

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket Nos.: 50-275
50-323

License Nos.: DPR-80
DPR-82

Report No.: 50-275/97-05
50-323/97-05

Licensee: Pacific Gas and Electric Company

Facility: Diablo Canyon Nuclear Power Plant, Units 1 and 2

Location: 7 1/2 miles NW of Avila Beach
Avila Beach, California

Dates: April 21-24, 1997

Inspector: Paul C. Gage, Reactor Inspector, Maintenance Branch

Approved By: Dr. Dale A. Powers, Chief, Maintenance Branch
Division of Reactor Safety

ATTACHMENT: Supplemental Information



EXECUTIVE SUMMARY

Diablo Canyon Nuclear Power Plant, Units 1 and 2
NRC Inspection Report 50-275/97-05; 50-323/97-05

This inspection consisted of a review of the licensee's planned and implemented activities associated with the inservice inspection program. The inspection report covers a 4-day period onsite by one region-based inspector.

Maintenance

- Nondestructive examinations were performed in a professional and thorough manner. Examiners were experienced and knowledgeable of their assigned tasks (Section M1.1).
- The inservice inspection procedures contained sufficient detail and instructions to perform the applicable nondestructive examinations and were consistent with the requirements of the American Standard Mechanical Engineers Code (Section M3.1).
- Nondestructive examinations were performed by appropriately certified individuals in accordance with approved procedures (Sections M5.1).



Report Details

Summary of Plant Status

During this inspection period, Unit 1 was in Mode 5 for Refueling Outage 1R08, while Unit 2 was at 100 percent power.

II. Maintenance

M1 Conduct of Maintenance

M1.1 Nondestructive Examination Observations

a. Inspection Scope (73753)

The inspector observed the performance of an ultrasonic examination and a liquid penetrant examination on a Class 2 weld on a 3-inch stainless steel pipe. These examinations related to the chemical and volume control system design change that routed the normal charging system connection upstream of the flow element in the reactor coolant pump seal injection line. The inspector also reviewed the certified material test reports of the penetrant, cleaner, and developer materials. The inspector monitored the processes involved in the automated ultrasonic examination of the feedwater nozzle weld on Steam Generator 1-1.

b. Observations and Findings

The inspector verified that approved Procedure N-PT-1, "Solvent Removable Visible Dye Liquid Penetrant Examination Procedure," Revision 6, was followed while performing required nondestructive examinations involving the chemical and volume control system design change. The inspector noted that the chloride and halogen limitations had not been exceeded. The inspector observed that the nondestructive examination examiners verified the surface temperature of the welds were within the minimum and maximum procedural requirements, and all observed work was performed with the work package present and in active use.

During the conduct of the liquid penetrant examination, the inspector observed that the designated Class 2 pipe was not identified as safety-related material. Such identification was required in accordance with Administrative Procedure CF5.ID2, "Control of Material in Storage," Revision 2. Procedure MA3.ID1, "Nondestructive Examination Program," Revision 1, required that, if problems were discovered, the examiners were to identify them and initiate resolution. The inspector noted that



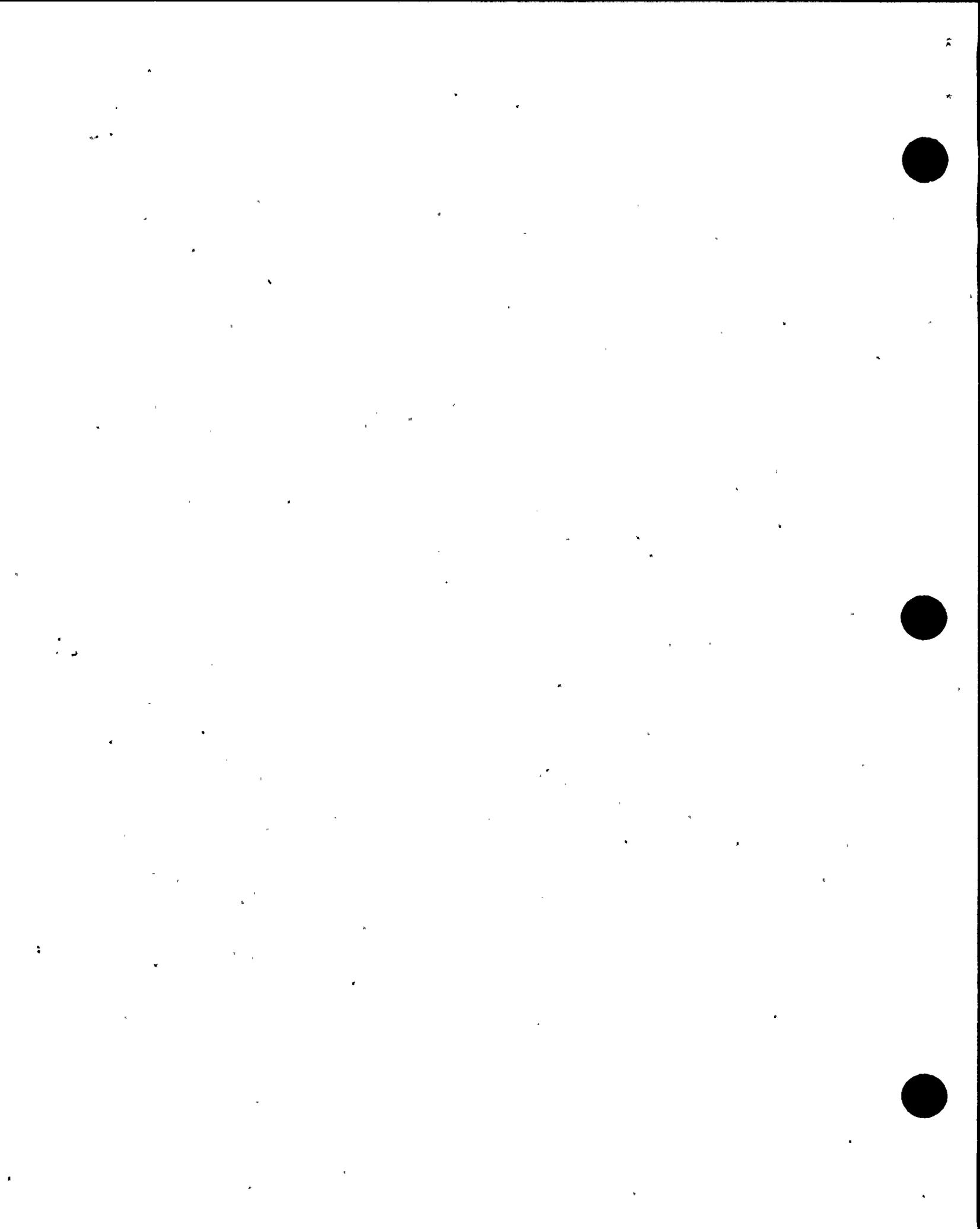
problems, which can be corrected in process, were not required to be handled in accordance with Procedure OM7.ID1, "Problem Identification and Resolutions - Action Requests," Revision 7. The licensee's personnel, without inspector prompting, identified the discrepancy and took immediate actions to correctly identify the pipe with a safety-related material sign.

Before the ultrasonic examinations were conducted, the inspector observed the system calibration, which included both axial and circumferential scans. The transducer selection, sensitivity calibration, and construction of the distance amplitude correction curve were performed in accordance with the associated procedure. The inspector verified that the correct calibration blocks were used (i.e., they were similar to the components to be examined in terms of material, diameter, and wall thickness). The nondestructive examination examiners documented their calibration and examination results of all pertinent information specified by the procedure. The inspector noted that the ultrasonic examination of the circumferential pipe weld was conducted with a shear wave mode (45-degree angle beam) in two directions (perpendicular and parallel to the weld axis) using a transducer with a frequency of 2.25 Hz. The inspector verified that designated Procedure N-UT-1, "Ultrasonic Examination Procedure For Pipe Welds," Revision 10, had been approved and was being followed. The inspector also observed the examiner perform a calibration check at the beginning of the examination.

Discussions with the examiners performing the ultrasonic and liquid penetrant examinations indicated that they were experienced and knowledgeable nondestructive examination personnel. They were cognizant of the procedural and documentation requirements, and understood the examination techniques.

The examinations of the steam generator welds were performed using 0, 30, and 45 degree longitudinal wave modes in accordance with Procedure N-UT-8, "Automated Ultrasonic Data Acquisition and Analysis Procedure," Revision 5. The inspector noted that the automated ultrasonic technique utilized a non-Class A software system for the acquiring, processing, and displaying information for the examiner to determine acceptable weld configurations, including Class 1 welds.

The inspector verified that the implementation of the VIPER software system was performed through quality-related Procedure CF2.TE1, "TES Software Quality Assurance Program," Revision 0. The inspector noted that the automated ultrasonic procedure required adequate calibration and linearity checks of the system including the sensors, software, and subsequent displayed output.



The inspector noted that the definition of a Class A computer system was delineated in Procedure CF2.ID2, "Software Quality Assurance for Computer Systems," Revision 1. The definition included a system that directly supports Technical Specifications, or an analysis system used directly for safety-related plant systems. The inspector found the definition to be appropriate.

The inspector determined that the software utilized by the automated ultrasonic technique was not classified as Class A. The licensee staff noted that Procedure CF2.ID2 exempted computer systems used to manage information for the convenience of the user, provided the user fully accepted responsibility for the results, established and implemented procedural controls for quality-related activities, and assured that alternate means of demonstrating validity were in place (periodic calibration of a measuring system). The inspector determined that the licensee subjected the VIPER software system to a less detailed verification and validation than expected for a Class A software designation. The inspector found that the implementation process utilized by the licensee regarding the automated ultrasonic examination to be nonconservative. Although this approach did not violate any regulatory requirements, the issue was discussed with the licensee's staff for action as they deem appropriate.

c. Conclusions

The observed examinations were performed in a professional and thorough manner. Examiners were experienced and knowledgeable of their assigned tasks.

M3 Maintenance Procedures and Documentation

M3.1 Inservice Inspection Program Plan and Procedures (73753)

a. Inspection Scope (73753)

The inspector reviewed the licensee's inservice inspection plan and schedule for the current inspection interval to determine if changes to the inspection plan concerning component selection, etc., have been properly documented and approved. The inspector also reviewed the licensee's inservice inspection procedures. The inspector reviewed Revision 0 of the licensee's inservice inspection program plan (dated November 19, 1996) for the second 10-year inspection interval for Diablo Canyon Power Plant, Unit 1. The inspector reviewed the nondestructive examination procedures used during the observed examinations to verify that they were consistent with the requirements of Section XI of the ASME Code, 1989 Edition, without Addenda.



b. Observations and Findings

The inspector noted that the NRC was in the process of reviewing and evaluating the licensee's submitted inspection plan to determine compliance with 10 CFR 50.55a(g). As documented in Section 5.2.8 of the Final Safety Analysis Report, the ASME Boiler and Pressure Vessel Code, Section XI, 1989 Edition without addenda, was used as the basis for the inservice inspection program. An NRC letter dated March 12, 1997, documented a request for additional information regarding the licensee's submittal of the current inservice inspection program plan and associated requests for relief from the ASME Boiler and Pressure Vessel Code, Section XI requirements.

The inservice inspection program plan described the ASME Code Class 1, 2, and 3 components subject to surface, volumetric, and visual examinations, and included NRC-approved requests for relief for each item where the licensee determined that a code-required examination was not practical. Tables in the program plan identified the name of the component or system, code class, item number, and general identification. Also included were the required nondestructive examination methods and applicable remarks or references to requests for relief that have been approved.

The procedures were found to be well written, and they contained sufficient detail and instructions to perform the intended examinations.

c. Conclusion

Nondestructive examination procedures were well written and provided sufficient detail to support the performance of the inservice inspection program plan.

M5 Maintenance Staff Training and Qualification

M5.1 Personnel Qualification and Certification

a. Inspection Scope (73753)

The inspector reviewed the qualifications and certifications of the inspection personnel involved with the inservice inspection program. The inspector reviewed Procedure 2.1, "Qualifications and Certifications of Personnel," Revision 8, to verify that the certification process met the requirements of American Society for Nondestructive Testing's "Recommended Practice SNT-TC-1A," 1984 Edition. The inspector reviewed the applicable qualification files of four nondestructive examination Level II examiners and all the Level III examiners.



b. Observations and Findings

The licensee representative informed the inspector that the performance of some of inservice inspection examinations were contracted out, but were performed by nondestructive examination examiners who were certified by the licensee. The inspector observed that the inservice inspection supervisor exhibited a high degree of competency, was fully cognizant of ASME code requirements and inservice inspection program commitments. The inspector noted that the reviewed qualification and certification files contained the appropriate examinations and certifications for the designated nondestructive examination methods. The records showed that the personnel had been certified in accordance with the 1984 Edition of SNT-TC-1A. As required by the ASME code, all of the individuals had maintained current documentation regarding near-distance acuity and color vision examinations.

c. Conclusion

The nondestructive examinations were performed by knowledgeable and appropriately certified individuals in accordance with approved procedures.

X1 Exit Meeting Summary

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on April 24, 1997. The licensee personnel acknowledged the findings presented.

The inspector asked the licensee personnel whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.



ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

D. Adamson, Level III Examiner, Technical and Environmental Services Nondestructive Examinations
K. Bych, Director, Nuclear Quality Services Maintenance
W. Crockett, Manager, Nuclear Quality Services
D. Gonzalez, Supervisor, Inservice Inspection
H. Karner, Auditor, Nuclear Quality Services Maintenance
S. LaForce, Engineer, Regulatory Services
R. Martin, Engineer, Regulatory Services
F. Sattler, Auditor, Nuclear Quality Services Maintenance
D. Taggart, Director, Nuclear Quality Services
D. Vosberg, Director, Nuclear Steam Supply Systems

NRC

D. Allen, Resident Inspector
M. Tschiltz, Senior Resident Inspector

INSPECTION PROCEDURES USED

IP 73753 Inservice Inspection

