

U.S. NUCLEAR REGULATORY COMMISSION
REGION V

Report No. 84-31

Docket No. 50-275

Licensee: Pacific Gas and Electric Company

Facility Name: Diablo Canyon Unit #1

Inspection at: Diablo Canyon Site, Avila Beach, California

Inspection Conducted: August 20-24, 1984

Inspector:

Albert Young Jr. for
P. Qualls, Reactor Inspector

9-18-84
Date Signed

Reviewed by:

Albert Young Jr.
T. Young, Chief, Engineering Section

9-18-84
Date Signed

Albert Young Jr. for
R. Dodds, Chief, Reactor Projects Section I

9-18-84
Date Signed

Approved by:

D.F. Kirsch
D. Kirsch, Chief, Reactor Projects Branch

9/19/84
Date Signed

Summary:

Inspection on August 20-24, 1984 (Report No. 50-275/84-31)

Areas Inspected: A special unannounced inspection was conducted to investigate two allegations. Allegation RV-84-A-0085 alleged that bolts on the main fire loop were of an improper material and that the joints were not coated with an asphalt material as required. Allegation RV-84-A-0082 said that fire doors were improperly installed. The inspection involved 40 hours onsite by one NRC inspector.

Results: No items of noncompliance or deviations were identified.

DETAILS

1. Personnel Contacted

Paul Stewart, Fire Protection Specialist, PG&E
Jim Wasylewski, Production Engineer
Ron Koler, Production Supervisor
Greg Southcott, Civil Production Engineer, Foley
Greg Kunde, Material Engineer, Foley
Louie Escalante, Inspector, PG&E
Vick Battalico, Foley QC Receiving Supervisor
Dave Miklush, NPO Maintenance Manager, PG&E
Lowell Fidler, Foley QC Supervisor
Mark Kristovich, PG&E Inspector
Pete Mason, PG&E

2. Documents Reviewed

Drawing No. 6299-Y-3-002
Inspection Report No. 883-1R-53 (3/30/84)
Inspection Report No. 883-1R-49
Foley Material Requisitions Log
Foley Material Requisition No. C0751
Foley Material Requisition No. C0601
Foley Purchase Order No. 65079 and Receipt
Engineering Disposition Request EDR 2022
Engineering Disposition Request EDR 1913
Work Request WR C6694
Completed Work Request Package WR C6694
Work Request C-6834 Rev. 1
Work Process Traveler 66834 Rev. 3
Inspection Report for WR C6834 for Door 345

3. Allegation RV-84-A-0085

Characterization

A site contractor (H. P. Foley) 1) installed improper bolts on the fire protection system water supply piping joints and 2) did not properly or adequately coat the underground pipe fittings on the system.

Implied Significance to Plant Design, Construction or Operation

Improper bolts could fail and cause failure of the piping joints. Inadequate coatings could allow corrosion of the joint and eventual failure of the joint. The result of either failure would be to disable a part of the fire water main and inhibit the ability of the licensee to fight a fire.

Assessment of Safety Significance

An allegation review board met on August 17, 1984 and decided upon the following course of action:

- a. Determine whether the requirements of applicable specifications and procedures complied with applicable industry standards.
- b. Interview Foley and PG&E personnel involved with the alleged activities to determine what kind of bolts were used and the extent of QC examinations conducted on fitting coatings. Interview sheets will be completed and retained.
- c. Examine Documentation to ascertain whether
 - 1) the bolts used in fitting bolting conformed to specification requirements.
 - 2) bolt traceability was required and, if so, maintained.
 - 3) the bolts required by specification contained any special marking requirements.
 - 4) the alleged situation was documented by NCR and, if not, the rationale. If so, was the NCR properly resolved and dispositioned.
 - 5) the bolts were properly procured and supplied with the required documentation.
 - 6) QC inspections were conducted and, as required, documented on the fittings, coatings, paying particular attention to the first 20% installed.
- d. Based upon the results of the above inspections, inspect field installations, as available. Ascertain whether it is advisable to excavate any fittings to conduct verification examinations or whether further engineering analysis is required.

During his inspection the inspector examined material requisition and receipt documents, examined system inspection and test documentation, interviewed key plant personnel involved with the system and examined any exposed portions of the fire main system to determine the answers to the questions of the review board. Based on his examinations the inspector determined:

- a. The Work Request C6694 called for joint coatings to be done in accordance with AWWA (American Water Works Association) Code C-203 and the bolts were to be ASTM A307 grade B. These requirements appear to meet the NFPA specifications.

Bolting

- b. Various personnel were interviewed. From the interviews it appears that the allegor was correct when he said that he observed grade A bolts installed in the fire loop. According to plant personnel the

grade A bolts were used to hold the pipe in place during alignment and fit-up and were replaced in late March with grade B bolts with two exceptions, lines "F" and "N" to position indicating valves which had already been buried. This bolt replacement appears to have occurred after the allegor had left the site.

Licensee inspection report #883-1R-53 dated March 30, 1984 documented Grade B bolts throughout the system except for these two lines which were ASTM A307 grade A bolts. Engineering disposition report EDR 2022 addressed having Grade A vice Grade B bolts in these two lines and concluded that Grade "A" bolts were satisfactory in these applications.

- c.1) Based on licensee inspection report #883-1R-53 the bolts used conformed to the specification requirements except for lines "F" and "N". The use of grade "A" bolts was approved in these lines by EDR 2022.
- 2) No bolt traceability was required. According to the PG&E maintenance manager this is not an ASME section 11 system and no material traceability is required. The staff finds this position acceptable.
- 3) The bolts were required to be Grade B ASTM 307 bolts however, while the allegor was on site, grade A bolts were used to set the pipe. These were later removed and replaced by grade B bolts, except as noted above. Thus, it appears that the licensee was aware of the condition and took adequate action to resolve the discrepancy.
- 4) No NCR's were written on this system. Any problems found were corrected on the spot prior to final acceptance inspection. Licensee Inspection Report IR-883-1R-53 documented grade A bolts in two lines.
- 5) Foley material requisitions C0751 and C0601 and Foley Purchase Order 65079 show that the proper bolts were ordered and received.

Coating

- d. The PG&E inspector, who inspected this system in conjunction with the Foley inspector named in the allegation, said that when they inspected the final joint coatings they inspected all joints 360° and used inspection mirrors to see the underside of the pipes. The PG&E fire protection specialist and the Foley engineer responsible for the system said that they had to inspect the joints during hydro testing and that they periodically inspected the system during construction and prior to burying the pipe and found no problems that were not corrected. The inspector said that they found a few places that needed recoating and that these were fixed prior to system acceptance. No other problems were found and no NCR was written.

The Work Request was signed as being inspected satisfactory, which included the coatings, by the named Foley inspector. That Foley

inspector was no longer at Diablo Canyon so was unavailable for interview.

- e. There were no specific inspection hold points called for in the installation/inspection procedure WR C 6694 for the coatings or bolts. The only documented inspection is the inspector's signoff on WR C 6694 that all work was inspected and that it met the requirements specified.

Although the system had already been covered the inspector was able to observe several installations above ground to observe the proper coating.

Staff Position

Based on these observations, documentation supplied to the inspector and interviews with plant personnel, the staff has no basis to conclude that it is necessary to excavate any fittings and has no basis to require the performance of a further engineering analysis.

No items of noncompliance or deviations were discovered.

Action Required

None

- 4. Allegation RV 84-A-0082

Characterization

A foreman for a site contractor (H. P. Foley) allowed fire doors to be installed with cut support bolts and improperly adjusted shims, example door 345.

Implied Significance to Plant Operation

Improper fire door installation could result in fire door failure during a fire. This could result in a fire spreading from one fire area to another. The fire, spreading to another area, could result in damage to redundant safe shutdown systems and the inability to safety shutdown the reactor.

Assessment of Safety Significance

An allegation review board met on August 17, 1984 and decided upon the following course of action:

- a. Examine Pyrocrete fire doors in Unit 1 and Unit 2 area to determine whether such doors have been accepted with cut support bolts or improperly adjusted shims. In particular, examine door number 345 and the doors installed by the Foley supervisor named in the allegation for such conditions.

- b. Determine whether the inspection documentation for the doors examined in the field adequately represents the installed condition.
- c. Interview the Foley carpenter foreman, to determine his knowledge of door installation criteria and his assessment of the degree of criteria compliance. Retain interview sheet documentation.

During his inspection the inspector interviewed personnel, examined system work and inspection documentation and examined fire doors to answer the questions of the review board. Based on his examinations the inspector determined.

- o The inspector examined all 10 bolts in door 345, 4 of these had grooves. The inspector then examined other doors installed by the named foreman. On Door B15, 4 bolts were examined. On door 242, 2 bolts were examined. On door 257, 2 bolts were examined. On door 187, 3 bolts were examined. On door 143, 2 bolts were examined. On door 215, 5 bolts were examined. The only additional discrepancy was one slight groove on a bolt on door 215. No evidence of improper shim adjustment was discovered. A large number of other Unit 1 doors installed by this foreman were also examined visually for proper operation and installation with no discrepancies noted.
- o The inspection documentation appeared to represent the installed condition as all doors seemed to be correctly installed with the exception of the bolts on the doors mentioned above.
- o The Foley foreman is no longer employed at Diablo Canyon. Two plant engineers who are both responsible for reviewing the fire door work, both said that the foreman was very knowledgeable in the requirements and installation methods for the doors. They both stated that he also produced a high quality of work.

Staff Position

On doors other than door 345 the inspector examined a total of 18 bolts with only one having a slight groove. Based on this, door 345 would appear to be an isolated case. Due to the Foley personnel accompanying the inspector not having access to vital areas during the bolt inspection, no bolts on doors in the vital areas were sampled. This item of damaged bolts installed on fire doors is open (50-275/84-31-01) pending completion of a licensee sampling program of vital area doors, to determine the extent of the problem, and actions necessary to resolve identified discrepancies.

No deviations or items of noncompliance were discovered.

Action Required

A further sampling will be conducted by the licensee to determine the extent of bolt damage, including samples of bolts on doors in vital areas. A report of actions taken to correct identified discrepancies will be submitted to Region V for evaluation. The report will address actions taken to correct the bolts on door 345. This allegation remains

open pending examination and evaluation of the licensee's findings and actions.

5. Exit Interview

An exit interview was held at 10:30 on August 24, 1984 with Mr. Paul Stewart and Mr. Randy Cohout of PG&E to discuss the scope and findings of the inspection.