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

REGION V

Report No. 50-528/80-08
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Docket No. 50-528, 50-529, 50-530 License No. CPPR-141, -142, -143 Safeguards Group

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

Facility Name: Palo Verde Units 1, 2 & 3

Inspection at: Palo Verde Site, Wintersburg, Arizona

Inspection conducted: May 20-23, 1980

Inspectors: J. H. Eckhardt, Reactor Inspector — 8/11/80 Date Signed

P. P. Narbut, Reactor Inspector — 8/8/80 Date Signed

Date Signed

Approved By: for R. T. Dodds, Chief, Engineering Support Section
Reactor Construction and Engineering Support Branch — 8/11/80 Date Signed

Summary: Inspection on May 20-23, 1980 (Report Nos. 50-528/80-08, 50-529/80-08 and 50-530/80-08)

Areas Inspected: Routine, unannounced inspection by regional based inspectors of construction activities involving previous inspection findings, pipe welding, preheat and post weld heat treatment, containment liner welding, and licensee action concerning Part 21 deficiencies. The inspection involved 50 inspector hours on-site by two NRC inspectors.

Results: Of the areas inspected, no items of noncompliance or deviations were identified.

RV Form 219 (2)

## 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
   *S. L. Kesler, Supervising Engineer
   G. Pankonin, QA Engineer
   D. B. Fasnacht, Site Construction Manager
   R. D. Forrester, QA Engineer
   *D. E. Fowler, QA Engineer
   *R. J. Kimmel, Construction Engineer

   b. Bechtel Power Corporation (Bechtel)

   *S. M. Nickell, Project Supervisor
   *D. R. Hawkinson, Project QA Supervisor
   *C. E. Gaither, Assistant Project Field Engineer
   *R. M. Grant, Project QC Engineer
   *A. K. Priest, Project Field Engineer
   B. Jackson, Field Welding Engineer
   G. Stam, Lead Field Welding Engineer
   R. Roehn, Lead QA Engineer for Surveillance
   R. M. Rosen, QA Engineer
   J. Robinson, Electrical Engineer
   J. E. Pfunder, Project QA Engineer

   c. Waldinger Corporation

   R. Yarges, QA Supervisor

   d. Ruskin Manufacturing Company

   S. Barrett, Assistant QA Manager

2. Licensee Action on Previous Inspection Findings

   a. (Closed) Noncompliance (50-528/79-02/04): Improper shipment, receipt, storage, and repair of diesel generators.

   The corrective action identified in the licensee's response dated August 3, 1979, January 11 and January 31, 1980 was reviewed. The permanently installed Unit 1 diesel generators and the stored Unit 2 diesel generators were examined. The Unit 2 diesel generators are stored in weathertight metal buildings with concrete floors and with temperature maintained between 40°F and 140°F. The storage is considered to meet the Level B requirements of ANSI N45.2.2. Inspection records were reviewed to verify that monthly inspections of the stored diesel generators have been performed.

In addition, it was verified that Procedure Change Notice No. 22 to WPP/QCI 5.0 was written to require damage that has occurred during shipment or receiving to be documented and dispositioned on a nonconformance report (NCR).

Corrective action concerning packaging and shipping of the diesel generators was verified by the licensee receiving Unit 2 diesel generators with the generator openings properly sealed.

This item is closed.

b. (Closed) Open item (50-528/79-02/01): QA personnel prohibited from performing detailed checks.

Two Bechtel QA surveillance personnel and the surveillance supervisor were interviewed. They indicated the former prohibiting practice was no longer in effect and that they in fact performed occasional detail checks as part of their surveillance checks. The inspector had no further questions concerning this item.

c. (Open) Noncompliance (50-528/79-09/01): Missing temporary cleanliness covers on piping.

The corrective action identified in the licensee's response dated February 28, 1980 was reviewed. During the inspection, several pipes and components were examined to determine the effectiveness of the formal training and indoctrination program for pipe fitters and welders concerning piping cleanliness requirements as discussed in the licensee's response. The random inspections included areas of Unit 1, 2 and 3 auxiliary buildings and Unit 1 and 2 containments. The only problem noted was the shell side of a letdown heat exchanger in the Unit 2 auxiliary building was observed to not be covered at the beginning of a swing shift. No work was in progress in the area at the time and the temporary covers were lying next to the openings. The licensee took immediate action to have the openings capped. The inspector considers this instance an isolated case, but the item will remain open pending further inspections.

d. (Open) Noncompliance (50-528/80-01/06): Improper control of weld electrodes.

The corrective action identified in the licensee's response dated March 26, 1980 was reviewed. Areas of welding activity in Units 1, 2 and 3 were checked to determine the effectiveness of the corrective action taken by the licensee regarding weld material control. Also, rod room numbers 10, 12, and 15 (one room for each unit) were inspected and the rod room attendants

interviewed concerning rod distribution and disposal requirements. The only problem identified was a stub bucket containing 7018 rod stubs in the Unit 1 HVAC and pipe chase room on early swing shift. No welding activity or welders were in the area at the time. The licensee took immediate action to have the rod stubs properly disposed. The inspector considers this an isolated instance and considers the control of weld material generally satisfactory. However, since continued emphasis is needed in this area, the item is considered open pending further inspections.

3. Preheat and Post Weld Heat Treatment of Low Alloy Steels

The inspector examined the licensee's method of controlling preheat and postweld heat treatment to ascertain compliance with Regulatory Guide 1.50 "Control of Preheat Temperature for Welding Low Alloy Steels" as modified by the PSAR Section 3J commitments pertaining to Regulatory Guide 1.50. In addition, the use of preheat and postweld heat treatment for NSSS clad pipe welds was examined for information relating to Operating Experience Memorandum No. 21 "Cracks caused by faulty fabrication process in France". Per discussion with the Lead Field Weld Engineer the inspector determined that preheat requirements for the application of cladding are 70°F - 200°F for the welding of the carbon steel with a maximum interpass temperature of 500°F. The NSSS RCS piping is SA516 Gr70 which is a carbon steel versus a low alloy steel. The steam piping is SA420 WPL-6- material which is a carbon steel.

The current sequence of operation practiced for NSSS RCS piping is to preheat, weld carbon steel, backgrind the carbon steel, weld the carbon steel background area, drop the preheat, liquid penetrant examine, perform an information radiographic examination, perform clad weld, final radiographic examination, and then post weld heat treat.

The inspector determined that the described sequence meets the requirements of 1974 Edition of ASME B&PV Code Sect. III Part NB through Winter 1975 and Regulatory Guide 1.50 with the exceptions listed in the PSAR.

4. Reactor Coolant System Piping - Welding

The inspector examined reactor coolant loop piping welding in Unit 1 for conformance to the ASME B&PV Code Sect. III NA 1974 Edition through Winter of 1975 and ASME Section IX 1977 Edition. It was noted that the licensee is not committed to any particular Edition of the Code and, for welding, uses the latest Edition and Addenda.

The inspector examined 30" weld joint RC-084 W-003 Dwg 13 P-ZCG-103. The welder was removing rejected porosity indication in the weld metal by grinding. The inspector verified by examination of the weld traveler that work had been accomplished with specified QC hold point verifications, with specified procedures and with proper weld materials as evidenced by rod withdrawal slips.

The inspector examined 16" stainless steel weld joint RC-068 BCAA W001 being welded with an automatic welding machine. The inspector verified welding was being accomplished within the weld procedure parameters as indicated on the weld machine settings and that the inspection hold point had been properly signed off on the weld traveler.

No items of noncompliance or deviations were identified.

5. Safety Related Piping (Welding)

The inspector examined the welding of safety related piping for conformance to the ASME B&PV Code Section III: 1974 Edition through Winter of 1975 and ASME IX 1977 Edition.

The inspector examined 31 1/2 inch carbon steel weld SG-036 DLBB Weld 001, 1.875 inch thick, reducer to steam generator nozzle weld. By inspection of the weld traveler, the inspector observed that 200°F preheat was required in accordance with Appendix D of ASME III and that proper materials were specified and used. Through discussion with the Quality Control inspector and the Lead Weld Field Engineer the inspector determined that welder current and travel speed were not required to be periodically checked in the field. For materials with notch toughness requirements the heat input is listed and in ASME IX as a supplementary essential variable.

The rationale for not checking the heat input in the field was explained to be that the weld procedure specification ranges of amperage, voltage and travel speed were so broad as to cover the ranges used by welders in the field. It was further explained that the parameters affecting heat input were qualified at the high and low ends of the range specified.

The inspector had no further questions on this item.

The inspector examined 31 1/2" carbon steel weld SG E-045 DLBB W001 steam generator nozzle to reducer weld. The weld was under repair due to a rejectable radiograph indication. Additionally, there was an applicable nonconformance report which stated preheat had not been required for the original weld. The inspector determined that the problem had occurred because the field weld engineer who specified that no preheat was required on the weld traveler had used the isometric which did not specify the wall thickness of the reducer. The piping downstream of the reducer was listed as 1 1/4 inch which does not

require preheat and the engineer assumed the reducer had the same wall thickness. The weld in question was to be final radiographically inspected and postweld treated after repair.

The inspector had no further questions on this item.

The inspector examined completed welds RCA-051 BCAA (16") and S1A-240 BCAA W007 (16") spool to elbow weld. Weld configuration and appearance were satisfactory.

No items of noncompliance or deviations were observed.

6. Followup on 10CFR Part 21 Deficiencies

Licensee action regarding the following Part 21 reports was reviewed:

a. Bunker-Ramo Amphenol Sams Penetrations

A loose wire problem had been reported with these electrical penetrations at another facility. It was determined that only Conax electrical penetrations are being used at Palo Verde. This item is considered closed.

b. Ruskin Fire Dampers

A Part 21 report was issued concerning the possibility of the springs of type NIBD23 vertical fire dampers slipping out of their retaining bracket spring slots and preventing closure of the damper. The proposed Ruskin Manufacturing Company correction for the spring slot problem was to install a clamp over each spring slot to prevent the spring from slipping out of its retaining bracket. Installation of the spring retaining clamps was observed on one fire damper unit. After installation of the spring retaining clamps an operational test of the fire damper was performed by lifting and releasing the blade package by hand. The fire damper operated satisfactorily during this test. An operational test of another fire damper unit (after installation of the spring retaining clamps) was performed by melting the fuse link with a torch to stimulate a fire condition. This test failed with the blade package closing only halfway due to the sides of the damper being distorted slighted inward. The licensee also observed this test and documented the failure on a surveillance report. The inspector noted the possibility of the fire dampers being distorted during handling or installation and not operating properly if needed. The licensee indicated that this possibility would be evaluated. This is considered a followup item (50-528/80-08/01).

7. Containment Liner Welding - Unit 3

Unit 3 containment liner plate erection and welding was examined to ascertain compliance with the following documents:

- WPP/QCI-61.0 Rev. 4, "Containment Cylindrical Liner Plate"
- WPP/QCI-101.4, "Control of Welding and Weld Map, Documentation of Containment Liner"
- Spec. 13-CM-370, "Erecting the Containment Building Liner Plate System"

In-process welding was visually examined for ring 1 to base liner welds and a repair weld for ring 1 to 2 in the penetration area. This included observation of welding being performed by five different welders. Also, cutting and grinding off of temporary attachments on the installed liner plate was observed.

Nondestructive examination records (MT, RT, and vacuum box) for selected liner plate welds and qualification records of six welders were reviewed. In addition, the tracking system to ensure the proper percentage of seams are radiographed for each welder was examined.

No deviations or items of noncompliance were identified.

8. Exit Interview

The inspectors met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on May 23, 1980. The scope and findings of the inspection as noted in this report were discussed.