Arizona Public Service Company

September 10, 1984
ANPP-30471-TDS/TRB

U. S. Nuclear Regulatory Commission
Region V
Creekside Oaks Office Park
1450 Maria Lane - Suite 210
Walnut Creek, CA 94596-5368

Attention: Mr. T. W. Bishop, Director
Division of Resident
Reactor Projects and Engineering Programs

Subject: Final Report - DER 84-18
A 50.55(e) Reportable Condition Relating To Wiring Error On
LPSI 'B' PUMP CS-3 Switch.
File: 84-019-026; D.4.33.2

Reference: A) Telephone Conversation between P. Narbut and T. Bradish on March 26, 1984
B) ANPP-29315, dated April 18, 1984 (Interim Report)
C) ANPP-29664, dated June 6, 1984 (Time Extension)
D) ANPP-29974, dated July 16, 1984 (Time Extension)
E) ANPP-30278, dated August 20, 1984 (Time Extension)

Dear Sir:

Attached is our final written report of the deficiency referenced above, which has been determined to be Not Reportable under the requirements of 10CFR50.55(e).

Very truly yours,

EEVanBrunt/TRB

E. E. Van Brunt, Jr.
APS Vice President
Nuclear Production
ANPP Project Director

EEVB/TRB/nj
Attachment

cc: See Page Two

IE-27

cc: Richard DeYoung, Director
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U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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FINAL REPORT - DER 84-18
DEFICIENCY EVALUATION 50.55(e)
ARIZONA PUBLIC SERVICE (APS)
PVNGS UNIT 1

I. Description of Deficiency

Design Change Package (DCP) 1SE-RM-083 required the installation of control switch CS-3 in 4.16 kV switchgear 1E-PBB-S04F and wiring revisions in accordance with BR3 of vendor drawing E009-A86-9. This modification affected the addition of an isolation switch to the pump circuit breaker control circuit in which the wiring to the switch was incomplete. The DCP was signed as completed on March 10, 1983. During a subsequent site walkdown to verify vendor-installed wiring, a discrepancy in completion of the DCP was discovered and documented by NCR SE-3551, dated January 12, 1984.

To resolve concerns by both APS and Bechtel Management, Bechtel Engineering initiated an extensive walkdown and verification of vendor-installed wiring and wiring subsequently changed by Bechtel using DCPs. This walkdown included 130 safety-related wiring schemes which included at least 10,000 individual terminations in Unit 1. As a result of the reinspection program, the following additional errors were identified:

A. Low Pressure Safety Injection Pump "B" - two wires which should have been removed per NCR SE-3551 referenced above were electrically disconnected but not physically removed. The error of not removing two "spared" wires had no effect at all on the operation of the LPSI B pump control circuits.

B. Valves UV-659 and 660, High Pressure Safety Injection Recirculation Valves - (DCP SD-001) Jumper not installed to complete connection to the negative side. Absence of jumpers in valve circuits for UV-659 and UV-660 involves only the green light and ERFDADS' input and have no effect on the valve controls. Loss of this indication would not impact system operation since ERFDADS is a non-safety-related information system.

C. Valve UV-660 - Unused wires not removed after completing a modification. As described in "A" above, the presence of an unconnected spare end in these valve circuits has no effect on operation.

D. Refueling Water Tank (RWT) level indicator was incorrectly connected at the control board. The two-wire input was connected instead to the Reactor Make-Up-Water Tank level indicator. The RWT indicator wiring error affected only instrument CHB-LI-201. Instruments CHA-LI-200 and CHA, B, C, D-LI-203 A, B, C, D still remained to inform the operator of tank condition. Therefore, at least five indicators were available to check the single potential incorrect indicator. This would insure proper operation of the safety function of the RWT.

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.

II. Analysis of Safety Implications

The circuits were reviewed with respect to the specific wiring errors that were observed. The originally discovered error in implementation of DCP 1SE-RM-083 is the only condition found to be safety significant; however, it would have been identified and corrected as part of the prescribed startup testing activity and/or performance of the Demonstration Test.

The other identified conditions described as A, B, C, and D above have no effect on the operation of safety-related systems.

Since additional investigation has revealed no further safety significant items, it is concluded that there is no breakdown of the Quality Assurance Program and that this condition does not represent a significant deviation from construction requirements as defined in 10CFR.50.55(e).

Based on the above discussion, this condition is evaluated as not reportable under the requirements of 10CFR50.55(e) and Part 21.

III. Corrective Action

A. The wiring errors on Control Switch CS-3 in Switchgear 1E-PBB-S04F were corrected by NCR SE-3551, which received final disposition on January 12, 1984.

B. The wiring errors found during the inspection program were verified as correct or corrected in the following manner:

1. Low Pressure Safety Injection Pump "B": SFR 1SI-715 has been issued to recheck wire bundles and verify that the two wires, which should have been removed, have been removed.

2. High Pressure Safety Injection Recirculation Valves UV-659 and UV-660: Wiring corrections were performed by SWA #19591 and SWA #20008.

3. Refueling Water Tank Level Indicators: Instrument loop verification for RWT level CHB-LI-201B was made on April 4, 1984 and verified as correct to Startup test procedure 92GT-CZZ04.

4. To preclude recurrence of these deficiencies, the importance of attention to details and proper implementation of DCPs have been included in training sessions for craft and QC personnel. (Reference B/ANPP-M-113212, dated March 30, 1984.)

5. To verify that similar problems do not exist in other disciplines, Bechtel Engineering has implemented a series of walkdowns similar to that described in Section I of this report. Identification of these walkdowns is contained in Internal Procedure IP-5.26. Any potentially safety significant deficiencies found will be reported or, if applicable, cross-referenced to this DER.