SAFETY EVALUATION REPORT

Diablo Canyon Site, Units 1 & 2

Operations Phase Quality Assurance Program

17.0 Quality Assurance

17.1 General

The description of the quality assurance (QA) program for the operations phase of the Diablo Canyon Site, Units 1 & 2, is contained in Section 17.2 of the Pacific Gas & Electric (PG&E) Final Safety Analysis Report for the plant. Our evaluation of this QA program is based on a review of this information and discussions with representatives from PG&E and the NRC Office of Inspection and Enforcement. We assessed PG&E's QA program for the operations phase to determine if it complies with the requirements of 10 CFR 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," the applicable QA related Regulatory Guides and ANSI Standards listed in Table 1, and the Standard Review Plan, Section 17.2, Rev. 0, dated November 24, 1975, "Quality Assurance During the Operations Phase."

17.2 Organization

The structure of the organization responsible for the operation of Diablo Canyon Site, Units 1 & 2, and for the establishment and execution of the operations phase QA program is shown in Figure 1. The Senior Vice President-Operations, who reports to the President, has been delegated overall responsibility for the safe and reliable operation of the Diablo Canyon Site. He is responsible for establishing Corporate QA policies, goals, and objectives and for executing the QA program.

The Vice President-Nuclear Power Generation reports directly to the Senior Vice President-Operations and is delegated the authority and

responsibility for the development, implementation, and verification of the QA program. These responsibilities are carried out through the Manager of Quality Assurance, Manager of Nuclear Plant Operations, and Manager of Nuclear Projects.

The Manager of Quality Assurance reports directly to the Vice President-Nuclear Power Generation and is delegated the authority and responsibility for developing the QA program and for assessing its effectiveness. He prepares and maintains the QA manual which is approved and authorized by PG&E's President. He is assisted in carrying out his responsibilities by onsite and offsite QA personnel.

Quality Assurance Department personnel are assigned to the Diablo Canyon Site throughout the preoperational and startup phase. This assignment of personnel will continue until the plant reaches routine operations. Thereafter, during periods of routine operation, the Quality Assurance Department will station an engineer at the plant. This engineer (not shown on Figure 1) will report to the Manager of Quality Assurance and maintain close liais n with the plant staff on quality matters. He will audit for compliance with the quality assurance program. During periods involving major repairs or modifications to the plant and during periods of inservice inspection, additional engineers from the Quality Assurance Department will be assigned to the plant.

The QA Department has the authority to identify quality problems; to initiate, recommend, or provide solutions through designated channels; to verify implementation of solutions; and to stop unsatisfactory work

and to control further processing, delivery, or installation of nonconforming items.

The responsibilities of the Manager of Quality Assurance include review of the QA program for plant operation, modification, and repair; preparation and maintenance of the QA manual; and audits of the overall QA program.

The Plant Manager reports to the Vice President-Nuclear Power Generation through the Manager of Nuclear Plant Operations and is directly responsible for assuring the safe, reliable, and efficient operation of the plant and for adhering to PG&E's QA program as set forth in the QA Manual for Nuclear Power Plants.

The Plant Quality Control Supervisor reports directly to the Plant Manager and maintains a direct interface with the QA organization. The Plant Quality Control Supervisor is responsible for assuring implementation of PG&E's QA program at the plant. He is responsible for the independent inspections at the Diablo Canyon Site during the operations phase. The resolution of disputes on any quality assurance matter arising between PG&E organizational elements are resolved by management of the involved organizations.

17.3 Quality Assurance Program

The QA program for the operation of the Diablo Canyon Site, Units 1 & 2, is presented in PG&E's Quality Assurance Manual for Nuclear Power Plants and is supplemented by quality assurance procedures and instructions which provide the detailed instructions and checklists necessary to

implement the QA program requirements. PG&E has committed its QA program for the operations phase to be in compliance with the provisions of the regulatory guidance provided by the NRC in Table 1.

Activities which affect plant quality are prescribed in the Quality Assurance Manual for Nuclear Power Plants. The manual is implemented by procedures and instructions prepared in PG&E departments which delineate how the objectives are accomplished. Onsite QA personnel will verify by audit that power plant operations phase activities conform to the manual.

PG&E's QA program requires that implementing documentation encompasses detailed controls for: (1) translating codes, standards, regulatory requirements, technical specifications, engineering and process requirements into drawings, specifications, procedures, and instructions; (2) developing, reviewing, and approving procurement documents, including changes; (3) prescribing all quality-related activities by documented instructions, procedures, drawings, and specifications; (4) issuing and distributing approved documents; (5) purchasing items and services; (6) identifying materials, parts, and components; (7) performing special processes; (8) inspecting and/or testing materials, equipment, processes or services; (9) calibrating and maintaining measuring and test equipment; (10) handling, storing, and shipping of items; (11) identifying the inspection, test, and operating status of items; (12) identifying and dispositioning nonconforming items; (13) correcting conditions adverse to quality; (14) preparing and maintaining QA records; and (15) auditing of activities which affect quality.

PG&E has established an indoctrination and training program to assure that persons involved in safety-related activities are knowledgeable in QA instructions and implementing procedures and demonstrate a high level of competence and skill in the performance of their quality-related activities.

Quality is verified through checking, review, surveillance, inspection, testing, and audit of work activities. The QA program requires that quality verification be performed by individuals who are not directly responsible for performing the actual work activity.

Inspections are performed with procedures, instructions, and/or checklists by inspectors who have been qualified and certified in accordance with applicable codes, standards, or licensing requirements.

The QA Department is responsible for the establishment and implementation of the audit program which includes both internal and external audits. Audits are performed in accordance with procedures by appropriately trained personnel not having direct responsibilities in the areas being audited. The audit function, which is conducted at scheduled intervals and/or on a random unscheduled basis, includes an objective evaluation of the adequacy of and compliance with QA policies, procedures, and instructions; the adequacy of work areas, activities, processes, items, and records; the performance, training, and qualifications of the operating plant staff; the implementation of the nonconformance control and corrective action program; and the effectiveness of implementation of the QA program.

The QA program requires documentation of audit results and review by management having responsibility in the area audited to determine and

take any needed corrective action. Followup audits are performed to determine that nonconformances are effectively corrected and that the corrective action precludes repetitive occurrences. Audit findings are prepared and issued to responsible management for review and assessment.

17.4 Conclusion

Our review of PG&E's QA program description for the operations phase has verified that the criteria of Appendix B to 10 CFR Part 50 have been addressed in the Diablo Canyon Site, Units 1 & 2 QA program.

Based on our review and evaluation of the QA program description contained in Section 17.2 of the Final Safety Analysis Report for the Diablo Canyon Site, Units 1 & 2, we conclude that:

(1) The QA organization of PG&E provides independence from cost and schedule (when opposed to safety considerations), authority to effectively carry out the operations QA program, and access to management at a level necessary to perform their QA functions.

(2) The QA program, with the exception of the open items listed below, describes requirements, procedures, and controls that, when properly implemented, comply with the requirements of Appendix B to 10 CFR Part 50 and with the acceptance criteria contained in Standard Review Plan Section 17.2.

Accordingly, the staff concludes that PG&E's description of the QA program, with the exception of the open items listed below, is in compliance with applicable NRC regulations.

17.5 Open Items (Quality Assurance)

(1) The staff has recently completed its review of the systems, structures, and components which should be under the control of the QA program (2/26/81).* Upon receipt of an acceptable response from PG&E with appropriate revision of Table 3.2-4, this item will be closed.

(2) A second round of five questions regarding the extensive revisions of Chapter 17 submitted in Amendment 85 of the FSAR has recently been forwarded to PG&E (2/26/81).* As above, this item will be closed upon receipt of an acceptable response.

*Draft provided informally to LPM on 2/4/81 and to PG&E on 2/10/81.

TABLE 1

REGULATORY GUIDANCE APPLICABLE TO QUALITY ASSURANCE PROGRAM

1. Regulatory Guide 1.8-Rev. 1-R, "Personnel Selection and Training," (9/75).

2. Regulatory Guide 1.30, "Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electrical Equipment," (8/11/72).

3. Regulatory Guide 1.33-Rev. 2, "Quality Assurance Program Requirements (Operation)," (2/78).

4. Regulatory Guide 1.37, "Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants," (3/16/73).

5. Regulatory Guide 1.38-Rev. 2, "Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants," (5/77).

6. Regulatory Guide 1.39-Rev. 2, "Housekeeping Requirements for Water-Cooled Nuclear Power Plants," (9/77).

7. Regulatory Guide 1.58, "Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel," (9/80).

8. Regulatory Guide 1.64-Rev. 2, "Quality Assurance Requirements for the Design of Nuclear Power Plants," (6/76).

9. Regulatory Guide 1.74, "Quality Assurance Terms and Definitions," (2/74).

10. Regulatory Guide 1.88-Rev. 2, "Collection, Storage, and Maintenance of Nuclear Power Plant Quality Assurance Records," (10/76).

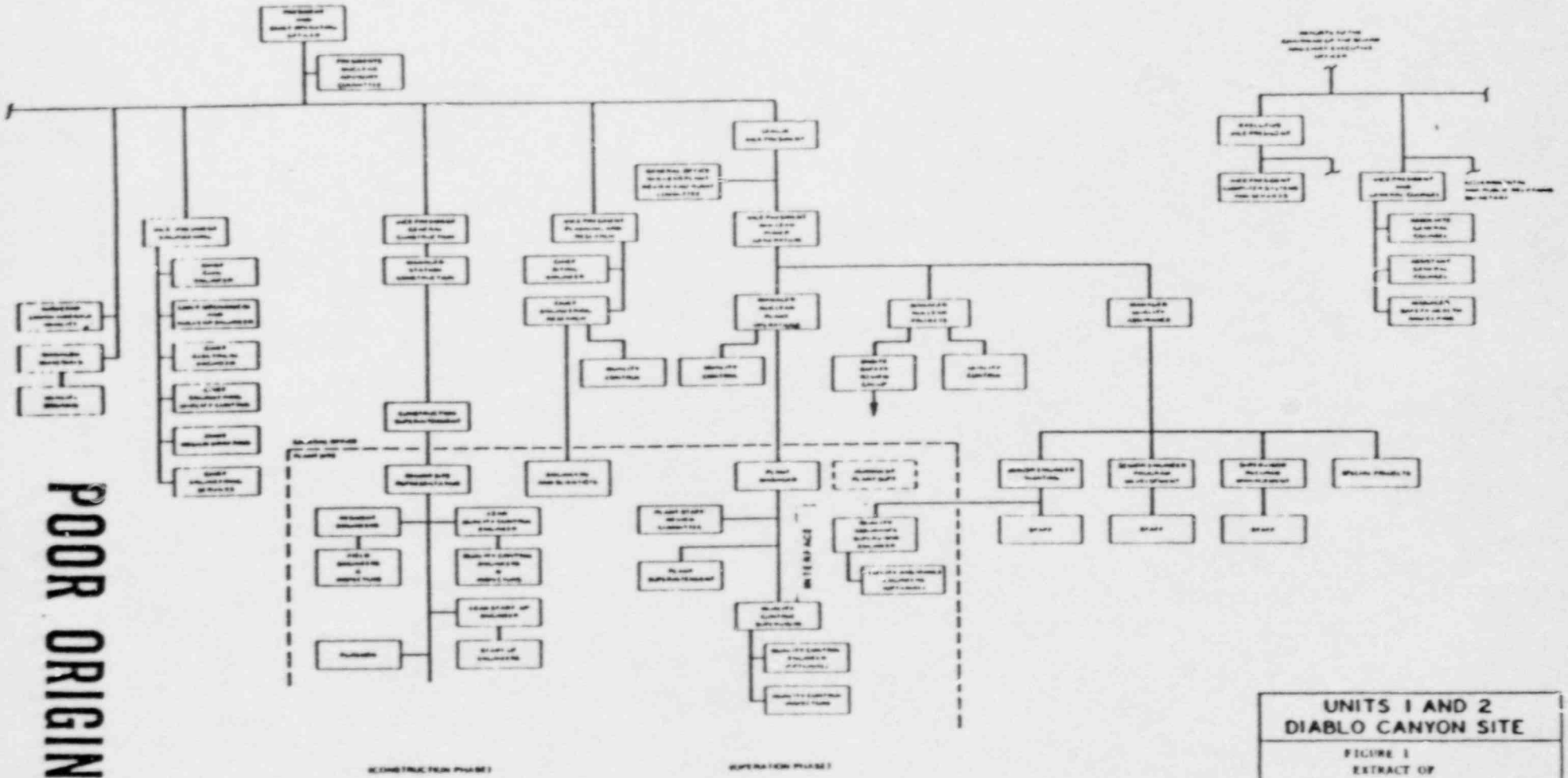
11. Regulatory Guide 1.94-Rev. 1, "Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants," (4/76).

12. Regulatory Guide 1.116-Rev. 0-R, "Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems," (5/77).

13. Regulatory Guide 1.123-Rev. 1, "Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants," (7/77).

14. Regulatory Guide 1.144, "Auditing of Quality Assurance Programs for Nuclear Power Plants," (1/79).

15. Regulatory Guide 1.146 "Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants," (8/80).



UNITS 1 AND 2
DIABLO CANYON SITE

FIGURE 1
EXTRACT OF
PG&E ORGANIZATION CHART
EMPHASIZING QUALITY ASSURANCE