without the use of normal administrative controls.

Engineering Work Has Been Incomplete or Inadequate.

- Plant modifications, such as the Auxiliary Salt Water (ASW) system pump impeller change, were not adequately reviewed to establish the complete impact on the plant.

- A review of the final seismic analysis for the safety injection pump 2-2 change out was not made until after the applicable unit entered an operating mode in which the pump was required. Preliminary approval was used as justification for a mode change, rather than documented calculations.

- A number of calculations reviewed did not fully identify design assumptions and did not reference input information.

With regard to the conduct of your SSFAR and SSOMIS inspection programs, we are encouraged that you have undertaken this initiative. The team considered the quality of your inspections to have been improving and noted that several significant deficiencies identified by your efforts were vigorously pursued. However, improvements in your inspections is needed, particularly in view of the engineering type problems identified during our inspection. The team has analyzed the findings of this inspection as it relates to your SSFAR and SSOMIS inspection programs and has reached the following conclusions:

- Your SSFAR teams did not perform comprehensive technical evaluations. The focus of the first SSFAR inspections appeared to be focused on administrative verification instead of the type of inspection which emphasizes technical aspects.

- The composition of your SSFAR and SSOMIS inspection teams did not include sufficient numbers of personnel with the expertise/ background to question engineering activities and calculations. When personnel with the expertise to question engineering activities or calculations were assigned to the inspection teams, they were placed in a position of questioning their immediate supervisors or other personnel who have authority over that person.

- The teams begin the inspection with the assumption that the present design is adequate and that design documents, FSAR commitments, and procedures, do not have to be reviewed or questioned. This philosophy unnecessarily limits the depth and scope of your inspection and is not consistent with a high degree of self-criticism.

- Although your inspections did identify significant problems in their later SSFAR inspections, your teams did not take the problems down to the source or root cause, nor did they consider the problems for generic implications; i.e., how many other systems can have this same or similar problem.

You are encouraged to aggressively continue your efforts to conduct your SSFAR and SSOMIS inspections. When properly conducted, we consider this type of effort to be of value in attempting to identify problem areas, prior to those problems becoming self revealing. In addition to the responses directed by

the enclosed Notices, please provide a written response addressing our conclusions regarding your conduct of SSFAR and SSOMIS inspections, as discussed above.

Additionally, as we have previously discussed with you, we propose to meet with you in the near future to discuss the results of your upcoming CCW system SSFAR.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosures will be placed in the NRC Public Document Room.

The responses directed by this letter and the attached Notices are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely

Original Signed

John B. Martin,
Regional Administrator

Enclosures:
1. Appendix A (Notice of Violation)
2. Appendix B (Notice of Deviation)
3. Inspection Report No. 50-275/89-01, 50-323/89-01

cc w/enclosures:
S. M. Skidmore, PG&E
R. F. Locke, PG&E
J. D. Townsend, PG&E (Diablo Canyon)
D. A. Taggert, PG&E (Diablo Canyon)
News Services, PG&E Co.
T. L. Grebel, PG&E (Diablo Canyon)
State of California
Sandra Silver (Report Only)

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