

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

REGION V

Report No. 50-528/80-09
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Docket No. 50-528/529/530 License No. CPPR-141,-142,-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: May 1-23, 1980

Inspectors: *R.C. Hayden* 7/10/80
for L. E. Vorderbruggen, Resident Reactor Inspector Date Signed

Date Signed

Date Signed

Approved By: *R.C. Hayden* 7/10/80
for R. T. Dodds, Chief, Engineering Support Section Date Signed
Reactor Construction and Engineering Support Branch

Summary:

Inspection on May 1-23, 1980 (Report Nos. 50-528/80-09, 50-529/80-09, and 50-530/80-09).

Areas Inspected: Routine, unannounced inspection by the Resident Inspector of construction activities including: followup on a previously identified item of noncompliance; Unit 1 -- cadwelder qualification, containment building closure, pipe hangers and supports, and electrical cable installation program; Unit 2 -- reactor vessel storage; Unit 3 -- containment liner welding; and, miscellaneous work in progress. The inspection involved 43 inspector hours on-site by one NRC inspector.

Results: No deviations or items of noncompliance were identified.

DETAILS

1. Persons Contacted

a. Arizona Public Service Company (APS)

- *E. E. Van Brunt, Jr., Vice President, Nuclear Projects
- J. A. Roedel, Manager, Quality Assurance
- *W. E. Ide, Site QA Supervisor
- G. Pankonin, QA Engineer
- R. D. Forrester, QA Engineer
- *D. Fowler, QA Engineer
- *R. J. Kimmel, Construction Engineer
- *S. L. Kesler, Construction Engineer

b. Bechtel Power Corporation (Bechtel)

- *S. M. Nickell, Construction Superintendent
- *D. R. Hawkinson, Project QA Supervisor
- *R. M. Grant, Project QC Engineer
- *A. K. Priest, Project Field Engineer
- *C. E. Gaither, Project Field Engineering Administrator
- R. Robinson, Area Lead Pipe Support Engineer
- H. Thomas, Pipe Hanger Field Engineer
- W. McKay, Welding Engineer
- E. Stone, Welding Engineer
- J. McLean, Welding Engineer
- V. Diaz, Civil Engineer
- M. Gardner, Cadwelding Instructor
- J. Robinson, Electrical Lead Field Engineer

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

*Attendees at management interview on May 23, 1980.

2. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance (50-528/80-02-01): Improper identification and storage of auxiliary feedwater system valves and pipe spools.

The corrective action identified in the licensee's response, dated April 18, 1980, was reviewed and the auxiliary feed pump rooms were reexamined as were several other plant areas where piping installation was in progress. The inspector verified that valves and other equipment were properly tagged and otherwise satisfactorily stored and protected. It was also verified that Procedure Change Notice No. 8 and Appendix V was incorporated in WPP/QCI No. 13, Housekeeping, to further improve inspection and deficiency resolution in this regard. This item is closed.

3. Unit 1 - Cadwelder Qualification

The demonstration of performance qualification by four ironworkers of cadwelding in the diagonal position was witnessed by the inspector. Each man cadwelded 2 sample joints using No. 18 reinforcing bar. Each weld was examined by a QC inspector for void content and then tagged for shipment to the Engineering Testing Laboratory in south Phoenix for tensile testing. All work operations were observed by the Bechtel cadwelding instructor and a Unit 1 civil engineer who checked that the procedural sequences and techniques were followed. The inspector subsequently examined the tensile test reports. All samples were tested on May 27, 1980 and each sample fractured well above (90-100 kips) the minimum acceptable value of 75 kips.

No deviations or items of noncompliance were identified.

4. Unit 1 - Containment Building Closure

Activities associated with closure of the construction opening in the containment building were examined. The liner segment which had been cut out to provide the opening was being welded back into position. Representative lengths of completed and partially completed welds were examined and were seen to exhibit acceptable workmanship. The records of the welder who was working at the time of the inspection documented that the welder was qualified in the welding procedure in use. The work appeared to be in accord with the applicable portions of Specification 13-CM-370, Containment Building Liner Plate System Erection. The inspector also observed the installation of reinforcing steel and tendon sheathing in preparation for closing the opening in the concrete. This work involved splicing to the existing stubs of rebar and sheathing. The governing specifications were 13-CM-371, Installation of Post-Tensioning Trumplate Assemblies and Sheathing, and 13-CM-375, Placing of Reinforcing Steel.

No deviations or items of noncompliance were identified.

5. Unit 1 - Pipe Supports and Restraints

The following pipe supports were randomly selected for examination:

| <u>Item</u> | <u>System</u> | <u>Support No.</u> |
|-------------|-------------------------------------|--------------------|
| 1. | Nuclear Cooling Water | INC-137-H-001 |
| 2. | Fuel Pool Cooling & Cleanup | 1PC-070-H-002 |
| 3. | Safety Injection & Shutdown Cooling | 1SI-159-H-002 |
| 4. | Safety Injection & Shutdown Cooling | 1SI-220-H-016 |
| 5. | Safety Injection & Shutdown Cooling | 1SI-240-H-011 |
| 6. | Safety Injection & Shutdown Cooling | 1SI-240-H-013 |

Items 1 and 6 were spring type hangers; the remainder were fixed supports. Each support had its own specific drawing bearing the same number as the support. General installation requirements are provided in Section 12 of Specification No. 13-P.M.-204, Installation of Nuclear Piping Systems, and the applicable procedure is WPP/OCI 201.1, Nuclear Pipe Hanger and Support Installation. The supports were examined to verify weld sizes, member sizes and type, presence of lockwashers and specified clearances. Although Items 1, 3 and 4 had not yet had final acceptance inspection, all items appeared to satisfy the specified requirements.

No deviations or items of noncompliance were identified.

6. Unit 1 - Program for Electrical Cable Installation

The following documents for the installation of electrical cable were examined to ascertain conformance with the QA program requirements and commitments made in Section 8.3 of the PSAR:

- a. Specification 13-EM-300, Installation of Electrical Cable in Cable Trays
- b. Specification 13-EM-301, Installation of Electrical Cable in Conduit and Duct Banks
- c. Specification 13-EM-303, Electrical Cable and Raceway Identification
- d. WPP/OCI 254, Electrical Cable Installation

In addition, discussions were held with Bechtel field engineering personnel in connection with the utilization of the Bechtel computer program EE-580, Cable and Raceway Control and Tracking System. This program automatically provides for cable routing assignment while ensuring proper separation of redundant cable groups. The computer program also prints out the pull cards which identify for the electricians the pathway sequence for each cable during installation. The specifications, procedures, and computer program appear to provide adequate usable information for cable installation.

No deviations or items of noncompliance were identified.

7. Unit 2 - Reactor Vessel Storage

The reactor vessel was examined for proper care and protection in the large component outdoor storage yard. The inspector observed that the vessel was appropriately roped off to restrict personnel access and that all openings in the vessel were properly covered and sealed. The protective coating was intact and the support structure and cribbing appeared to be adequate and showed no evidence of shifting.

No deviations or items of noncompliance were identified.

8. Unit 3 - Containment Liner Welding

The inspector visually examined vertical seams 3V1, 3V2 and 3V3, and horizontal seams H2-2 and H2-3. The welds had been completed and good workmanship was in evidence. Weld crown was found to be within the specified 3/32-inch allowance and no slag or undercut was evident. It was verified that the welding was performed in accordance with the specified welding procedure (No. P1-A-LH) by qualified welders. Radiographs had been made of the seams as required and were found to be acceptably free of indications and defects. The inspector also examined several tack welds in other horizontal seams that had been ground in preparation for making the root pass of the finish weld.

No deviations or items of noncompliance were identified.

9. Plant Tours

The construction site was toured several times during this reporting period to observe general housekeeping conditions, care and preservation of equipment, and general adherence to the requirements of the quality assurance program. Particular attention was given to work in progress, adequacy of desiccants in use, presence of covers over equipment and caps over pipe openings, and proper storage of valves and pipe spools on dunnage.

No deviations or items of noncompliance were identified.

10. Management Interview

On May 23, 1980, the inspector met with the project personnel identified in paragraph 1 to summarize the scope of his inspection activities and findings as described in this report.