

Arizona Public Service Company

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March 13, 1984
ANPP-29059-BSK/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

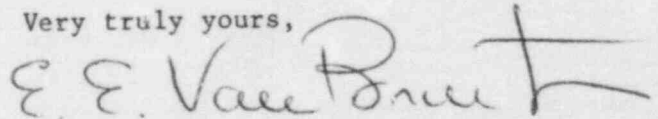
Subject: Final Report - DER 83-87
A 50.55(e) Potentially Reportable Deficiency Relating to
Valves SIAV470 And SIBV402 Were Found With The Handwheel
Adaptor Nut Missing And The Rising Stem Was Longer Than The
Operating Bridle.
File: 84-019-026; D.4.33.2

Reference: A) Telephone Conversation between T. Young and K. Parrish on
January 3, 1984
B) ANPP-28691, dated January 24, 1984 (Interim Report)

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,



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

EEVB/TRB:cl

Attachment

cc: See Page Two

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Mr. T. W. Bishop
DER 83-87
Page Two

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

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FINAL REPORT - DER 83-87
DEFICIENCY EVALUATION 50.55(e)
ARIZONA PUBLIC SERVICE COMPANY (APS)
PVNGS UNITS 1

I. Description of Deficiency

A. Valve SI V470:

On September 7, 1983, the manual operator for valve SI V470 on the suction of the HPSI "A" pump was disconnected and resting on the sprinkler system piping. The valve is used in the Safety Injection system to provide isolation during maintenance or repair of the HPSI "A" pump.

There was no record of the defective and/or nonconforming condition which included a missing stud nut however, preoperational testing of the subsystem was in progress. The valve was in a near open position.

Two problems existed which resulted in the condition being found. First, the bridle which is part of the reach-rod assembly supplied by Roto-Hammer Inc. was too short, thereby, allowing the rising stem to contact the top of the bridle before full valve opening was achieved. Second, with the adaptor retaining nut missing, the rising stem pushed the bridle/adaptor assembly up and off the stem nut, disengaging the actuator from the valve.

Investigation of these causes revealed that: (1) there is no procedural requirement to inspect the length of the bridle, to confirm the vendor selected, and supplied the required size to accommodate valve stem travel. (2) after installation of the remote operator and stroking in January 1983, and before the last known operation in August 1983, the valve was disassembled and improperly reassembled. This resulted in the missing adaptor retaining nut, the missing bonnet stud nut, the loose bonnet bolts, and the leaking bonnet flange.

B. Valve SI V402:

On September 28, 1983, the position indicator for valve SI V402 on the suction of the HPSI "B" pump was positioned so that the valve could only be opened 30 to 35 percent of its full open position.

The valve is used in the Safety Injection system to provide isolation during maintenance or repair of the HPSI "B" pump. There was no record of this condition however, preoperational testing was in progress.

During the installation of remote operators, construction is not required to verify length of stroke. The valve is stroked by APS personnel using the remote operator from stop-to-stop. In this case, the travel was restricted by the valve stem position indicator nut not being properly set on the valve stem. The indicator nut hit the top of the valve yoke and prematurely stopped valve travel in the open direction. Since the valve is stroked remotely, it would not be obvious that valve travel was being restricted. Therefore, the APS operator and Construction Engineer assumed the valve was full open when, in fact, it was not.

II. Analysis of Safety Implications

A. Valve SI V470:

The observed condition for valve SI V470, if left uncorrected, would have no impact on the safe operation of the Safety Injection system. The valve was in a near open position and this would have allowed the system to operate as per design intent.

B. Valve SI V402

The restriction on the operation of valve SI V402 to 30 to 35 percent of its full open position caused by the position indicator has been evaluated for safety significance. The observed condition, if left uncorrected, would not preclude the operation of the HPSI system in accordance with design intent. Calculation 13-MC-SI-017 determined that the NPSH available is approximately 20 feet greater than NPSH required, using a valve C_v of 1135. Per the telcon note, TN-E-3516 with the Borg-Warner (the valve supplier) and C_v of 1135 equates to a valve position of 10% open. Therefore, the system will perform to design intent with the valve 30 to 35% open.

C. Summary:

These conditions are evaluated as not safety significant. Fifty six (56) out of a total of eighty three (83) valves in Unit 1 have been inspected for proper operation and proper indication to date, and no other discrepancies have been found. The conditions concerning valves SI V470 and V402 are isolated cases. This condition is evaluated as not reportable under the requirements of 10CFR50.55(e) and 10CFR, Part 21.

III. Corrective Action

- A. The deficient condition of valve SI V470 has been corrected by Startup Field Request (SFR) ISI-292.

- B. The deficient condition of valve SI V402 will be addressed as part of the valve stroking required by Work Order (WO) 024447 and Startup Work Authorization (SWA) 15578.
- C. The valve reach rod supplier, Roto-Hammer Inc., has been notified of the condition concerning valve SI V470 and is supplying the correct assemblies for Units 2 and 3.
- D. Construction has revised the installation procedure (Special CIP 521.0) to require documented verification that the bridle being installed is the size specified for the particular valve for all future installations on the project.
- E. Startup with the assistance of Bechtel Engineering is preparing a generic surveillance test procedure (91GT-OZZ03) to verify that all major flow path valves in Units 2 and 3 are fully operable and position indication is representative of valve position. Startup with the assistance of Bechtel Engineering has or will verify all safety-related major flow paths valves.
- F. Investigation Requests 1-IR-020 and 2-IR-020 are being issued by Bechtel Engineering to document completion of these reinspections in Units 1 and 2. Unit 1 will utilize test procedure 91GT-OZZ03 to provide applicable instructions. Any nonconforming conditions found will be separately reviewed for reportability and dispositioned using the SFR procedure 90GA-OZZ19. There are no reach rods installed in Unit 3 at this time; however, the Construction and Startup procedures currently being implemented have been designed to preclude recurrence of deficiencies in this unit.
- G. APS will expand the Startup Work Authorization (SWA) procedure such that when a discrepancy is observed on equipment in the startup jurisdiction, a SWA or Startup Field Report (SFR) will be initiated. A copy of the SWA will be forwarded to the Unit Shift Supervisor for his information and to determine if a tag should be hung to identify the problem locally. All tags will be tracked and controlled by Operations personnel, with a copy of closed SWA's also forwarded to the Shift Supervisor to allow timely removal of tags.

- H. The operations phase Work Control Procedure will be similarly expanded to assure prompt identification of discrepancies, local identification tagging of previously identified significant problems, and tracking of tags until resolution.
- I. Before acceptance of a system or subsystem by PVNGS Nuclear Operations from the PVNGS Startup organization, a PVNGS acceptance walkdown will be conducted on the system to confirm that the system configuration is in accordance with design. The procedure to provide this instruction is currently in preparation.
- J. APS project management will issue a directive to all PVNGS Startup and Nuclear Operations personnel informing them of their responsibility to identify, pursue, and assure resolution of discrepancies identified in an expeditious manner. Personnel will also be instructed not to perform work without the proper authorization and controls.
- K. The appropriate operations phase generic valve repair procedures will include requirements to verify valve operability and position indication prior to return to service. This will be completed prior to fuel loading.