

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-528/84-21, 50-529/84-16, 50-530/84-10

Docket Nos. 50-528, 50-529, 50-529

License Nos. CPPR-141, CPPR-142, CPPR-143

Licensee: Arizona Public Service Company
P. O. Box 21666
Phoenix, Arizona 85036

Facility Name: Palo Verde Nuclear Generating Station - Units 1, 2, and 3

Inspection at: Palo Verde Construction Site, Wintersburg, Arizona

Inspection conducted: April 2 - May 31, 1984

Inspectors: PPNault for
L. E. Vorderbrueggen
Senior Resident Inspector
Date Signed

Approved By: PPNault for
T. Young, Jr., Chief
Reactor Projects Section 2
Date Signed

Summary:

Inspection on April 2 - May 31, 1984 (Report Nos. 50-528/84-21, 50-529/84-16 and 50-530/84-10)

Areas Inspected: Routine, unannounced inspection by the resident inspector of construction activities associated with HVAC instruments; control of IE Bulletins, Information Notices, NRC inspection issues, and other open items; control and analysis of problem area responses; installation records pertaining to Unit 1 reactor vessel internals and main coolant pressure boundary piping; Unit 3 post tensioning system records; follow-up on 50.55(e) items; and general activities in progress throughout the plant site. The inspection involved 77 inspector hours on-site by one NRC inspector.

Results: One violation was identified concerning control of modifications to installed HVAC instruments.

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DETAILS

1. Persons Contacted

a. Arizona Public Service Company (APS)

- *E. E. Van Brunt, Jr., Vice President - Nuclear Production
- *W. E. Ide, Corporate Quality Assurance Manager
- *D. B. Fasnacht, Nuclear Construction Manager
- *J. F. Minnicks, I&C Maintenance Superintendent
- *C. N. Russo, Manager, QA Audits and Monitoring
- W. Quinn, Manager, Licensing
- *D. E. Fowler, Manager, Quality Control
- *W. E. Craig, Manager, Startup Administration/Technical Support
- *S. G. Penick, Supervisor, Document Review
- D. Holman, Supervisor, Testing/Monitoring
- *R. J. Kimmel, Transition Engineer
- *W. Nelson, Quality Assurance Engineer
- T. Bradish, Quality Assurance Engineer
- T. J. Bloom, Licensing Engineer
- *C. R. Emmett, Compliance Engineer

b. Bechtel Construction, Inc. (Bechtel)

- *W. J. Stubblefield, Field Construction Manager
- *S. M. Nickell, Project Superintendent
- *D. T. Krishna, QA Manager/Projects
- *D. R. Hawkinson, Project QA Manager
- *T. L. Horst, Project Field Engineer
- *P. R. Huber, Project Quality Coordinator
- *H. D. Foster, Project QC Engineer
- *J. E. Waddington, Assistant Project QC Engineer
- M. Rosen, Assistant Project QC Engineer
- A. Spicer, Codes Field Engineer

c. Honeywell, Inc.

- T. Haynes, Quality Assurance Manager

d. The Waldinger Corporation (TWC)

- D. Wheeler, Site QA Manager

e. Western Concrete Structures, Inc. (WCS)

- K. Guffey, Field Installation Superintendent
- P. Donigan, QA Manager

Other persons contacted during the inspection period included construction craftsmen, inspectors and supervisory personnel.

*Management Meeting Attendees.

2. Unit 1 - Reactor Vessel Internals Installation

The records developed during installation of the reactor vessel internals were examined. The work was performed by Bechtel craftsmen under the direction and control of CE. Properly approved step-by-step procedures were followed for accomplishing, examining and accepting the work. The records showed that:

- a) Procedural steps were properly signed and dated.
- b) Adequate access control was provided.
- c) Cleanliness requirements were maintained.
- d) Calibrated instruments were used for precision alignment measurements.
- e) Certified physical/chemical test reports were available for weld filler metal, guide lug inserts, alignment keys, dowel pins, pressure transducers, accelerometers, strain gages, cleaning water, and NDE materials.
- f) Qualified welders performed welding operations using qualified welding procedures.
- g) Approved NDE procedures were followed by appropriately qualified examiners.
- h) Acceptance inspections were performed by certified Quality Control inspectors.
- i) The installation work was in accordance with ASME Section III requirements.

No items of noncompliance or deviations were identified.

3. Unit 1 - Reactor Coolant Pressure Boundary Piping

The quality related records pertaining to the items listed below were examined to ascertain that the component/material characteristics are in accord with the applicable requirements and that the installations are in conformance with the established procedures:

- a) Pipe spool S-002 and adjoining welds W-002 and W-003 in shutdown cooling loop 2 (line No. 1-RC-068-16").
- b) Pipe spool S-004 and adjoining welds W-005 and W-006 in safety injection line 1-SIE-223-14" from safety injection tank 1B.
- c) Pipe spool S-001 and adjoining welds W-001 and W-002 in the pressurizer surge line 1-RC-028-12" from reactor hot leg 1-RC-032-42".

- d) Pipe spool S-009 and adjoining welds W-008 and W-009 in loop 1 long term recirculation line 1-SIA-248-3".

The records included material test/certification reports, vendor manufacturing and code data reports, receiving inspection reports, WPP/QCI 202.0 installation/inspection records, field welding checklists, and radiographs and other NDE records. The records confirmed that the required scope of inspection had been performed, and that specifications and installation procedures, including cleanliness requirements, had been met.

No items of noncompliance or deviations were identified.

4. Unit 3 - Containment Post-Tensioning

The tendon sheath filling records for all Phase 3 tendons were examined to verify conformance to WCS procedures PTP-9 and QCP-7. Also, the certified test data report pertaining to the protective grease (Visconorust 2090 P-4, Lot No. 5657 in railroad tank car No. GATX43218) was examined to verify that the physical and chemical properties specified in PTP-9 had been met. The records were complete and orderly.

No items of noncompliance or deviations were identified.

5. All Units - HVAC Installation

The inspector reviewed the licensee's program for surveillance and control of HVAC work being performed by The Waldinger Corporation and their instrumentation subcontractor, Honeywell, Inc. The reports of audits conducted by the licensee and Bechtel through January 1984 were reviewed and discussions were held with various personnel involved in the audits. Audit findings were followed up to verify that appropriate corrective action had been accomplished for those items identified. The inspector verified audits had been performed by qualified auditors. It is noted that in the licensee response to the HVAC violation identified in Inspection Report 50-528/84-10, the licensee has committed to include greater emphasis on hardware inspections attributes in their future audits.

During one of the discussions with site personnel, the inspector became aware of a situation involving unauthorized modification of instrument installations after QC acceptance inspection by the responsible subcontractor (Honeywell). This matter had not been identified by the licensee's audit/surveillance program. The inspector subsequently examined the temperature sensing and controlling instruments for the ventilation systems in Units 1 and 2 Diesel-Generator Buildings. Instrument installations found to be in nonconformance with established requirements and which had been turned-over from Bechtel construction to APS startup were as follows:

¢ 1-J-HDB-TSL-18	(Q class)
# 1-J-HDN-TSHL-26	(R class)
¢ 1-J-HDN-TIC-19	(R class)

¢	1-J-HDN-TIC-20	(R class)
*¢	2-J-HDA-TSL-17	(Q class)
*¢	2-J-HDN-TSHL-25	(R class)
#¢	2-J-HDB-TSH-30	(Q class)

- Switch housing had open conduit port.

¢ - Steel washer missing from under one or more mounting lugs.
The washers are required to satisfy seismic qualification.

The instruments marked with the asterisk (*) had their sensing components interchanged. This resulted in violating the "Q" requirements of the -TSL-17 instrument and also changing the temperature response characteristics of each instrument. It is believed that this interchange may have occurred when the instruments were in the licensee's calibration laboratory July 20, 1983. The loss of the mounting washers may also have occurred during the dismounting/remounting operation for instrument calibration in the laboratory. The inspector stated that the situation appears to have resulted from the absence of effective procedures for enabling the turn-over of completed work by subcontractors. Without such controls, unauthorized work can be performed by one organization on equipment still under the jurisdiction of another organization. The licensee responded that this matter had recently surfaced and that a DER (No. 84-27 dated 4/25/84) had been initiated to evaluate and correct the situation.

The licensee was informed that the identified discrepancies represent a departure from QA program requirements for which a noncompliance citation would be issued (Violation 50-528/84-21/01).

6. All Units - Licensee's Program For Problem Management

The inspector reviewed the licensee's system for analyzing and responding to real and potential problems and problem areas. The system includes detailed procedures for identifying nonconforming items and situations which require corrective action. The procedures include appropriate provisions for following these items to their satisfactory correction and for analyzing them for apparent trends. Trend reports are directed to the Corporate Quality Assurance Manager for action. Each significant departure from established requirements is routed through the Deficiency Evaluation Report (DER) process and comes to the attention of upper management. The system also includes a comprehensive audit program which examines all aspects of the design and construction process. A "Hot Line" program is also functioning on a 24-hour basis to accept, investigate and respond to quality concerns from any troubled individual who might want to shield his identity. A Hot Line summary report is prepared monthly for the Corporate Quality Assurance Manager with distribution to senior management. Formal reviews of the Quality Assurance Program activities and results are performed periodically by licensee corporate management. The overall system appears to be of broad scope and should be adequate for identifying, analyzing, and providing response and control of problem areas. The effectiveness of the licensee's program will continue to be assessed in the normal course of future inspections.

7. All Units - Licensee's System For Handling Open Items

The licensee's system for managing open items, such as, IE Bulletins, Information Notices, 50.55(e) reports, and NRC inspection report items was reviewed. The Nuclear Operations Licensing Department (NOLD) has responsibility for Bulletins, Information Notices and NRC Inspection Reports for plant operations. NOLD procedures provide for receipt logging, assignment to the appropriate group for analysis, and coordination of the activities leading to preparation and approval of the final report or disposition. The IE Document Review Log (word processing system) is used to track the status of each item. A computer program (Licensing Commitments Tracking System (LCTS)) is used for tracking all commitments. The Quality Assurance (QA) Department has responsibility for NRC Inspection Reports for construction and for 50.55(e) reporting. All DER's are received by the QA Manager who, after logging, route them to the Nuclear Engineering Department for review, follow-up of Bechtel evaluation, and preparation of the 50.55(e) Report, if applicable. The Hot Line program is used for reporting Start-up type events to the QA Department which may require prompt reporting to the NRC. The Nuclear Engineering Department uses the DER Log (word processing system) for tracking their activities. The Corporate QA Manager utilizes a manual logging and tracking system for DER's, 50.55(e) items, and construction inspection open items. Although, the various licensee groups use different techniques for tracking their activities and responsibilities, it appears that reasonably effective control is being maintained. At the present time, however, the licensee is preparing to implement a single computerized program for tracking all commitments, responsibilities and open items. One group will be assigned the task of operating the system and coordinating the activities.

8. All Units Review of 50.55(e) Items

During this reporting period, the inspector reviewed and closed out the 8 items tabulated below which the licensee had identified to the NRC as having potential 50.55(e) reportability significance. Each item was documented on a Deficiency Evaluation Report (DER) as required by the licensee's procedure. The DER describes the discrepant condition, identifies supporting documents and the corrective action to be taken, and is the basis for the licensee's report to the NRC. For each of the items, the records indicate that the licensee's evaluations were thorough and that satisfactory corrective action had been completed or had been arranged. The items marked with an asterisk (*) in the tabulation were judged by the licensee to be reportable under the 50.55(e) criteria and have been satisfactorily reported; the others were considered not reportable. The inspector concurs with the licensee's conclusions.

<u>DER NO.</u>	<u>SUBJECT</u>
*83-19	Seven Snubbers Bound up During Part of Stroking Cycle - Unit 1
83-32	Dissimilar Metal Socket Welds Used in Steam Generator Systems Over 500 F. - Unit 1

- *83-34 Field Weld Surface Cracks on Containment Instrumentation Racks - Unit 2
- *83-46 Valve Actuator/Yoke Mounting Bolts (5/16") Failed on Manual Closing - Units 1, 2 and 3
- *83-56 Component Failures in MSIV's - Units 1, 2 and 3
- 83-59 Internal Wiring Separation Errors in Post-Accident Radiation Monitoring Cabinets - Unit 2
- 83-64 Excessive Leakage on Target Rock Safety Relief Valves - Units 2 and 3
- *84-03 Feed Water Isolation Valve Sticking Due to Foreign Material in Valve Control System - Units 1, 2 and 3

During the inspector's review of DER's and nonconformance items over the past several months, particular attention has been given to the thoroughness and quality of the analytical work performed by the various Bechtel engineering discipline groups. It is apparent that appropriate procedures are in place and are being used to provide effective control and coordination of the technical and administrative activities. Corrective measures frequently involve interdisciplinary analytical review and it appears that conclusions are based on sound technical judgement. The delay in resolution of some DER's that has occurred in the past is almost entirely due to lack of response by the vendors that are involved. This has been discussed with the licensee and they have directed Bechtel to apply more rigorous effort to obtain timely vendor action where necessary.

No items of noncompliance or deviations were identified.

9. Inspection Tours of Plant Site

At various times during this inspection period, the inspector toured the plant site in order to observe general housekeeping conditions, care and preservation of equipment, handling of components, tagging and identification of material, absence of welding electrode stubs lying around the various work areas, presence of caps over pipe openings not being worked on, and presence of cribbing under stored equipment.

No items of noncompliance or deviations were identified.

10. Management Meeting

On June 20, 1984, the inspector met with the licensee and Bechtel representatives identified in Paragraph 1. During the meeting, the inspector summarized the scope of the inspection activities and reviewed the inspection findings as described in this report.