U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos.	50-528/84-50, 50-529/84-34 and 50-530/84-24	
Docket Nos.	50-528, 50-529 and 50-530	
License Nos.	CPPR-141, 142 and 143	
License:	Arizona Public Service Company	
	P. O. Box 21666	
	Phoenix, Arizona 85036	
Facility Name	e: <u>Palo Verde Nuclear Generating Station - Uni</u>	ts 1, 2 and 3
Inspection at	t: Palo Verde Construction Site, Wintersburg,	Arizona
Inspection co	onducted: September 24 - October 5, 1984	
Inspectors:	Knith Durch for	11/23/84 Date Sagned
	<u>K. D. Ivey Jr., Reactor Physical Action</u>	<u>II/25/84</u> Date Signed
Approved by:	L. F. Miller, Jr., Chief Reactor Projects Section 2	11/23/84 Date Signed
Summary:		
		

Inspection on September 24 - October 5, 1984 (Report Nos. 50-528/84-50, 50-529/84-34 and 50-530/84-24)

<u>Areas Inspected</u>: Routine unannounced inspection by regional based inspectors of licensee action on previously identified items, IE Bulletins and 50.55(e) items. The inspection involved 76 inspector-hours onsite by two NRC inspectors.

<u>Results:</u> Of the areas examined, one violation was identified in the area of incomplete licensee action in response to enforcement items. (paragraph 2.a. and 2.b.).

> 8412140348 841126 PDR ADOCK 05000528 PDR

• · .

, * g

*

DETAILS

1. Persons Contacted

a. Arizona Public Service Company (APS)

*E. E. Van Brunt, Jr., Vice President, Nuclear Production

*W. Ide, Director, Corporate QA/QC

*J. Bynum, Director of Nuclear Operations

- *L. Souza, Assistant Manager, Corporate QA/QC
- *T. Shriver, Manager, Quality Systems and Engineering
- *R. Kimmel, Transition Group Representative
- *R. Burgess, Field Engineering Supervisor

*R. Ozment, Startup Admin. Tech Support Manager

- *R. Hamilton, Quality Monitoring Supervisor
- D. Wittas, Quality Engineering Supervisor (Mechanical)
- A. Ramey, Quality System Supervisor
- W. Montefour, Quality Assurance Engineer
- R. Hopkins, Quality Assurance Engineer
- G. Irick, Quality Assurance Engineer
- R. Baron, Quality Assurance Engineer

b. <u>Bechtel Power Corporation (Bechtel)</u>

- *W. Stubblefield, Construction Manager
- *D. Hawkinson, Project QA Manager
- *F. Herman, Assistant Project Field Manager
- *P. Huber, Project Quality Coordinator
- H. Guire, Project Quality Assurance Engineer
- W. Creel, Senior Quality Assurance Engineer
- J. Waddington, Project Quality Control Engineer
- K. Sweeney, Engineer for Combustion Engineering Contract

c. Combustion Engineering

V. Krecicki, Assistant Project Manager

*Denotes those persons attending exit meeting, October 5, 1984.

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

•

• , • , • ,

.

2. Licensee Action on Previously Identified Items

a. <u>(Open) Notice of Violation (Enforcement Item Number 50-528/84-15-12)</u> Safety Injection Tank 1A Check Valve

Previous Inspection

Inspection Report 50-530/84-07 identified that valve 3-PSI-EV235 was found to have a bonnet stud nut with less than full thread engagement with its bonnet stud. Further investigation revealed that a minimum thread engagement criteria was not specified in local procedures. The failure to include minimum thread engagement criteria in procedures was identified as a violation of design control requirements.

The licensee issued CAR C84-053D, nonconformance report (NCR) PC-8259 and field change request 78.407-P to address this issue and determine the scope of the problem.

This Inspection

During this inspection the item was presented by the licensee as completed and ready for NRC review. The inspector found the following:

- (1) On the question of determining the scope of the problem of existing unacceptable minimum thread engagement of valve stud nuts to studs, the APS quality assurance department had taken the following actions:
 - (a) Inspected 260 values and found three values with less than full stud nut to stud thread engagement. The three values were identified on NCR's PC-8842 (value 3-PSI-EV245) and PF-9128 (values 3-PPC-EV125 and 3-PNC-AV191). On September 26, 1984, the NRC inspector found another similar value (3-PSI-EV237) had unacceptable stud nut to stud thread engagement on two studs.
 - (b) Closed out CAR C84-053D on August 24, 1984, NCRs PC-8259 and PC-8842 without obtaining engineering department review and evaluation of inspection results.
- (2) None of the APS action identified in paragraph (1) shows that APS obtained an engineering position regarding the technical acceptability of the as found valve conditions. If the as found condition is determined to be unacceptable then additional inspection and corrective action may be required.

-. .



Additionally, the APS QA personnel responsible for the completeness of actions on the NRC items were apparently unaware that the contractor (Bechtel) had performed a quality assurance audit of forty-one (41) Quality Class "Q", "R" and "S" valves and found hex bonnet nuts loose and/or missing on twelve (12) valves (of a different type). This audit identified thread engagement problems on nine (9) valves. Based on the audit, the contractor initiated a Deficiency Evaluation Report (DER) Number 84-53 on August 2, 1984 that reported Bechtel is currently evaluating its audit (#QAF101-S-84-37-A) results and that the evaluation for this review and final report are forecast to be completed by December 1, 1984. As noted earlier, APS closed CAR C84-053D on August 24, 1984.

The failure of APS to evaluate the technical acceptability of the as found conditions of thread engagement problems and the failure to consider the need for further inspection and corrective action is considered ineffective corrective action and a Severity Level IV violation of NRC regulations (specifically 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action"). An additional example of ineffective corrective action is provided in paragraph 2.b. below. (Violation 50-530/84-24-01)

Conclusions

At the Exit Interview the licensee committed to obtain Engineering Department review and evaluation of inspections results from CAR C84-053, NCR's PC-8509, PC-8842, PF-9128, along with any other similar NCR's on thread engagement, DER Number 84-53, and determine:

- (1) The scope of the problem.
- (2) If additional inspection is required.

÷

(3) If the as found conditions were technically acceptable or not.

b. <u>(Open) Unresolved Item Number 50-530/84-07-13, Safety Injection Tank</u> 1A Check Valve

Previous Inspection

Inspection Report 50-530/84-07 identified that valve 3-PSI-EV235 was found to have two bonnet studs with substantially more thread exposed above their bonnet stud nuts than the other six bonnet studs (which were approximately flush with their bonnet stud nuts). The inspector questioned, therefore, whether these two bonnet studs had sufficient thread engagement into the bonnet. Since detailed dimensional plans of the valves were not available for review, this matter could not be resolved. At the exit interview, licensee management committed to provide detailed information sufficient to allow the inspector to assess whether the two studs in question have acceptable thread engagement with the valve bonnet. The licensee issued CAR C84-053D to obtain the requested information.

. د د 1 - 1 **-**- 1 **-**- 1 r f the By F ₽ 1

1

. 1

11

4

1

1

∿. - ⊳ ^pi

• · · · · • t

• • •

This Inspection

During this inspection the item was presented by the licensee as completed and ready for NRC review. The inspector found the following:

- On the question of whether valve 3-PSI-EV235 bonnet studs had sufficient thread engagement into the valve bonnet, APS Quality Assurance (QA) Department had taken the following actions:
 - (a) Obtained actual length of studs (by stud removal), and reinstalled the two questioned studs into the valve bonnet with the proper one and one-half diameter thread engagement (per the vendor's recommendation for minimum stud to bonnet thread engagement). The original stud to bonnet thread engagement was not measured. Above work was performed per NCR PC-8259.
 - (b) Closed out CAR C84-053D on August 24, 1984, and NCR PC-8259 without an engineering department review and evaluation of whether the as found condition were technically acceptable.
 - (c) APS response to the CAR did not address whether the vendor provided recommended minimum stud to bonnet thread engagement was applicable to similar valves in other locations in the plant or if this new thread engagement criteria would be implemented for future valve work. On September 26, 1984, the NRC inspector found a similar valve, (3-PSI-EV245) which appeared to have less than the vendors recommended stud to bonnet thread engagement.

The failure to provide effective corrective action is considered an additional example of the violation cited in paragraph 2.a above.

c. <u>(Open) Notice of Violation (Enforcement Item No. 50-530/84-07-17)</u>, Cable Reels in Quarantine Without Hold Tags

Previous Inspection

Inspection Report 50-530/84-07 identified five reels of safety grade cable stored in a quarantine area for nonconforming material without being identified by a "Hold Tag". Further investigation revealed no nonconformances written for the cable reels. Failure to identify nonconforming material with a hold tag was identified as a violation of Bechtel procedures and 10 CFR 50 Appendix B, Criterion V. •

,

1. ÷ 14 ۰,

רי ו ו קי

The licensee's response to the violation was included in letter ANPP-29924-WFQ/TJB. The licensee identified four (4) reels of cable, one (1) "Q" class spool (NCR EY-4378) and three (3) "R" class spools (NCR EY-4379). The associated NCR's dispositioned the cables for rework and repair or replacement by the vendors. To avoid further noncompliance and confirm the integrity of the installed cable, the licensee committed to inspect available segments of both early and late installations for the same defects as mentioned on the NCR's. The licensee also committed to cordon off a section of the reel yard, highlighted with signs, for quarantined laydown. A Procedure Change Notice has been written to require questionable reels to be placed in the quarantine area pending an engineering evaluation of nonconformance to be performed within four days.

This Inspection

The response identified only four (4) reels versus five (5) reels observed and cited by the violation. Further, only one of the reels discussed in the response corresponded to the NRC identified reels (A781-0004; NCR EV-4378). The other three (3) reels identified by the licensee (384016, 384008, 435064; NCR EV-4379) do not correspond to the other four (4) reels cited by the violation (A771-0037 "2 spools", A374-0001, 82E-0018).

The inspector determined, through discussions with individuals present during the previous inspection, that there were actually eight (8) or more cable reels in the quarantine area during the inspection, not four as stated in the licensee's response. The NRC inspection had only recorded the five safety related cable's reel numbers. Upon notification of the violation in the cable reel yard, the Lead Electrical Field Engineer stated that he went to the quarantine area, wrote NCR's on the reels he determined were nonconforming (NCR's EY-4378 and EY-4379), and sent the rest of the cables back to the plant for use. He had determined the four other questionable class "Q" cables identified by the NRC to be satisfactory. The reels had apparently been shipped to the quarantine area after a general unit clean up.

The licensee's response was therefore incomplete and inaccurate, but the action taken by the licensee appear adequate after further investigation.

At the exit meeting, the licensee committed to provide a revised response to the previous Notice of Violation (Follow-up Item No. 50-530/84-07-17).

y

d. (Closed) Unresolved Item (50-528/84-15-09) Code Data Sheet Errors

This item involved discrepancies in the R-1 Form (registration of code components with the national standards board) contained in the N-5 Code Data Package for the Unit 1-1A reactor vessel support pad.

The use of the R-1 form was determined not to be a regulatory requirement. The R-1 Form is not required, per licensee procedures, to be a part of the Code Data Packages. This form is only included in the packages to ease the recovery of registration information. Other vital documentation included in the package included the correct information. The licensee has corrected the R-1 form.

This item is closed.

e. (Closed) Unresolved Item (50-528/84-15-07) Void in a Reactor Vessel

Support Column Pad

During an inspection, April 9-20, 1984, an inspector observed a surface void, approximately $2" \times 1/2" \times 1"$ deep, in the steel reactor vessel support column pad 1B in Unit 1. No documentation was available onsite to demonstrate that the void had been identified and evaluated.

The licensee initiated Startup Field Report (SFR) No. IRC-378 to identify the void and to provide a resolution. The finding was that the void was caused by an oversized bolt hole breaking through the top of the support column pad. Oversized bolt holes were discovered and dispositioned by the licensee when the support column pad was being installed. The void has a negligible effect on the structural integrity of the support and was dispositioned "accept as-is". However, to prevent water trapping, the licensee performed work to seal the void, Startup Work Authorization (SWA) No. 21951.

This item is closed based on the licensee's actions.

f. <u>(Closed) Unresolved Item (50-528/84-15-08) Records vs. Hardware</u> Discrepancy

During an inspection, April 9-20, 1984, the inspector noted a discrepancy between the amount of rework performed on the Unit 2-1A reactor vessel support pad and the amount documented in the completed procedure. Documentation identified three (3) holes as being drilled and plug welded. The inspector, through visual examination, identified only one (1) hole.

Upon subsequent visual inspection, the inspector noted the there were three (3) holes present. The two (2) "missing" plugged holes were evident when the pad surface was buffed.

This item is closed.

۰ ۶

,

1 4 , 1 1

, **v**

•

۰ ^۲ ۴

g. (Closed) Unresolved Item (50-530/83-03-02) Water Spray Used on Welds

This item was examined in report 50-530/83-11. The licensee performed tests on three materials to determine the effects of water sprays on the welds. No significant differences were noted in hardness values and the results were satisfactory.

The remaining issue identified in 50-530/83-11 was for the licensee to address whether all carbon steel weld materials used at PVNGS were represented by the tested materials.

In a letter dated August 4, 1983 (No. B/ANPP-Q-105335), the licensee identified the materials used at the site. The letter also states, "The metallurgical analysis performed adequately determines the potential for adverse effects that could result from spraying the welds with water".

This item is closed.

3. Review of IE Bulletins

Twenty-eight (28) IE Bulletins were identified by APS as ready for NRC review. The inspector reviewed these IE Bulletins and identified that they did not appear to be applicable to Palo Verde because they were not applicable to PWR facilities, required no specific action or response by Palo Verde, or the applicable issues will be handled by other review processes [such as ISI review, license technical specification review, etc.]: The IE bulletins reviewed and considered closed were numbers:

77-06	79-06	79-22	80-13
78-03	79-08	79-26	80-14
78-07	79-10	80-01	80-17
78-09	79-12	80-02	80-22
78-11	79-13	80-04	80-24
78-13	79-17	80-07	80-25
79-05	79-20	80-12	81-01

4. Review of 50.55(e) Items

The following four potential 50.55(e) construction deficiencies were identified by the licensee's representative as closed. The items were reviewed by the inspector to determine the thoroughness of the licensee's corrective action. The items marked with an asterisk (*) were judged by the licensee to be reportable under the 50.55(e) criteria; the others were considered not reportable.



ч . Ф

м

.

a. <u>(Open) DER No. 84-11: Chlorides, Fluorides and other Contaminants</u> Inside Electrical Conduit

The final report submitted July 11, 1984, by the licensee described the finding of chemical contamination of the conduit placed in the CEA Shroud, analysis of safety implications and corrective action taken. The final report did not provide an explanation of the root cause of the chemically contaminated conduit or identify whether any broader corrective actions were required. This additional information was requested by NRC in a letter sent August 2, 1984 to the licensee. Licensee personnel presenting the DER for closure were apparently not initially aware of the NRC letter requesting additional information.

This DER will remain open pending receipt of the additional information requested by NRC in the above letter.

b. <u>(Closed) DER No. 84-18*: Wiring Errors on Control Switch Found</u> After Work was Closed

The final report submitted September 10, 1984, by the licensee described that design change package (DCP) ISE-RM-083 required the installation of control switch CS-3 in 4.16 kv switchgear IE-PBB-504F and wiring revisions in accordance with BR3 of vendor drawing E009-186-9. The DCP was signed as completed on March 10, 1983, and during a subsequent site walkdown to verify vendor-installed wiring, a discrepancy in completion of the DCP was discovered.

The licensee initiated walkdowns and verification of vendor-installed wiring and wiring subsequently changed by Bechtel using DCPs. As a result of the reinspection program, additional errors were identified and either verified acceptable or corrected. The root cause of this condition has been evaluated as errors by crafts and QC in the installation of the wiring and the implementation of the DCP. To verify that similar problems do not exist in other disciplines, Bechtel engineering has implemented a series of similar walkdowns in those disciplines. The inspector examined walkdown inspection procedures and available inspection results and found the actions taken and information documented acceptable. This item is closed.

c. (Closed) DER No. 84-20, Pipe not Aligned with Valve (Cold Springing)

The final report submitted August 24, 1984, by the licensee described a misalignment between a 24 inch line flange and flanged butterfly valve 1J-SIB-UV-676, which resulted from disassembly of an already erected and tested piping system. With bracing under adjacent check valve 1P-SIB-V-206, butterfly valve 1J-SIB-UV-676 was removed. This resulted in a displacement to the applicable line (01-SIB-030-HCBA-24 inches) of 1-3/8 inches down and 3/4 inch laterally.





i.

•

ь

u 11) • •

`

с с — со с

ı**'**

р Э. •

μ

The licensee performed a survey of the subject line, calculated stresses in the piping system and found them within acceptable limits. The inspector examined available licensee documentation and actions taken, and found them acceptable. This item is closed.

d. (Open) DER No. 84-26, 4.16 KV SWGR Circuit Bracket and Plunger Interlock Bolt Assembly Damaged

The final report submitted September 21, 1984, by the licensee stated that circuit breakers in class 1E 4.16 KV switchgear were damaged during functional tests by improper use and/or improper installation of an adjustable test link. Since adjustable test links are not used in any other class 1E distribution centers, this problem is considered to be limited to the class 1E 4.16 KV switchgear. The root cause of bent 'C' clips (or L-shaped CAMS) was due to improper use and adjustments by jobsite personnel, due to inadequate procedures.

The above final report submittal was incomplete since the licensee had not recognized that Unit 1 inspections were still required by startup field report (SFR) No. 1XX-013/NCR SE-4413, or identified that this was an applicable document. On September 27, 1984, the inspector informed the licensee that the above SFR/NCR was still open with outstanding actions for DER 84-26. The licensee stated they would reopen the DER. The licensee committed on November 1, 1984 to issuing a supplement to the final report to include the identification of NCR SE-4413.

The inspector examined the licensee training procedures, training records and control system for issue of breaker test links. The inspector noted that the licensee held additional training, revised both training and work procedures to re-emphasize controlled use of test links. Also controls have been placed on the issue of test links on the job site, to ensure only properly trained and authorized personnel install or use breaker test links.

This DER will remain open pending licensee submittal of a supplement to the final report, identifying NCR No. SE-4413 as an applicable document in obtaining a final evaluation of the reported problem.

5. Exit Interview

The inspectors met with the licensee management representatives denoted in paragraph 1 on October 5, 1984. The scope of the inspections and the inspector's findings as noted in this report were discussed.

*ت*ي يا

•

.

ن . .

r

, -, -

1

-

•

. .

·