U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-528/89-34, 50-529/89-34 and 50-530/89-34

Docket Nos. 50-528, 50-529, 50-530

License Nos. NPF-41, NPF-51 and NPF-74

Licensee: Arizona Nuclear Power Project
P. O. Box 52034
Phoenix, AZ 85072-2034

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

Inspection Conducted: July 17-21, 1989

Inspectors: W. P. Ang — 8-3-89
W. P. Ang, Project Inspector — Date Signed

A. Johnson — 8/3/89
A. Johnson, Enforcement Officer — Date Signed

Approved By: W. P. Ang for — 8-3-89
S. Richard, Chief — Date Signed
Reactor Projects Branch, Section II

Inspection Summary:

Inspection on July 17-21, 1989. (Report Nos. 50-528/89-34, 50-529/89-34 and 50-530/89-34)

During this inspection the following Inspection Procedures were utilized: 30703, 37700 and 35702.

Safey Issues Management Systems (SIMS) Items: None

Results: Of the two areas inspected one violation was identified. This violation identified a lack of timely completion of post trip review corrective actions, paragraph 2.6.

General Conclusions and Specific Findings

Significant Safety Matters: Overdue post trip review corrective actions was identified.

Summary of Violations: 1

Summary of Deviations: None

Open Items Summary: Two new items identified.

## DETAILS

1. Persons Contacted

Arizona Nuclear Power Project (ANPP)

B. Ballard, Quality Assurance Director
*J. Reilly, Standards and Technical Support Director
*C. Russo, Assistant Quality Assurance Director
*T. Shriver, Compliance Manager
*G. Sowers, Engineering Evaluations Manager

The inspectors also met with other licensee and contractor personnel during the course of the inspection.

* Attended the Exit meetings held on July 20 and 21, 1989.

2. Design, Design Changes and Modifications (37700)

An inspection was performed on design changes and modifications to verify licensee compliance with NRC requirements and licensee commitments. The inspection included a review of system engineer activities, their responsibilities and authority. Applicable portions of the following licensee procedures and work documents were reviewed.

Licensee Procedures

- 42 OP-2ZZ04, revision 3, Plant Startup, Mode 2 to Mode 1
- 42 OP-2ZZ07, revision 2, Plant Shutdown, Mode 1 to Mode 2
- 70 PR-0AP01, revision 0, System Engineer Program
- 73 AC-0EE01, revision 0, Engineering Evaluation Request
- 73 AC-0MS01, revision 0, Plant Change Package
- 73 AC-0MS02, revision 0, Change Control Process
- 73 AC 9MS28, revision 0, Site Modification

Post Trip Review Reports (PTRR)

- PTRR 1-88-004 - Unit 1 Auxiliary Transformer Fire and Reactor Trip of July 6, 1988, report dated July 29, 1988
- PTRR 2-88-001 - Low Steam Generator # 2 Level Trip During Downpowering of November 16, 1988, report dated November 22, 1988.

Site Modification (S-MODS)

- S-MOD SM-EW-002, July 14, 1988, Essential Cooling Water to Nuclear Cooling Water Crosstie Valves Limitorque Operator Rotor Assignments

- S-MOD 2-SM-SF-005,Completed 7/88, Steam Generator Feedwater Control System Electronic Setpoints

a. S-Mod SM-EN-002

PTTR-1-88-004, Concern B.1 noted that during the July 6, 1988 auxiliary transformer fire and associated reactor trip, difficulties were encountered in attempting to cross-tie nuclear cooling water with essential cooling water by remotely opening cross-tie valve EWA-UV-145. Auxiliary Operators were subsequently able to partially open the valve at the valve location. The PTRR further stated that the suspected cause of failure was that the valve limitorque operator torque switch bypass setting was improperly set. S-MOD 1-SM-EW-002, had been prepared (5-11-88) to correct the suspected problem. This S-MOD was however, in the approval cycle at the time of the trip (7-6-88). The PTRR recommended corrective actions were to implement the S-MOD in Unit 1 prior to entering Mode 4 and to implement the S-MOD in Units 2 and 3 during the first outage of sufficient length but not to extend past the next refueling outage. At the time of this NRC inspection, the S-Mod had been completed in Unit 1, was being performed in Unit 3 and was scheduled for accomplishment in Unit 2 during its next refueling outage. The licensee considered the Unit 2 valves to be in conformance with Technical Specification requirements. The inspector observed from a review of the licensee's evaluation and surveillance test results that the valve would perform the required safety function of closure if the valve was open. The valve continues to remain in its closed position as required by the technical specification for system operability.

During the review of S-MOD SM-EW-002, the inspector noted that part of the reason for performing the S-MOD was also to address INPO significant operating experience report (SOER) 86-20. The SOER reported a San Onofre experience regarding Limitorque bypass torque switches that were on the same rotors as the valve position indication contacts and resulted in valves remote position indicating shut, when the valves were not fully shut due to bypass torque switch settings prematurely terminating valve closure motion. This condition was not the PTRR identified condition and did not appear to have been a problem experienced at Palo Verde. The S-MOD corrects both the PTRR noted problem and the potential for the SOER noted problem. However, since the S-MOD had not been performed in Unit 2, the inspector attempted to determine how the licensee confirmed that the SOER condition did not exist for the EW cross-tie valves that still had both the bypass torque switch and the closed valve position indication on the same rotor. In addition, the inspector inquired how the licensee fulfilled EW System Technical Specification (T/S) surveillance requirement 4.7.3.b - at least once per 18 months during shutdown, by verifying that each automatic

valve servicing safety-related equipment actuates to its correct position on a Safety Injection Actuation Signal (SIAS) test. This would require verification that the EW cross-tie valves shut during a SIAS. The System Engineer informed the inspector that the surveillance had been performed by verifying the remote valve position indication lights. The System Engineer agreed that if the SOER noted condition existed, depending on remote valve position indication, lights could be incorrect. The system engineer further stated however, that significant leakage past the valve would also be noted, if the valve was not fully shut, but no such leakage had been identified in the past. During subsequent discussions with the licensee, the licensee agreed to perform an engineering evaluation to confirm that the SOER valve misposition (i.e. not fully shut) condition did not exist for the Unit 2 EW cross-tie valves and that T/S 4.7.3.b, surveillance requirements had been met. The licensee performed this evaluation on EER 89-EW-014 and confirmed that the Unit 2 EW cross-tie valves were shut.

b. S-MOD 2-SM-SF-005

Concern 5 of PTRR 2-88-001, low steam generator #2 level trip during downpower, November 16, 1988, noted that S-MOD 2-SM-SF-005 changed the feedwater control system (FWCS) electronic setpoints for main feedwater turbine speed control. The PTRR further noted that necessary revisions to the operating procedures governing feedwater pump operation with the new FWCS program was not made subsequent to the S-MOD and before the plant trip. The PTRR also noted that the administrative procedure (73AC-9MS28) for processing of S-MODs had been changed subsequent to issuance of S-MOD2-SM-SF-005 to require cross-discipline technical reviews of S-MODs prior to issuance, and hence preclude further repetition of S-MODs being completed without necessary changes to affected procedures being issued.

The PTRR, the S-MOD administrative procedure and the noted S-MOD were reviewed and discussed with the system engineer. The system engineer acknowledged that he misunderstood the needed procedure changes, and at the time considered that the procedure changes needed was for the I & C calibration procedure, and he did in fact change the I&C calibration procedure. The system engineer stated that the affected operating procedures (42 OP-2ZZ04 and 42 OP-2ZZ07) had since been changed to provide operators with additional instructions related to the FWCS setpoint changes, and provided the inspector the procedure changes.

The PTRR provided additional corrective action to assure that significant similar occurrences were also identified and corrected. The corrective actions required evaluation of the site-mod procedure, the system engineer program and system engineer interface responsibilities with the procedure writers, Plant Standards, to "determine if they are designed to prevent a similar event in the future." The PTRR further required the Engineering Evaluations Department (EED) to perform a "backfit" cross discipline review on a sample of current site-mods to evaluate the impact on plant operations. The above noted PTRR corrective actions were discussed

with the EED Manager and the Director of Standards and Technical Support. They confirmed that, at the end of this NRC inspection, the noted PTRR corrective actions had not been completed and would not be completed for another 30 days. At the end of this NRC Inspection the PTRR corrective actions were at least 5 months overdue past their original 90 day completion date. In attempting to determine the promptness of the above PTTR corrective actions, the inspector reviewed the Standards and Technical Support Directors "PTTR/SPEER Overdue Action Items" database. The July 17, 1989 database indicated that approximately 115 PTRR/IIR/SPEER action items were overdue, some of those items being overdue by approximately 16 months. 10 CFR 50 Appendix "B" Criterion XVI requires that measures be established to assure that conditions adverse to quality are promptly identified and corrected. The lack of timely completion of the above noted post trip review corrective actions, which represent potential contributors to future plant trips, was identified as Violation 50-528, 529, 530/89-34-01, "Lack of Timely Completion of Post Trip Review Corrective Actions."

c. Design Change and Modification Process

Various processes for initiating design changes and modifications were outlined in licensee procedures 73 AC-0EE01 (EER's), 73AC-0MS01 (PCP's), 73 AC-0MS02 (Change Control) and 73AC-9MS28 (S-MOD's). System engineers functions in these processes are further outlined in procedure 70PR-0AP01. These procedures and processes were reviewed and discussed with both the Engineering Evaluations Department (EED) Manager and the Standards and Technical Support Director. These reviews and discussions resulted in the following inspector observations.

- System Engineers perform a central function in these processes. System Engineers have significant responsibilities in these processes. System Engineers have some authority but ultimate authority for approving accomplishment of design changes and modifications rests with Palo Verde Management. For example, system engineers recommend design changes and modifications and provide an initial recommended priority for accomplishment of the changes. The EED Manager and a Plant Change Review Committee decides what changes are to be made and sets the final priority for accomplishment of the changes. The Standards and Technical Support Director stated that System Engineer authority will be increased with the implementation of a nonconformance report (NCR) process (scheduled for issue 8/1/89). The new NCR process will require correction of NCR conditions within the time frame specified by the System Engineer and approved by his/her supervision.

- The Plant Change Review Committee was composed of the EED Manager (Chairman) and the Plant Managers. The Standards and Technical Support Director stated that the licensee is currently studying changing the Plant Change Review Committee to a Plant Modifications Review Committee composed of the Site Director (Chairman), the Standard and Technical Support

Director, the Engineering and Construction Director and the Plant Managers. The procedure for the new process was still in draft form (scheduled for issue 9/1/89) and had not yet been implemented. No procedure outlining the composition and functions of the Plant Change Review Committee was available.

° The EED Manager informed the NRC inspector of the following statistics.

(1) S-MODs designed but not implemented or completed - Unit 1-35, Unit 2-34, Unit 3-33

(2) Design Change Packages issued but not installed - Unit 1-151, Unit 2-67 and Unit 3-71

(3) Design Change Packages in preparation stage - Unit 1-109, Unit 2-98, Unit 3-97

These design changes and modifications were of various significance and priority.

° The design change and modification procedures noted above contained requirements for establishment of a priority for implementation. However, only the EER procedure defined the priorities. The S-MOD procedure, the Change Control Process procedure, the Plant Change Package procedure and the System Engineer Program procedure did not reference the EER procedure for establishment of priority. The EED Manager stated that it was the EER procedure priority codes that was utilized for definition of implementation priorities. The EED Manager agreed that further clarification of the other procedures to reference the priority codes was in order.

Pending issuance of the Plant Modifications Review Committee procedure and clarification of the implementation priority code requirements, this was identified as Unresolved Item 50-528, 529, 530/89-34-02 - Plant Modifications Procedures Questions.

3. Inspection of Quality Verification Function (35702)

a. QA Hotline Investigations

An inspection was performed on the licensee QA Hotline process. Hotline File Number 89-31 was reviewed and discussed with the licensee. The Hotline item consisted of approximately 32 employee concerns dealing primarily with industrial safety. However, the Hotline item also included concerns dealing with ALARA, fitness for duty and "seismic scaffolding". Discussions with the QA Director and the QA staff indicated that Arizona State OSHA had already performed an inspection on some of the industrial safety concerns. However, the licensee's QA Hotline staff had just started preliminary investigations and information gathering on the Hotline item. The NRC inspectors encouraged the licensee to perform a thorough and unbiased investigation of the Hotline concerns. This

Hotline concern will be examined upon completion of the licensee's investigation.

No violations or deviations were identified during this inspection.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. One new unresolved item identified during this inspection is discussed in paragraph 2.c.

5. Exit Interview

The inspection scope and findings were summarized on July 20 and 21, 1989, with those persons indicated in paragraph one above. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments regarding the inspection findings were received from the licensee. The following new items were identified during this inspection.

Violation 50-528, 529, 530/89-01 - Lack of timely completion of Post Trip Review Corrective Action.

Unresolved Item 50-528, 529, 530/89-34-02 - Plant Modifications Procedures Question.