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CIP.NAME RECIPIENT AFFILIATION
ELKEN,R.H. REGION 5, SAN FRANCISCO, OFFICE OF THE DIRECTOR

JECT: FOLLOWUP REPT TO 790404 NOTIFICATION OF REPORTABLE OCCURRENCE.DURING PROGRESS OF ROUTINE WELD REPAIRS ON PIPE RUPTURE RESTRAINTS,CRACKING DISCOVERED IN IMMEDIATE VICINITY OF REPAIRS.FULL REPT WILL BE SUBMITTED.

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ES: 1 cy ALL MAIL To J. Hanchett

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PACIFIC GAS AND ELECTRIC COMPANY

LAW DEPARTMENT - 77 BEALE STREET, 31ST FLOOR • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211

May 3, 1979

Mr. R. H. Engelken, Director
Office of Inspection and Enforcement
Region V
U. S. Nuclear Regulatory Commission
1990 N. California Boulevard
Walnut Creek Plaza, Suite 202
Walnut Creek, California 94596

Re: Docket No. 50-275-OL
Docket No. 50-323-OL
Diablo Canyon Site

Dear Mr. Engelken:

On April 4, 1979, the NRC Office of Inspection and Enforcement, Region V, was notified by telephone of a situation which was deemed reportable under Paragraph (e) of 10 CFR 50.55. The details are as follows:

During the progress of routine weld repairs on pipe rupture restraints, cracking was found in the immediate vicinity of the repairs. As a result, Non-Conformance Report (NCR) DC1-78-RM-008 was initiated on October 3, 1978 to investigate the cracking. This investigation identified significant cracking and resulted in NCR DC1-79-RM-006 initiated March 23, 1979. Thereafter an extensive investigation was initiated to determine the cause, extent, method of repair, and corrective actions necessary to prevent recurrence of these defects. The installation of the rupture restraints was previously found acceptable after ultrasonic testing as required by the specification.

The program of investigation is as follows:

(1) Nondestructive Examination: A plan to nondestructively examine a significant sample of the pipe rupture restraint weldments was implemented. The sampling plan calls for examination of additional welds when defects are encountered in the original sample or the additional samples being tested. The nondestructive testing consists primarily of magnetic particle testing, but also includes ultrasonic evaluation of selected weldments.

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(2) Welding Record Review: In parallel with the nondestructive testing, the welding records for weldments to be tested are to be reviewed. The welding procedures used are to be compared with the requirements of AWS D1.0-69. This data is to be compiled and correlated with nondestructive testing results.

(3) Destructive Testing: Typical defective welds are to be removed and metallographically examined. This evaluation is also to include chemical verification of the materials found in the weldment.

(4) Failure Mode Determination: The results of steps 1 through 3 are to be correlated to determine the failure mechanism and to indicate the conditions and/or actions which caused the defects.

(5) Repair Method and Scope: A detailed repair plan is to be generated which will assure that all defective welds are identified and repaired without producing further defects.

(6) Final Report: A report is to be issued which documents the final resolution of the repair program. The report will be issued upon completion of the repairs.

The results of the investigation to date are as follows:

(1) Nondestructive Examination: At this time, significant cracking has been found in two of the joint configurations.

(2) Welding Records Review: Welding records have been reviewed. Some questionable preheat requirements have been encountered, but these weldments are not in every case the defective weldments. More analysis is required to complete the correlation of the welding records with the NDE results.

(3) Destructive Testing: Samples of defective weldments have been removed. Initial evaluation of these samples shows cracks in heavy members. In addition to the metallographic evaluation of the defects, several severely cracked stiffener plates have been removed and the cracks which were contained in the beams have been removed.

(4) Failure Mode Determination: Work on this phase of the program is underway.

(5) Repair Method and Scope: This phase of work depends upon the progress of the failure mode determinations and therefore has not yet been initiated.

Since this report is preliminary in nature, a supplement will be submitted when sufficient information is available to determine the scope and method of repair. At that time the report will address the crack severity and its impact on rupture restraint performance and plant safety.

Very truly yours,

Philip A. Crane, Jr.

CC: Director
Office of Management Information
and Program Control
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555