

ALLEGATION 65, 167
166, 138
DFK 3/2/84

PACIFIC GAS AND ELECTRIC COMPANY

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J. O. SCHUYLER
VICE PRESIDENT
NUCLEAR POWER GENERATION

February 29, 1984

P&E Letter No: UCL-84-030

Hr. John B. Martin, Regional Administrator
U. S. Nuclear Regulatory Commission, Region V
1450 Maria Lane, Suite 210
Walnut Creek, CA 94596-5360

Re: Docket No. 50-275, OL-DPR-76
Diablo Canyon Unit 1
SECY 84-61, Items 65 and 167

Dear Hr. Martin:

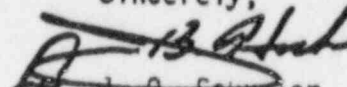
At the January 19, 1984 exit interview at Diablo Canyon Power Plant, the HRC raised questions regarding contractor quality records. In response to those questions, P&E is providing the enclosed description of the program for H. P. Foley Company quality records review and turnover to P&E.

With regard to Pullman Power Products ("Pullman") records, Pullman turned all quality records over to P&E in 1977 and 1981. A small portion of these records has been returned to Pullman to facilitate modifications performed following the turnover.

Quality records of all other contractors have been turned over to P&E.

Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Sincerely,


J. O. Schuyler

Enclosure

cc: U. G. Eisenhut
M. E. Schierling
Service List

8601130380 840229
PDR FOIA
GARDEB4-21 PDR

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ENCLOSURE

PGandE RESPONSE ON FOLEY

QUALITY ASSURANCE RECORDS

I. REQUEST FOR INFORMATION

On January 17 and 19, 1984, representatives of NRC Region V requested Pacific Gas and Electric Company (PGandE) to describe the program for H. P. Foley Company (HPF) quality records review and turnover to PGandE.

II. PROGRAM DESCRIPTION

The program for review and turnover of Unit 1 records from HPF to PGandE consists of the following elements:

- A. Record Definition
- B. Record Review
- C. Verification That Records Cover All Activities and Work
- D. Turnover Program
- E. Records Storage

The details of these elements, including a discussion of past and current practices, follow:

A. RECORD DEFINITION

PGandE contract specifications for HPF work require the contractor to retain all quality-related records for a period of ten years and contain a listing of typical types and categories of quality records consistent with 10CFR50, Appendix B. At the end of this ten year period, the contractor is required to contact PGandE and obtain direction for records disposition. A typical specification disclosing records retention is attached (Attachment 1).

PGandE will provide additional written direction to HPF by March 5, 1984, further defining quality records and identifying those records which are to be turned over to PGandE.

B. RECORD REVIEW

Foley quality records have been continuously reviewed by HPF and PGandE since 1970. During the entire period of HPF involvement at Diablo Canyon, each HPF quality control (QC) discipline supervisor has been responsible for performing an independent technical record review of quality records associated with work performed in that discipline. This responsibility has continued until the present and is documented in HPF Procedure QCP-17. However, a significant change in record review methodology occurred in June 1983. The details are provided in Section B.2.

B.1 REVIEW OF HPF 1970 - 1977 RECORDS

From 1970 to 1977, HPF's work was limited to electrical installation activities. During this period, the quality of the physical work and corresponding documentation was continuously inspected and audited by PGandE's General Construction Quality Control (GC/QC) and Quality Assurance (QA) organizations. The audits covered construction activities, equipment installations, documentation packages, and other quality-related elements. During that period, GC/QC performed 90 audits while QA performed 34 audits. Additionally, HPF conducted its own extensive program to audits and inspections of records. Indeed, in the period 1970 to 1977 alone, HPF conducted some 600 audits of records activities.

In particular, a series of 18 audits of HPF records management were performed in 1976. These audits specifically centered on document control, quality, adequacy, and retrievability. These random sample audits consisted of detailed technical reviews of electrical quality records, including discrepancy reports. The audits resulted in no nonconformance reports (NCRs) or modifications; however, some of the clerical and/or administrative findings prompted a further review of records to verify proper record quality.

The review of all remaining records was completed in early 1977 and has been documented in a 90-page audit report. Findings identified during this review were resolved without plant modification. Follow-up audits were performed by PGandE to verify that HPF had properly identified and implemented corrective action. As a result, PGandE has a high level of confidence that HPF has adequate documentation to support the quality of the Diablo Canyon work.

B.2 REVIEW OF HPF 1977 - 1984 RECORDS

In 1977 HPF's scope of work was enlarged to include the installation of mechanical equipment, instrumentation, HVAC, as well as miscellaneous civil and architectural installation. Nonetheless, from 1977 through 1981, the vast majority of HPF activities was concentrated on electrical and instrumentation work, including TMI related work. However, beginning in 1982, HPF's work activity increased significantly due to construction activities associated with modifications arising from the Corrective Action Program (detailed in the PGandE Phase I Final Report).

During the period from 1977 through 1983, HPF QA and PGandE QA and QC performed 358 audits of HPF's construction activities and associated documentation.

The increase in HPP's work force (from 403 in September 1981 to 3,371 at the peak of construction in August 1983) prompted additional actions to assure that HPP quality records documented during this period were adequate. Accordingly, in the Spring of 1983, PGandE directed HPP to perform a review of the technical and administrative adequacy of all HPP records completed during and after September 1981. The "cutoff" date of September 1981 was chosen in order to assure that all quality records completed during and after the increase in HPP work were included in the review. This new review program was applied both to previously-reviewed and accepted records closed between September 1981 and June 1983 and to new records completed after June 1983. The results of the review of these "new" records completed after June 1983 are not part of the sample used to draw conclusions concerning the adequacy of pre-September 1981 records. The results of this new review provide important information concerning the adequacy of all HPP quality records and quality work.

The review was divided into two parts--technical and administrative. The technical review verified that quality records properly documented the installation as described by current design documents. The administrative review verified that the records were properly prepared by qualified individuals. The administrative review included verification that records were properly corrected, all blanks were filled, sheets were properly numbered, and proper reference was made to procedures and other documents. The administrative review also verified that inspectors were certified or qualified, initials were in accordance with the signature register, and records received proper management approval.

B.2.1 RESULTS OF HPP POST-SEPTEMBER 1981 RECORDS REVIEW

The technical review of records required for fuel load and for operational modes 3, 4, and 5 is now complete. Very few additional records are required to be reviewed for modes 2 and 1. The administrative review of all quality records is approximately 35% complete. Both of these reviews have identified a total of 32 deficiencies. Resolution of these deficiencies has resulted in the identification of the following items which required or may require physical rework or modification:

1. One electrical raceway support was added due to an overspan condition.
2. Five electrical raceway supports required re-stenciling to correct identification numbers.
3. Cable traceability could not be readily established for 31 circuits.

The remainder of the findings were resolved without physical rework or modification. Resolution involved clarification and correction of records, physical inspection and verification of the adequacy of installations and, in some cases, review and acceptance by Engineering of the as-built condition of plant installations.

No significant systematic or generic problems were identified in this review. The one electrical raceway support which required physical work as a result of the review does not indicate any systematic or generic problem when one considers the large number of installations for which quality records were reviewed. Nor did the electrical raceway support re-stenciling represent a significant finding, since the physical work required was not necessary for the supports to meet all design requirements.

As for the cable traceability matter, this particular item had not previously been reviewed in detail. Accordingly, prior to power ascension, HPF will verify traceability of all design Class I cable installations.

B.3 REMAINING REVIEW ACTIVITIES OF HPF RECORDS

In response to questions from representatives of NRC Region V concerning HPF records review and turnover, PGandE proposes the following program for the remaining record review activity. The program is based upon the results of the post-September 1981 records review as discussed in Section B.2.1. This four-part program will provide added assurance that the quality records documenting HPF's work are of acceptable quality. The program includes reviews by HPF and PGandE and spans the entire time period associated with HPF work. Further, this program provides for both technical and administrative reviews of the records where appropriate. However, some categories of work have been excluded from further review as noted in Attachment 2.

1. HPF post-September 1981 records review. HPF will revise the procedures for the post-September 1981 records review program to enhance its effectiveness, and will complete the program prior to commercial operation.
2. HPF pre-September 1981 records review. HPF will perform a detailed document review to assure that records were properly prepared. This will be done prior to commercial operation.
3. HPF review of cable traceability. To provide further assurance of appropriate documentation of Class I cable installation, HPF will verify their traceability prior to power ascension.
4. PGandE records review. PGandE will perform a review of document packages turned over by HPF to assure they have been properly prepared. This review will include inspection, on a random basis, of construction items which are complete and accepted by HPF to verify that HPF quality records adequately document installation according to design documents.

The details of this four-part program follow.

B.3.1 HPF POST-SEPTEMBER 1981 RECORDS REVIEW.

HPF will complete its post-September 1981 records review. This review has been structured to the criteria and scope as described in Attachment 2. Based upon the review completed to date, the following changes are being made to record review procedures:

- (1) Clarification of the definition of conditions which require issuance of an NCR.
- (2) Clarification of the definition of approval levels and documentation requirements for quality record changes and/or corrections.
- (3) Additional training of HPF document analysts in HPF's quality administrative procedures.

The following actions, which will be reviewed and approved by PGandE, are being taken:

- (1) PGandE will direct HPF to modify their Procedure QCP-3, Processing and Control of Deviations and Nonconformances, to further clarify conditions which require the issuance of a Nonconformance Report, including programmatic problems not directly associated with the quality of installation and their related corrective actions. This item is scheduled to be completed by March 15, 1984.
- (2) HPF instructions which outline the document review process will be revised to specify the approval levels and documentation required for changes or corrections to quality records. This is scheduled to be completed by March 15, 1984.
- (3) HPF has incorporated into its training program for document analysts, specific directions which assure a uniform method of conducting document reviews. Training materials, such as specifications and procedures as well as any discussion on applicable quality administrative instructions, are documented and placed in a training file for each individual.

The HPF review of records completed after September 1981 will be completed prior to commercial operation.

B.3.2 HPF PRE-SEPTEMBER 1981 RECORDS REVIEW

HPF is performing a review of records completed prior to September 1981. The criteria and scope of the review is provided in Attachment 2.

This HPF review has been initiated, and will be completed, including record turnover, prior to commercial operation. An interim report on progress of the review, including any findings and their significance, will be provided prior to power ascension.

B.3.3 HPF REVIEW OF CABLE TRACEABILITY

To provide assurance of appropriate documentation of Class I cable installation, HPF will verify traceability prior to power ascension. This verification effort will include a review of each pull package by circuit.

B.3.4 PGandE RECORDS REVIEW

In addition to the HPF review, PGandE will perform its own administrative review of documentation packages turned over to PGandE by HPF. This review will parallel the HPF record turnover and will include:

- (1) Verification that all documentation packages listed on HPF's index are included.
- (2) Verification that all documentation packages have been certified by HPF as being complete and correct.
- (3) An audit of the documentation packages. Each package in the sampling will be completely reviewed to ensure that the package contents are complete, correct, legible, and included according to the package index.
- (4) Cross-references will be developed of Foley NCRs to Foley work packages using PGandE's computer-based Records Management System (RMS). This work will be completed during entry of all contractor documents into the RMS.

Verification of all reviews will be documented on Document Review Reports (DRRs). During the review process, document packages and/or individual documents identified as missing, incomplete, incorrect, and/or illegible will be referred to HPF for corrective action. PGandE will perform follow-up reviews on the corrections of the deficiencies noted and, if generic problems are apparent, they will be investigated and resolved.

Additionally, PGandE GC/QC will continue to inspect, on a random basis, construction items which are complete and accepted by the contractor to confirm the following:

- (1) Installation meets latest design documents.
- (2) Inspection records are complete regarding inspection activities.
- (3) Procedure and specification requirements are met.
- (4) Required backup documentation is supplied (e.g., weld records, megger test records, pull tension calculations).

C. VERIFICATION THAT RECORDS COVER ALL ACTIVITIES AND WORK

To verify that all required quality records are in place and available for transfer to PGandE, HPP will perform crosschecks between work initiation documents and existing quality records. This program will be controlled by approved procedures and completed for each work package and work activity prior to record turnover to PGandE.

D. TURNOVER PROGRAM

Previous direction to HPP regarding quality records turnover has been provided by PGandE correspondence. The following procedures and instructions provide additional direction for records turnover:

- (1) PGandE Quality Assurance Policy Statement - Quality Assurance Manual, Section XVII, Quality Assurance Records.
- (2) PGandE Procedure for Receipt, Review, Indexing, and Storage of Records - Quality Assurance Department Records Management Handbook, Part II.

In addition, the following procedures and instructions have been recently prepared to provide further direction for records turnover.

- (1) General Construction Instruction QCFI-3, Document Review of Contractor Generated Records.
- (2) General Construction Instruction QCFI-4, Contractor's Record Turnover.
- (3) HPP Procedure QCP-34, Safekeeping, Processing, and Turnover of Quality Assurance Records (this procedure has been approved by PGandE).
- (4) HPP Quality Assurance Instructions (QAIs) implementing QCP-34. PGandE will review and approve these QAIs to verify proper implementation of QCP-34.

In addition, a PGandE turnover task force has been established to review federal, industry, and PGandE documentation requirements regarding contractor records. This task force is currently creating a generic turnover interface procedure which outlines the QA Program records turnover requirements. All existing turnover procedures and instructions will be reviewed and revised to comply with the turnover interface requirements outlined in the generic turnover interface procedure.

E. RECORDS STORAGE

Currently most HPP quality records are stored in 1 hour fire-rated file cabinets. The HPP records storage building is being upgraded to include automatic halon fire suppression and alarms. The facility upgrade will be completed by March 31, 1984. In the interim, a continuous security and fire watch will be posted in addition to the existing strict access control.

After the facility has been upgraded, all completed HPF quality records will continue to be stored in 1 hour-fire rated file cabinets within the facility. As HPF quality records are turned over to PGandE, the records will be removed from the HPF vault and stored in the GC/QC records storage vault, which meets the ANSI N45.2.9 single storage facility criteria.

ATTACHMENT 1

The following quote, taken from PGandE specification 8802 is a typical section in PGandE specifications on the use and maintenance of contractor records:

4.1211 Records: Contractor shall use, collect, and maintain records and data essential to document the quality of material supplied and work performed under this Specification. Records are considered one of the principal forms of objective evidence of quality, and procedures shall assure that records are complete and reliable. All records shall be collected and filed at one location at manufacturing shops or at the work site. Records collected shall include, as a minimum, the following: drawings, specifications, purchase orders, work orders, inspection reports, test reports, work performance records, work procedures, qualification records for procedures, equipment and personnel, nonconformance reports, corrective action records, and audit records. Inspection and test reports shall indicate the nature of observations or tests, and acceptable limits of observations or tests, the results, the type of nonconformances observed, and the identity of the observing personnel. Work performance records shall indicate acceptability of the work and/or material or necessary corrective action in cases of nonconformances. All records shall be preserved by Contractor for use by Company for ten years. If Company has not requested custody of the records and documents before the end of the ten-year period, Contractor shall request disposition instructions from Company. Until such time as they may be transferred to Company, the records and documents shall be available for inspection and review by Company and regulatory agencies. Upon request, duplicate copies of records and documents for specific items shall be provided promptly by Contractor to Constructor.

ATTACHMENT 2

CRITERIA AND SCOPE OF HPF REVIEW OF RECORDS

I. CRITERIA

- A. All appropriate spaces on the records shall be filled in, pages shall be in numerical order, and the records package shall be complete.
- B. All data on the records shall be clear and legible.
- C. Signatures, initials and dates shall be authorized, approved, and affixed where required.
- D. Records shall be accurate and properly identified. Appropriate inspection report references shall be affixed.
- E. Records shall be indexed and packaged for turnover to PGandE.

Any problems identified will be promptly corrected in accordance with the modified document review process procedures and, if required, will be documented in accordance with the modified nonconformance procedure.

II. SCOPE

With the exception of certain categories of records in specific time periods, all records will be reviewed. These exceptions include records of installations for which other documents confirm installation and/or performance to the extent necessary to validate proper plant operation and maintenance. The following is a list of record categories that are excluded from the review.

- A. Wire Terminations. Performance is proven by instrument loop tests, electrical dry run tests, and startup functional tests. These tests are performed and documented by PGandE. Terminations are as-built and recorded on PGandE Engineering record drawings.
- B. Wire Installation. Performance is proven by instrument loop tests, electrical dry run tests, megger tests, and startup functional tests. These tests are performed and documented by PGandE. The as-built configuration of circuits is recorded on PGandE record drawings.

- C. Raceway Installation. All raceways were walked down in 1982 and 1983 by Project personnel to verify spacing and location of supports. The resulting recorded data were reviewed and accepted or modifications were issued. In 1983, Project personnel walked down all Design Class I raceways to verify separation of redundant circuits. Therefore, installations completed prior to 1982 are documented and known to be correct and no further review of these documents is planned. Records completed in 1982 and later will be reviewed.
- D. Raceway Support Installation. All raceway supports were walked down and as-built by Project personnel in 1982 and 1983. The resulting data were reviewed and accepted by Engineering or modifications were issued. Therefore, all installations completed prior to 1982 are documented and known to be correct and no further review of these documents is planned. Records completed in 1982 and later will be reviewed. Welding and anchor bolt installation quality was not verified as a part of these walkdowns and engineering evaluations. However, the quality of anchor bolt installations has been verified by other reviews and our findings are documented in letters to the NRC dated January 27, February 7, and February 16, 1984. Therefore, all welding records associated with these installations will be reviewed.
- E. HVAC Duct Installation. The HVAC system has been tested by Project personnel and consultants to verify air flows at all locations comply with design criteria. The results are documented. Also, startup tests have been performed, documented, and results accepted. The duct configuration and location are as-built and shown on PGandE drawings.
- F. HVAC Support Installation. All HVAC supports were walked down and as-built by Project personnel in 1982 and 1983. The resulting data were reviewed and accepted by Engineering or modifications were issued. Therefore, all installations accomplished prior to 1982 are documented and known to be correct and no further review of these documents is planned. Records completed in 1982 and later will be reviewed. Welding and anchor bolt installation quality was not verified as a part of these walkdowns and engineering evaluations. However, the quality of anchor bolt installations has been verified by other reviews and our findings are documented in letters to the NRC dated January 27, February 7, and February 16, 1984. Therefore, all welding records associated with these installations will be reviewed.