ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Inspection Report: 50-528/95-13
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Licenses: NPF-41
NPF-51
NPF-74

Licensee: Arizona Public Service Company
P.O. Box 53999
Phoenix, Arizona

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

Inspection At: Wintersburg, Arizona

Inspection Conducted: June 19-23, 1995

Inspector: W. M. McNeill, Reactor Inspector, Engineering Branch
Division of Reactor Safety

Approved: Elmo E Collins 7/21/95
E. E. Collins, Acting Chief, Engineering Branch Date
Division of Reactor Safety

Inspection Summary

Areas Inspected (Units 1, 2, and 3): Routine, announced inspection of material condition and followup on previous inspection findings.

Results (Units 1, 2, and 3):

Maintenance

- The material condition of the plant had improved (Section 2).

Summary of Inspection Findings:

- Violation 9425-02 was closed (Section 3.1).
- Violation 9412-01 was updated (Section 3.2).

Attachment:

Attachment - Persons Contacted and Exit Meeting

DETAILS

1 PLANT STATUS

During this inspection period, all three plants were at full power.

2 MATERIAL CONDITION (92903)

In NRC Inspection Report 50-528/94-25; 50-529/94-25; 50-530/94-25, numerous material condition discrepancies were identified. During review of the licensee's actions in this area, it was noted that the licensee had previously identified the need for improvement in the material condition of the plant in a self-assessment. NRC letter, dated December 15, 1994, stated that the NRC would continue to monitor progress in this area.

The inspector reviewed subsequent licensee actions to improve general material condition. Nuclear assurance performed a quality surveillance, Evaluation Report ER-9-0141, dated February 8-9, 1995, which became part of Audit 95-003, "Maintenance Rule Program," dated April 6, 1995. In this surveillance, the reactor coolant and safety injection systems in Unit 2 were given a physical inspection. In particular, the surveillance focused on leakage, corrosion, excess vibration, and loose fasteners. These were some of the same concerns identified in NRC Inspection 50-528/94-25; 50-529/94-25; 50-530/94-25. The licensee found that the material condition was acceptable. The auditors initiated Condition Report/Disposition Request CRDR-9-5-Q041 to address minor concerns involving conduit terminations. The inspector found that the material condition reviews performed by the licensee were acceptable.

The inspector performed a visual inspection of the auxiliary feedwater pump rooms, condensate transfer pump rooms, and main steam support structures of all three units. In Unit 1, at the 100 feet elevation, the inspector found insulation laying on an electrical junction box. It was not bagged and tagged as expected by the licensee. The licensee staff removed this insulation from the room after the inspector reported it to them.

The inspector found the auxiliary feedwater system turbine exhaust had been modified to install additional drain lines in both Units 1 and 2 since the previous inspection. The resident inspectors had reviewed some aspects of this modification including the verification of the slope of the drain lines. The inspector had no technical concern. The design requirement of a slope of 1/4 of an inch per 10 feet of pipe was verified to be met. The actual slope as measured by the resident inspector was about 1 inch per 10 feet.

The inspector verified that the drain lines were designed and installed in accordance with the ASME Code. The inspector reviewed the modification package and the NIS-2 forms that documented the Code acceptance of this modification. The inspector found the extent of Code work covered the three lines as defined by the designer. This modification was unusual in that alternate tests replaced the hydrostatic as allowed by an NRC approved Code Case N-416-1. As a result, a code boundary was not at a valve, but a

alternate tests replaced the hydrostatic as allowed by an NRC approved Code Case N-416-1. As a result, a code boundary was not at a valve, but a circumferential pipe weld. The inspector verified that the current ASME Section XI Code inservice inspection program included the new pipe welds and pipe hangers from this modification. No concerns were identified with the Code boundaries.

3 FOLLOWUP ON RELATED ENGINEERING OPEN ITEMS (92903)

3.1 (Closed) Violation 528;529;530/9425-02: Failure to Maintain a Seismic Gap

This violation identified that the seismic gap had not been maintained between the condensate storage tank wall and the condensate storage tank pump room.

As corrective action, the licensee initiated Condition Report/Disposition Request CRDR-9-4-0496 and the engineering staff performed a visual inspection of all three units. Engineering found no similar conditions. The licensee initiated Work Requests 874673 and 877104 to remove the grout and establish the seismic gap between the north wall of the condensate transfer pump house and the condensate storage tank. After removal of the grout, some areas needed additional material removed to achieve the gap required.

The inspector performed a visual inspection of the condensate transfer pump room and the gaps associated with the tendon chase area known as the "wrap around" area. The "wrap around" area was a series of rooms tangential to the containment that shared the containment as one wall. A sheet metal covering, flashing, sealed the gap in the "wrap around" area. In Unit 2, the inspector found that some flashing was missing from west side of the "wrap around" at 85-90 feet elevation (tendon side) and questioned the licensee about the missing flashing. The licensee stated that Work Order 879691 had previously been generated to correct the deficiency.

The inspector questioned a Unit 1 condition where some flashing stopped about 2 feet from the ceiling or the lower side of the upper deck (88 feet elevation, west side of "wrap around" [both tendon and non-tendon sides]; 100 feet elevation, east side of wrap around [nontendon side]; 120 feet elevation, east side of "wrap around" [nontendon side]). Engineering evaluated the condition and concluded that it was acceptable.

The inspector found the corrective and preventive actions satisfactory.

3.2 (Updated) Violation 528;529;530/9412-01: Failure to Incorporate Appropriate Acceptance Criteria, Example One

The first example of this violation addressed valve testing after a modification to change motor-operated valve gear ratios which changed valve stroke times. The post-modification testing did not incorporate appropriate acceptance criteria. Three cases were cited, and while the licensee accepted the violation, they disagreed with the second and third cases.

Condition Report/Disposition Request CRDR 9-4-0448 was written on the valves identified in the first case. As corrective action, the licensee revised Procedure 39AC-9ZZ02, "Valve Services Maintenance," to require valve services to consider stroke time acceptance testing following any gear replacement or similar maintenance.

The licensee performed a self-assessment of post-maintenance and post-modification testing. The results were documented in Audit Report 92-012 and Nuclear Assurance Evaluation Report ER-95-0038. The licensee found, except in the case of limited work orders, that retest requirements had been specified according to procedure. Three limited work orders of the 33 sampled did not have retest requirements. The auditors also found test requirements were in different locations within the work orders such as the cover pages, attachments, and comments sections.

The inspector verified that Procedure 39AC-9ZZ02 had been revised. Recent observation by the resident inspectors had found that appropriate acceptance criteria had been included in work orders.

The inspector reviewed additional information provided by the licensee for the second and third cases. The second case disagreement dealt with the establishing of acceptance criteria. The third case disagreement dealt with the appropriateness of acceptance criteria. Discussions with the licensee staff established that appropriate acceptance criteria were feasible. The criteria in the work orders did not discriminate between successful and unacceptable maintenance or modification efforts. For example, if a valve's gear ratio change resulted in a closing time to increase from 6.5 to 11 seconds, then an acceptance criteria of less than 12 seconds closing time was not discriminating. If the gear ratio had not changed, because wrong gears were selected or installed in an incorrect order, it could still pass the acceptance criteria.

The violation as cited stands with all three cases in example one. The corrective actions to the first case were sufficiently wide in scope to deal with the second and third cases.

ATTACHMENT

1 PERSONS CONTACTED

1.1 Licensee Personnel

W. Ahlstrom, Engineer
S. Coppock, Valve Service Section Leader
*T. Cannon, Acting System Engineering Director
*B. Elklund, Consultant
*B. Grabo, Section Leader
D. Hansen, Consulting Engineer
*R. Henry, Site Representative
R. Hogstrom, Authorized Nuclear Inspector
P. Johnson, Inspector
K. Jones, Maintenance Section Supervisor
J. Kriner, Valve Service Engineer
*D. Mauldin, Maintenance Director
*J. Minnicks, Valves Services Department Leader
*W. Montefour, Senior Representative
K. Schrecker, Senior Engineer

1.2 NRC Personnel

D. Gracia, Resident Inspector
*K. Johnston, Senior Resident Inspector
J. Kramer, Resident Inspector
A. MacDougall, Resident Inspector

In addition to the personnel listed above, the inspector contacted other personnel during this inspection period.

*Denotes personnel that attended the exit meeting.

2 EXIT MEETING

An exit meeting was conducted on June 23, 1995. During this meeting, the inspector reviewed the scope and findings of the inspection. The licensee acknowledged the inspection findings as they were presented. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspector.