

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

REGION V

Report No. 50-323/84-16

Docket No. 50-323

License No. CPPR-69

Licensee: Pacific Gas and Electric Company
77 Beale Street
Room 1435
San Francisco, California 94106

Facility Name: Diablo Canyon Unit 2

Inspection at: Construction Site, San Luis Obispo County, California

Inspection conducted: August 9-17, 1984

Inspector:

J. Bell
J. Bell, Reactor Inspector

9/4/84
Date Signed

Approved by:

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

9-4-84
Date Signed

Summary:

Inspection during the period of August 9-17, 1984 (Report No. 50-323/84-16)

Areas Inspected: Routine, announced inspection of activities relating to preoperational Containment Integrated Leak Rate Test (CILRT). The inspection included procedure review, interviews with personnel, witnessing portions of CILRT, and inspection of containment. The inspection consisted of 64 inspector hours onsite by one NRC inspector.

Results: Final acceptance of the test is withheld until formal submittal of test results and resolution of concerns relating to maintenance of containment integrity subsequent to CILRT.

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DETAILS

1. Persons Contacted

a. Pacific Gas and Electric (PG&E)

*R. Patterson, Plant Superintendent
*L. F. Womack, Engineering Manager
M. Angus, Engineering
R. J. Magruder, Operations, Senior Reactor Operator
K. Wallace, Operations

b. Bechtel Power Corporation (BPC)

*M. N. Norem, Startup Manager
P. E. Duggan, Startup Engineer
G. Thomas, Startup Engineer
P. Galanti, Startup Engineer
B. Patel, Startup Engineer
B. Blum, Startup Engineer
J. W. Mock, Construction Engineer, I&C

*Denotes those attending exit meeting of August 17, 1984.

2. Containment Integrated Leak Rate Test (CILRT)

The inspector observed the licensee's performance of the preoperational Containment Integrated Leak Rate Test (CILRT) between August 9-17, 1984. The test was performed in accordance with test procedure, STP M-7 Revision 2, Surveillance Test Procedure Containment Integrated Leakage Rate Test (ILRT), Type A.

3. Review of Records

During this inspection, the inspector reviewed the records of Type B and C local leak rate tests performed during the previous nine months. The inspector also reviewed the procedures used in the performance of these tests and the acceptance criteria outlined in AC M8 Revision 2, Acceptance Criteria - Derivation for Containment Leak Test Through Type B&C Penetrations. Preliminary results of the licensee's Type B&C local leak rate test program indicated the sum of these local leak rates to be approximately 0.16 La which is well within the acceptance criteria of 0.6 La.

The inspector reviewed calibration records of the 24 RTD's and 6 dew cells used in the test. All instruments had been calibrated within the last 6 months. The inspector inquired as to the method of calibration of each instrument used in the test. The inspector also discussed the one point in situ check of the instrumentation with the licensee.

The inspector reviewed the computer program used in the computation of the Type A containment leakage rate. The inspector noted that the

calculations were being performed using single precision rather than double precision. This was discussed with the programmer who explained how truncation errors were avoided using an expanded form of the total time equation. The inspector reviewed the hand calculations used to verify the program as well as the output of the verification of the program done on site using data from a previous leak rate test. The inspector also discussed the formula used in calculating the 95% upper confidence level.

No items of noncompliance or deviations were identified.

4. Observation of Work and Work Activities

Prior to the CILRT the inspector performed an area survey for instrument location assignments within the containment building. The purpose was to locate and evaluate the placement of the temperature and dewpoint sensors. This inspection revealed that the sensors were properly located and oriented to provide an accurate representation of the containment air mass.

Eighteen mechanical penetrations were selected at random for inspection. Some discrepancies were noted in the valve lineups. These were discussed with the licensee. The licensee indicated he was aware of most of these and committed to perform a reverification of the valve lineups prior to pressurization.

The applicant commenced pressurizing the containment on August 14, 1984. During pressurization, two gross leak paths were identified by the licensee. One involved a spare penetration which had been left uncapped. The other involved the emergency personnel hatch. The licensee explained the leakage through the emergency personnel hatch was apparently caused by a failure to close the equalization valve between the containment and hatch chamber thus pressurizing the inside of the chamber and that a hole drilled in the outer wall of the chamber had not been plugged allowing a clear path from the inside of containment to the outside atmosphere.

On August 15 the licensee commenced taking data during the required stabilization period for containment temperature. Preliminary data indicated a containment leak rate considerably in excess of the allowable i.e. 0.249%/day in comparison to 0.075%/day allowable. The licensee commenced to look for the source of the leakage. The licensee was continuing this effort at the time the inspector left the site on August 17.

Subsequent to this inspection, the licensee informed the inspector in a telephone conversation on August 20 that a 24 hour test had been completed at 1900 on August 19 and the preliminary results which did not include Type B or C additions were a measured leakage rate of 0.043%/day with a 95% UCL of 0.059%/day. The licensee indicated that at least four penetrations had been blocked to achieve this leakage rate. Following the 24 hour test, a 12 hour verification test was completed by the licensee at 1245 on August 20. An imposed leak rate of 75 SCFM or 93% La produced a calculated leak rate of 0.136%/day.

The licensee's 90-day report on this test will provide the final test results for inspector review.

5. Conclusion

During the inspector's initial walk through containment and the penetration rooms outside containment, the inspector noted that construction activity in the vicinity of the penetrations particularly outside containment appeared quite extensive. The amount of scaffolding and equipment and the number of workers involved in activities in these areas caused the inspector to express his concern to the test director that this might not be an appropriate time to be conducting this test.

Although the licensee has committed to instituting administrative controls in the affected areas, the maintenance of containment integrity subsequent to the CILRT will be examined during a future inspection (50-323/34-16/01).

6. Exit Interview

On August 17, 1984 the inspector met with the licensee's representatives identified in Paragraph 1 and discussed the scope and findings of the inspection.