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

REGION V

Report No. 50-528/81-24, 50-529/81-17, 50-530/81-17

Docket No. 50-528, 50-529, 50-530 License No. CPPR-141, CPPR-142, CPPR-143 Safeguards Group

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: November 2 - December 4, 1981

Inspectors: L. E. Vorderbrueggen — 12/30/81 Date Signed
Senior Resident Inspector

Date Signed

Date Signed

Approved By: T. W. Bishop — 12-30-81 Date Signed
T. W. Bishop, Chief
Reactor Projects Section 1

Summary: Inspection on November 2 - December 4, 1981 (Report Nos. 50-528/81-24, 50-529/81-17, and 50-530/81-17)

Areas Inspected: Routine, unannounced inspection by the resident inspector of construction activities associated with protection of installed reactor vessels - Units 1 and 2; reactor vessel internals installation - Units 1 and 2; NSSS vessel storage protection - Units 3; leak in underground temporary fire protection line in Unit 1; reactor coolant pressure boundary and other safety related piping; Unit 2 pipe supports; emergency lighting; care and preservation of equipment; follow-up of licensee action on previous inspection findings; and general activities in progress at the plant site. The inspection involved 81 inspector-hours on-site by one NRC inspector.

Results: No items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

a. Arizona Public Service Company (APS)

*E. E. Van Brunt, Jr., Vice President, Nuclear Projects Management
*J. A. Roedel, Corporate Quality Assurance Manager
D. B. Fasnacht, Site Construction Manager
*W. E. Ide, Site Quality Assurance Supervisor
*R. J. Kimmel, Field Engineering Supervisor
R. Forrester, QA Engineer
P. Moore, QA Engineer
D. Wittas, QA Engineer

b. Bechtel Power Corporation (Bechtel)

*W. J. Stubbelfield, Field Construction Manager
*S. M. Nickell, Project Superintendent
R. M. Grant, Project QC Engineer
*M. A. Rosen, QC Supervisor
*D. R. Hawkinson, Project QA Supervisor
J. E. Pfunder, QA Engineer
W. A. Miller, Assistant Project Field Engineer
R. Randels, Field Engineer
R. Robinson, Pipe Hanger Engineer - Unit 2
R. Weller, Lead Piping Engineer - Unit 2
O. Ostereich, Welding Engineer - Unit 2

c. Combustion Engineering (CE)

S. Mager, Site Manager
C. Farley, Unit 2 Internals Superintendent

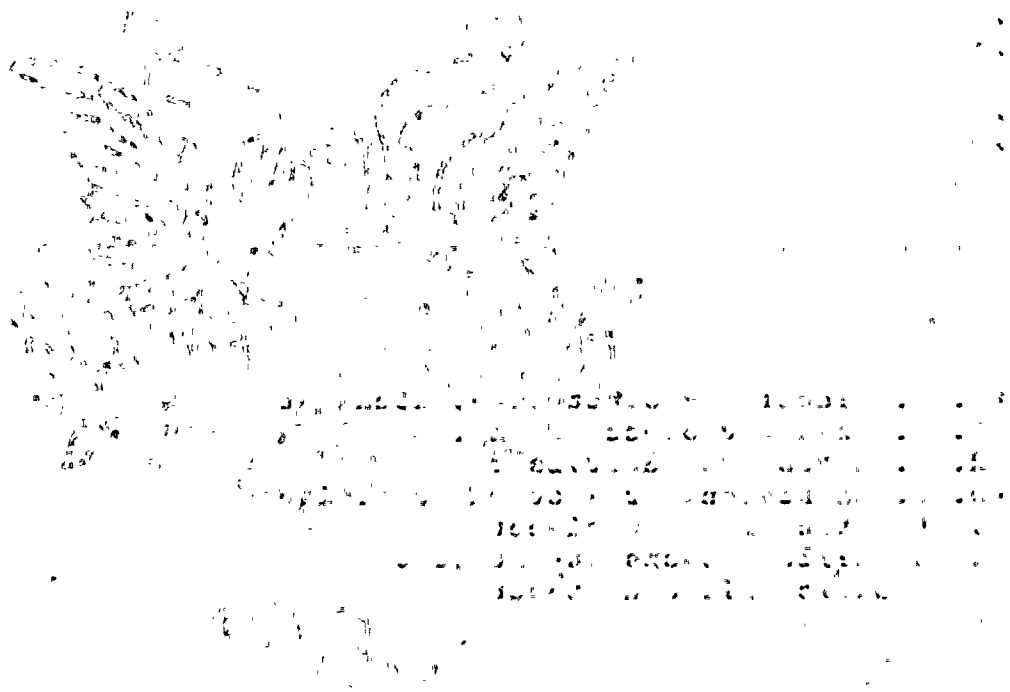
Other persons contacted during the inspection period included construction craftsmen, inspectors and supervisory personnel.

*Management Meeting attendees.

2. Licensee Action on Previous Inspection Findings

a. (Closed) Noncompliance Item (50-529/81-05/01): Welders Identification Symbol Missing From Weld

The corrective action identified in the licensee response letters dated July 8, 1981 and September 11, 1981, was reviewed. Bechtel's reindoctrination program for the pipefitter welders in all three units was well documented and appeared to include all assigned welders. This item is closed.



b. (Open) Unresolved Item (50-529/81-12/01): Possible Cold Working of Pipe Spool Ends During Fitup

The inspector met with licensee and Bechtel field engineering representatives on November 17, 1981, for further discussion of this matter. As a result of the meeting, Bechtel home office welding personnel drafted a response to resolve the matter; however, it was considered by the licensee and the inspector not to be fully relevant to the expressed concerns. This item remains unresolved.

3. Unit 1 - Leak In Underground Temporary Fire Protection Line

During the latter part of September, 1981, a leak in a 4-inch diameter steel pipe in the temporary fire protection system was discovered by Bechtel personnel. Before discovery, the leak developed to the extent that an estimated 2 to 3 cubic yards of soil had washed into the seismic separation space between the Auxiliary and Control Buildings at Elevation 74'-0". This indicated that the structural soil backfill in that area had been disturbed. The water source was isolated and the temporary fire lines were abandoned. The situation was documented on NCR No. CY-2909, Deficiency Evaluation Report No. 81-35 was initiated, and the matter was identified to the NRC as a potential 50.55 e reportable item.

The inspector has been following the development and initial implementation of a program by Bechtel and the licensee to determine the location of the pipe leak, and the location and extent of the soil disturbance. The effort to date appears to be well organized and under proper licensee control. The inspector will continue to follow the resolution of this situation. (50-528/81-24/01).

No items of noncompliance or deviations were identified.

4. Protection of Installed Reactor Vessels - Units 1 and 2

A security guard maintains control of access to the reactor refueling pool areas. Entry of personnel, equipment, tools and materials are limited to only those that are authorized. When there is no work in progress inside the vessel it is kept covered to prevent the entry of foreign objects and debris. Housekeeping conditions in the pool areas of both units appeared satisfactory. The inspector verified that the procedures for protection of the installed reactor vessels were being implemented.

No items of noncompliance or deviations were identified.

5. Reactor Vessel Internals Installation - Units 1 and 2

Installation of the vibration monitoring components on the Unit 1 internals structure is essentially completed. The internals assembly is "parked" on its storage stand in the refueling cavity and clean room type procedures are followed when work is being performed.

In Unit 2, the shims were installed in the snubber lugs on the core barrel and the core barrel/core shroud assembly was lowered into position in the reactor vessel for measurement of the offsets in the vessel instrument thimbles. The components are kept covered when work is not actually in progress. It appeared to the inspector that the procedures for protection of the vessel internals were being followed.

No items of noncompliance or deviations were identified.

6. NSSS Vessel Protection - Unit 3

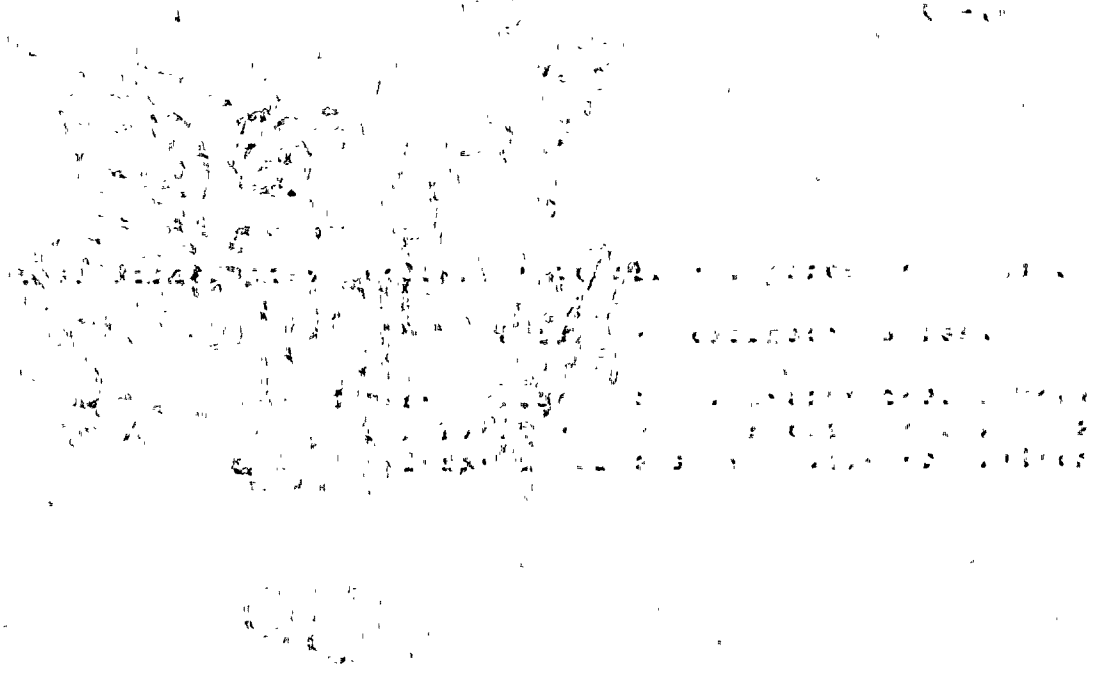
The reactor vessel and one steam generator have arrived on site and are stored in the laydown area east of the Unit 1 cooling towers. The inspector examined the storage conditions of the two vessels on several occassions. The interior of both vessels is under a positive inert gas pressure and the supporting cribbing for both appears sturdy and adequate. The area surrounding each vessel appears to be adequately roped off to prevent vehicular access and possible damage therefrom. It appeared to the inspector that the procedures for protecting the vessels in outdoor storage were being followed.

No items of noncompliance or deviations were identified.

7. Reactor Coolant Pressure Boundary and Safety Related Piping Installation

a. Component Installation Activities

Various work activities associated with handling and installation of Unit 2 piping components were observed to ascertain compliance with the ASME Code, FSAR and specification requirements. The systems involved were the essential spray piping serving the cooling system of diesel generator A, and the pressurizer surge line which ties into reactor vessel hot leg RC-032. Particular attention was given to the handling and supporting of components, use of specified materials, control of weld filler metal, absence of defects on component surfaces,



control of welding records in the work area, correctness of configuration, and inspection performance by qualified personnel. The 10-inch diesel cooling piping was a portion of lines 2-SPA-065 and -080 underground west of the diesel generator building and is shown on Drawing 13-P-ZYA-928. The 12-inch pressurizer surge line is in the 1A coolant pump bay, line 2-RC-028, and is shown on Drawing 13-P-RCF-101.

No items of noncompliance or deviations were identified.

b. In Process Welding Activities

Weld W-004 in the 14-inch safety injection line to reactor cold leg 1B was examined to ascertain compliance with the requirements of specification 13-PM-204, the ASME Code (Section III, 1974 edition) and Bechtel installation/inspection procedures WPP/QCI 100.0, 101.0 and 202.0. The weld joins spool S-003 of the injection line (2-SIE-223) to the 14x14x12-inch reducing tee which brings together the safety injection pump discharge line (2-SIE-221) and the outlet line (2-SIE-223) from the 1B safety injection line. The applicable drawing was 13-P-SIF-103 and the welding procedure specification was P8-AT-Ag. The weld had been completed through approximately 50 percent of the wall thickness (1.4 inches) and the workmanship appeared satisfactory.

A properly filled out Field Welding Check List (WR-5 Form) was present at the work location. Filler metal issue records (WR-6 Form) which identified the welder and the filler metal used were also present. The WR-5 Form identified the weld number, the system, and the applicable drawing number. Also specified were the welding procedure to be used, the material specification, preheat and interpass temperatures, and NDE requirements. The inspector verified that the WR-5 provisions were in accordance with the requirements of the ASME Code, Section III, 1974 edition. The qualification record of the welder was examined and found to be acceptable. The inspector observed that quality control inspection and supervisory surveillance were being performed to an appropriate degree.

No items of noncompliance or deviations were identified.

c. Underground Lines Installation

The inspector continued to follow the installation of the Unit 2 train A diesel generator cooling water lines (2-SPA-065 and -080). Activities examined were the replacement

of the temporary flange bolts with the specified bolts (A 325 high strength), coating of the flanges with rust preventive mastic, and hydrotesting of the lines prior to backfilling, and sealing of the penetration of the lines through the diesel generator building. The hydrotest data showed that the test had been conducted at the required 190 psi pressure (1.25 x design) for the specified 10-minute period and with currently calibrated gauges. No pressure loss occurred demonstrating a leak tight system.

No items of noncompliance or deviations were identified.

d. Examination of Completed Pipe Run

In order to ascertain that the installation was in accordance with the latest approved drawings and construction specification, an examination was made of the completed safety injection line from injection tank 2A through the installed check and control valving and other tie-ins to the 30-inch reactor cold leg (Line 2-RC-079). The applicable drawing was 13-P-SIF-136 and the governing specification was 13-PM-204.

No items of noncompliance or deviations were identified.

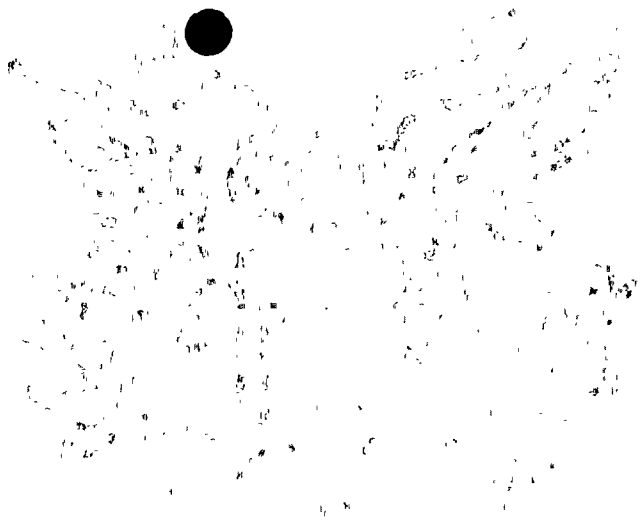
8. Pipe Supports - Unit 2

Installation activities associated with structural hangers for main steam line snubbers at the 140-foot elevation in the containment building were observed. The hangers were Nos. 2-SG-036-H015 and 2-SG-042-H015 for the main steam lines of the same numbers. The attachment welds to the concrete embeds were the specified sizes and the workmanship appeared very good. A segment had been cut out of the web of the support beam of hanger -042 to accommodate a 6-inch electrical conduit interference; an approved FCR had been issued for that modification. The governing specification was 13-PM-204 and the applicable drawings were numbered identical to the hangers.

No items of noncompliance or deviations were identified.

9. Emergency Lighting

The inspector noted from a review of the electrical drawings that the emergency lighting for the control rooms is not consistent with the description in the FSAR. This matter had also been identified by licensee QA personnel and had been referred to Bechtel engineering for resolution. One of the principal



concerns is that the emergency lighting battery banks (2) are in the same battery rooms as the safety related batteries. The inspector will follow the resolution of this matter (all units/81-24/02).

10. 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 heavy components, tagging and identification of material, adequacy of caps over pipe openings not being worked on, and presence of cribbing under stored pipe spools, valves, and other components. No welding electrode stubs were observed lying around the various work areas.

No items of noncompliance or deviations were identified.

11. Management Meetings

A meeting was held on December 4, 1981. Licensee and Bechtel representatives in attendance at the meeting are 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.