

U. S. ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE

REGION V

INSPECTION REPORT

CO Report No: 71-002

Subject: Pacific Gas and Electric Co.

Docket No. 050-0275

Diablo Canyon Unit No. 1

License No. CPPR-39

Location: San Luis Obispo County

Category A ← ?

California

Dates of Inspection: June 23-25, and 30, 1971

Dates of Previous Inspection: April 12, 13 and 14, 1971

Type of Licensee: PWR-3250 Mwt

Type of Inspection: Routine, Announced

Principal Inspector: *A. D. Johnson*
A. D. Johnson, Reactor Inspector

7/22/71
Date

? →

Other Accompanying Personnel: None

Reviewed By: *G. S. Spencer*
G. S. Spencer, Senior Reactor Inspector

7/22/71
Date

Proprietary Information: None

SECTION I

Enforcement Action

None

Licensee Action on Previously Identified Enforcement Matters

None required

Unresolved Items

- A. Documentation was unavailable to show that wall thickness of primary system valve castings satisfy design requirements. (Para. 6)

Status of Previously Reported Unresolved Items

None reported

Unusual Occurrences

None

Design Changes } ?

None

Persons Contacted

The following personnel were contacted during the inspection.

PC&E

H. R. Hersey - Project Superintendent
G. V. Richards - Director, Quality Engineering
L. J. Garvin - QA Engineer
W. W. Wood - QA Engineer
V. E. Steen - QA Engineer - San Francisco
D. Landes - QC Engineer, Civil

Corporate Management Interview - San Francisco

J. D. Worthington - Senior Vice President
F. F. Mautz - Vice President, Engineering
M. H. Chandler - Manager, Section Construction
R. S. Bain - Construction Superintendent
W. J. Lindblad - Project Mechanical Engineer
V. E. Steen - QA Engineer
M. R. Tresler - Mechanical Engineer
A. A. Craig - Engineer, Safety Analysis Report Group

Management Interviews

Separate management interviews were held by A. D. Johnson with project management at the site on June 24, 1971, and at PG&E's request with corporate management in PG&E's offices in San Francisco on June 30, 1971. The items discussed in both interviews were the same. PG&E's stated positions represent those of the corporate management which were consistent with those of the onsite project management. The following items specifically related to the inspection activities of Unit No. 1.

- A. Documentation at Site - Lindblad stated that the Westinghouse Quality Control Release (QCR) system and PG&E's Engineering Release system will be reviewed to assure that design changes made by Westinghouse or PG&E are appropriately incorporated in the as-built description of the plant and included in the FSAR. (Paragraph 4)
- B. Wall Thicknesses of Valves - Lindblad stated that a review of available QA documents, including those at vendors, would be made to determine whether or not documented results of wall thicknesses on major primary system valves are available. In the event they are not, Lindblad said that a program would be developed and implemented to assure that the valves to be installed in the Diablo plants satisfy the pertinent design requirements concerning wall thickness. He added that the wall thicknesses of several valves supplied by Darling to Westinghouse are scheduled to be checked during the first week of July. (Paragraph 5)
- C. Site Construction Records - Chandler stated that a survey will be conducted to determine what records are maintained by the several contractors on site and which of the records are available to PG&E and AEC for audit purposes. (Paragraph 6)

In addition to the above items, the inspector reviewed for the benefit of management the concerns raised by the inspector during the past year and the responses by the responsible PG&E personnel. The inspector indicated that all previous items brought to PG&E's attention appear to have been reviewed and resolved by the appropriate PG&E personnel.

SECTION II

Additional Subjects Inspected, Not Identified in Section I, Where No Deficiencies or Unresolved Items Were Found

1. Status of Construction

Project construction was estimated to be 23.3% completed as of June 24, 1971. Percent completion of individual structures were estimated to be as follows:

Auxiliary Building	53.9%
Fuel Handling Building	32.2%
Containment Building	47.1%
Turbine Building	89.8%

The hot functional tests are scheduled to commence during the fall of 1973 with initial fuel loading to occur late 1973 or early 1974.

2. Procedures and Records

a. Control Rod Drive Mechanisms

- (1) Westinghouse QCR's
- (2) Purchase order
- (3) General specifications
- (4) Drawings which include detailed specifications
- (5) Equipment history

b. Steam Generators

- (1) QCR's - Showed four variances from design specifications. These were currently being evaluated by design engineering. The variances concerned:
 - (a) Dimensions
 - (b) Heat treatment
 - (c) Undersized ligaments
 - (d) Contour data on elliptical heads
- (2) Previously reviewed handling and receiving inspection procedure and results.
- (3) Equipment history.

c. Pressurizer

- (1) Equipment history record
- (2) Record of routine surveillance
(0.5 psig nitrogen atmosphere)
- (3) Previously reviewed receiving inspection results

d. Safety Injection Pumps

- (1) Equipment history record
- (2) Routine surveillance records
(Pump rotated monthly and temperature control)
- (3) PG&E approved installation procedure

e. Reactor Coolant Pumps

- (1) Equipment history
- (2) Receiving inspection results
- (3) Routine surveillance records

PG&E's Receiving, Inspection, Handling and Storage Procedures for materials and equipment.

PG&E's QA procedure PRE-14 Engineering Release. This procedure provides a mechanism for the PG&E responsible engineer to release equipment for installation by indicating that items for Class I components have been fabricated satisfactorily.

3. Review of QC System for Other Class I Components

Components selected for review included:

- a. Control rod drive mechanisms (stored at Pismo Beach)
- b. Reactor coolant pumps (stored at Pismo Beach)
- c. Steam Generators (stored on site)
- d. Pressurizer (stored at Pismo Beach)
- e. Safety Injection Pumps (stored in Auxiliary Building)
- f. Pressurizer Safety Valves (not received)
- g. Main Steam Isolation Valves (not received)
- h. Absolute Filters for Containment Ventilation System (not received)

The inspector confirmed that for other Class I materials and components received at the project for installation in the plant PG&E approved procedures have provided for: (1) receipt inspection and handling, (2) special handling and storage precautions (3) quarantine of nonconforming components (4) installation specification and procedure and (5) installation inspections.

In addition, appropriate records of storage and routine inspections were found to be as required by the approved procedures.

Details of Subjects Discussed in Section I

4. Documentation at Site

Records were reviewed to determine whether or not documentation available at the site was in sufficient detail to permit verification that the control rod drive mechanisms had been constructed as described in the PSAR. The pertinent documentation included the drawings which showed appropriate specifications and the Westinghouse quality control release forms which certify that the delivered rods met the specification requirements.

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During the review of the drawings it was apparent that several design revisions to the mechanisms had been made. However, the drawing identified the revisions pertinent to the mechanism delivered to Diablo. The purchase order essentially provides only the number of rods to be delivered. Westinghouse then determines what mechanisms are to be used under their NSS supplier contract with PG&E. This arrangement thereby permits Westinghouse latitude in adding design improvements as appropriate. However the arrangement raised the question as to whether appropriate design changes are reflected in the PSAR if the as-built rods differ from the description provided in the PSAR. For the materials and components obtained other than through Westinghouse, the recently issued Engineering Release QA procedure provides a mechanism to assure materials, components and systems are consistent with requirements. For Westinghouse supplied equipment, the responsible engineer relies to a great extent on the Westinghouse QCR's in approving a given engineering release.

As noted in Section I of this report PG&E intends to determine the mechanism in the Westinghouse QA program which assures that substantial design changes are reflected in the description supplied to PG&E by Westinghouse for inclusion in the PSAR. Also a review of the engineering release procedure will be made to assure that it fulfills the desired purpose.

5. Wall Thicknesses of Valves Within the Pressure Boundary of the Primary Coolant System

The inspector inquired as to whether documentation was available to provide evidence that measurement had been made to verify that valve casting wall thickness conforms to the design requirements. According to Richards, such documentation was unavailable at the present time. Richards stated that several valves supplied by Darling Co. through Westinghouse were scheduled to be checked during the first week of July. Richards also stated that the vendor inspection branch was in the process of determining whether or not such measurements are made and recorded during the manufacturing process. He indicated that where records are unavailable, a program will be formulated to assure confirmation that design requirements have been met. This would be limited to valves installed within the primary system pressure boundary and of such size that gross failures would result in leakage greater than the capability for makeup to the reactor coolant system.

6. Site Construction Records

The contractors at the site maintain various logs and records in addition to records prescribed by the several QA programs. The inspector discussed with Richards the need to determine what records are maintained at the

site which may contain information related to quality of materials, components, equipment, or work performance and which records are available for PG&E and/or AEC audit. In view of the number of contractors and subcontractors currently performing work at the site and the possible need for contractual interpretations, Richards was of the opinion that PG&E would prefer to review the subject with the individual contractors and make available the requested information to the inspector during the next routine inspection. The inspector concurred that this approach was probably the most reasonable of the alternate methods available.