U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION V

Report No. 50-275/80-22
50-323/80-11

License No. 50-275/50-323 Priority CPPR-39, CPPR-69 Category

Licensee: Pacific Gas and Electric Company
P. O. Box 7442
San Francisco, California 94106

Facility Name: Diablo Canyon Units 1 and 2

Inspection at: Diablo Canyon Site, San Luis Obispo County, California and Corporate Office

Inspection conducted: December 2-5 and 10, 1980

Inspectors: D. F. Kirsch 12-23-80
D. F. Kirsch, Reactor Inspector Date Signed

Date Signed

Date Signed

Approved by: R T Dodds 12/23/80
R. T. Dodds, Chief, Engineering Support Section Date Signed
Reactor Construction and Engineering Support Branch

Summary:

Inspection during period of December 2-5 and 10, 1980 (Report Nos. 50-275/80-22 and 50-323/80-11)

Areas Inspected: Routine unannounced inspection by a regional based inspector of construction and modification activities including; licensee action on previous inspection findings, 50.55(e) items and potentially generic issues; QA audits and cleanup crew work control system procedures, work observation and record review. The inspection involved 25 inspector hours by one NRC inspector.

Results: No items of noncompliance or deviations were identified.

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DETAILS

1. Individuals Contacted

a. Pacific Gas and Electric Company (PG&E)

M. R. Tressler, Supervisory Project Control Engineer
J. B. Hoch, Project Engineer
R. A. Young, Acting Project Design Coordinator
M. V. Williamson, Senior Licensing Engineer
R. M. Laverty, Mechanical Systems Group Leader
G. H. Moore, I&C Supervisor
*R. D. Etzler, Project Superintendent
*D. A. Rockwell, Resident Electrical Engineer
*R. T. Twiddy, QA Supervisor
*S. J. Foat, Coordinating QC Engineer
M. E. Leppke, Resident Mechanical Engineer
J. Bratten, QC Inspector
C. A. Hemstock, Cleanup Crew General Foreman
C. Braff, Supervisory Mechanical Engineer
S. Wellmaker, Cleanup Crew Welding Foreman
R. J. Quaid, Cleanup Crew Foreman
K. Dougherty, Cleanup Crew Foreman

Various other crafts and QC personnel

b. Pullman Power Products (Kellogg)

H. Karner, QA/QA Manager

c. Other Personnel

*T. Young, NRC Senior Resident Inspector

*Denotes exit interview attendee

2. Licensee Action on 50.55(e) Items

a. Control of Aluminum Inventory Inside Containment

The licensee had verbally reported on September 24, 1980 the possible construction deficiency involving failure to comply with procedures for documenting and accounting of aluminum inside the containment. The licensee's written report, submitted by letter dated October 27, 1980, indicated that an audit of aluminum items in the Unit 1 containment confirmed that the aluminum inventory was about 55 pounds less than that allowed by the FSAR and a review of the Unit 2 containment revealed that the amount of aluminum did not differ substantially from that in Unit 1. As such, the licensee does not consider the item reportable under the rules of 10 CFR 50.55(e). The

licensee had reviewed its aluminum control program and taken precautionary measures to issue adequate control over containment aluminum inventory.

The inspector examined the licensee's aluminum inventory control system. Discussions with corporate engineering personnel identified that: (1) an inventory log, used to generate the data for FSAR Table 6.2.2.7, was destroyed following NRR approval of the February, 1974, FSAR revision; (2) responsible discipline engineers had been provided with instructions for the inclusion of aluminum exclusion in procurement documents and had been providing aluminum inventory data to a centralized point in the engineering department; and (3) Westinghouse had provided the licensee with an inventory of aluminum that was in containment resulting from Westinghouse procurement. Evidence that inventory control had been accomplished, although informally, since 1974 was provided.

The licensee's system for inventory control at the site was examined and appeared to provide adequate control. The licensee was preparing a formal inventory control system for use at the corporate offices. This item is open pending examination of that system, and the implementation, during a future inspection.

During the examination of licensee action on this 50.55(e) item the inspector made inquiries regarding the inclusion of zinc (in the form of galvanizing on raceways, raceway supports and decking and zinc based primers) in the analysis for containment hydrogen generation. It appeared that an analysis of zinc reaction formed hydrogen had not been specifically performed for Diablo Canyon on the basis that an Oak Ridge National Laboratory study established that hydrogen formation from a zinc/steam chemical reaction was negligible given that the containment spray solution was maintained with a basic Ph. The licensee uses sodium hydroxide additive to the containment spray system to provide a basic Ph. The inspector observed that an event which did not actuate the containment spray system would not provide the basic Ph necessary to preclude hydrogen formation due to the zinc/borated water reaction. The licensee agreed to evaluate the situation. This matter is currently under NRC review.

3. Licensee Action on Previously Identified Followup Items

a. Closed (275/80-10-02) Followup Item: Licensee walkdown of external hydrogen recombiner system piping

The licensee had completed a walkdown and piping weld reinspection program for the external hydrogen recombiner system piping and identified weld reject rates ranging from 35% to 86%. The

walkdown was conducted by a licensee inspector during the period of May through September, 1980, and documented on Nonconformance Report No. DC1-80-SC-002 and Audit Report No. DCO-80-023. The NCR specified additional training for cleanup crew crafts and supervisors.

The inspector questioned the excessive reject rates on welds performed by the cleanup crew and examined the circumstances surrounding the welding activities prior to May 1980 and licensee actions to preclude recurrence. It was determined that the external hydrogen recombiner piping was the only code safety related system which the cleanup crew had worked on and this was the first welding performed by the cleanup crew to ANSI B31.7.

Since May, 1980, the licensee had taken steps to increase the knowledge level of cleanup crew personnel. Among the actions taken were: conducting prework sessions on quality class 1 work packages to familiarize personnel with the procedures to be used, hold points necessary and work sequences; conduct of classroom training by QC in the areas of concrete anchor bolts, precision tool use, equipment alignment, grouting, drypacking, and ASME Section IX code requirements; conduct of training sessions for welders in the areas of weld quality standards, code requirements, and welding procedure requirements. The inspector discussed training received, quality assurance awareness, and work procedure familiarity with cleanup crew supervisors and crafts. The inspector observed a general lack of familiarity with quality control procedures and QA awareness on the part of cleanup crew foremen. While significant action had been taken to upgrade the training level of welders and certain other crafts personnel, the inspector discussed with licensee management personnel the apparent need for additional training of field foremen. The licensee agreed to evaluate the situation.

The inspector discussed, and observed evidence of, welder training activities with the cleanup crew welding foreman and observed that welding procedures being worked were posted in a prominent place. Examination of welding filler material control activities, storage conditions, thermometer calibration and segregation of class 1 material were conducted. Numerous tools and test equipment were examined in the tool issue area. All material had the required calibration stickers affixed and the tool issue log appeared to be properly completed. Discussions with the cleanup crew tool room attendant indicated that, while the man expressed unfamiliarity with calibrated equipment procedure, the attendant had received sufficient verbal

directions and appeared knowledgeable regarding duties, responsibilities, and practices employed to such an extent that procedural compliance was evident. The licensee agreed to make the necessary procedures available to the attendant.

Class 1 work installed by the cleanup crew is 100% inspected by licensee General Construction QC personnel. The individual responsible for welding and support inspection was fully knowledgeable regarding quality assurance, work procedure and quality control procedure requirements.

The licensee's system for specifying repairs and NDE, approving and initiating the required rework, inspecting the inprocess and completed work, and specification of appropriate acceptance criteria was examined. Two minor situations were observed in one procedure (SMEI-7) where adequate reference to criteria were not clearly delineated. The licensee immediately initiated and approved the necessary revision to provide clear direction.

The inspector had no further questions on this item and indicated that clean up crew activities would be reexamined during a future inspection.
(275/80-22-01)

b. Closed (275/80-16-01) Followup Item: Torque on concrete anchor bolts was not released prior to welding stiffener plates on baseplates

The licensee had written Minor Variation Report No. M-4210 identifying those supports where concrete anchors on baseplates may have not been untorqued prior to welding baseplate attachments. Pullman Power Products (Kellogg) had identified approximately 55 such support installations pursuant to a review of their records.

The licensee had approved instructions for determining if anchor bolt integrity had been compromised and, if so, repair instructions. Discussions with Pullman personnel indicated that about 70% of the support baseplates had been checked and no instances were found where the support integrity had been affected.

The inspector had no further questions.

4. Licensee Action on Potentially Generic Issues

a. Discrepancies in rigid sway brace assemblies and beam attachment brackets (SIE Inspection Report 50-275/80-18)

The inspector had discussed welding problems, identified by a different licensee, on welded beam attachment brackets with licensee personnel. The licensee reported by telecon that their evaluation determined that welded beam attachment brackets of the types determined to be discrepant were not used at Diablo Canyon.

b. Excessively hard stainless steel bolts on Anchor-Darling Valves (See IE Inspection Report 50-275/80-18)

The licensee was informed by the inspector that valves supplied under a particular purchase order possibly contained excessively hard bolts. The licensee had evaluated the locations of the eight valves supplied by that purchase order and determined that none were located in class 1 systems and supplied the inspector with the valve identities. The inspector's examination of the applicable piping diagrams verified the licensee's conclusions. This item is closed.

c. Pressurizer Relief Line Block Valves

A recent construction deficiency report, issued by a utility in IE:RII identified that certain 3" - 1500# valves manufactured by Westinghouse Electromechanical Division failed to seat completely after cycling during preoperational testing. The licensee examined their equipment list and notified the inspector none of these valves were installed in nuclear safety related, quality class 1 applications at Diablo Canyon.

d. Failure of certain valves to close at rated pressure or flow conditions

Certain utilities located in IE:RII and RIII recently notified the NRC of closure problems, at rated pressure and/or flow conditions, experienced by three inch motor operated gate valves used in the CVCS and safety injection systems. Westinghouse had notified those utilities of the condition but licensee personnel at the site were not aware of such notification.

Discussions with licensee personnel at the site indicated they had experienced problems with limitorque motor operated valves supplied by Westinghouse. The problems experienced had been valve disk/stem damage and failure of some valves to fully

close. The licensee had determined that improper setting of torque limit switches was the problem and obtained the Westinghouse specification for torque limit switch settings. PG&E had reviewed the torque limit switch settings on all Westinghouse supplied motor operated valves and assured the switch settings on valves installed were consistent with manufacturer's recommendations. In addition, the licensee stated that a verification program was conducted to assure that the limit switch components on the valves were of a type necessary to achieve the manufacturer's recommended torque settings. The inspector had no further questions on this matter.

5. QA Audits

The licensee's internal audit system was examined by reviewing 19 QA audits performed on General Construction activities during the time period of August 19 through November 14, 1980. In those cases where findings required corrective action, the actions had been completed in accordance with the licensee's nonconformance reporting system or open item resolution system.

No items of noncompliance or deviations from the licensee's QA audit and reporting system were identified.

6. Exit Interview

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on December 5, 1980 and summarized the inspection purpose, scope and findings.