

Arizona Public Service Company

March 22, 1983
ANPP-29131-BSK/TRB

U. S. Nuclear Regulatory Commission
Region V
Creskide 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

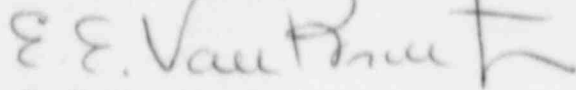
Subject: Final Report - DER 83-63
A 50.55(e) Reportable Condition Relating to HPSI Isolation
Valves By Borg Warner Failed To Open Against HPSI 'A' and 'B'
Pump Flows
File: 84-019-026; D.4.33.2

Reference: A) Telephone Conversation between P. Narbut and R. Tucker on
September 20, 1983
B) ANPP-28072, dated October 24, 1983 (Interim Report)
C) ANPP-28954, dated February 28, 1984 (Time Extension)

Dear Sir:

Attached is our final written report of the Reportable Deficiency under
10CFR50.55(e), referenced above.

Very truly yours,



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

EEVB/TRB:ru
Attachment

cc: See Page Two

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Mr. T. W. Bishop
DER 83- 63
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cc: Richard DeYoung, Director
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FINAL REPORT - DER 83-63
DEFICIENCY EVALUATION 50.55(e)
ARIZONA PUBLIC SERVICE COMPANY (APS)
PVNGS UNITS 1 & 2

I. Description of Deficiency

During preoperational testing on Units 1 and 2, the 2 inch motor operated (MOV) High Pressure Safety Injection (HPSI) valves, failed to open against the discharge pressure of HPSI pumps train A and B. The valves would not open beyond the bypass limit switch setpoint. This condition is attributed to incorrect torque switch settings and has caused loosening of the valve yoke to bonnet assembly. Further investigation revealed that this problem is generic to all the Borg-Warner Model 77620-2 HPSI valves furnished to PVNGS.

The HPSI valves are supplied by Combustion Engineering (C-E) and are manufactured by Borg-Warner Nuclear Valve Division. The valves are identified by the following unit tag numbers:

- 1, 2 & 3 -SIB-UV-616
- 1, 2 & 3 -SIA-UV-617
- 1, 2 & 3 -SIB-UV-626
- 1, 2 & 3 -SIA-UV-627
- 1, 2 & 3 -SIB-UV-636
- 1, 2 & 3 -SIA-UV-637
- 1, 2 & 3 -SIB-UV-646
- 1, 2 & 3 -SIA-UV-647

II. Analysis of Safety Implications

The HPSI valves are required to open and allow the HPSI pumps to deliver water to the reactor during a small pipe break LOCA or in the recirculation mode after a large pipe break LOCA to maintain the reactor coolant inventory. The identified failure mode of these valves would preclude the Safety Injection System from performing its safety-related function.

Based on the above, this condition is evaluated as reportable under the requirements of 10CFR50.55(e), since if this condition were to remain uncorrected, it would represent a significant safety condition.

The PVNGS Project considers the deficiency to be also reportable under the requirements of 10CFR Part 21. Deficiency Evaluation Report 83-63 addresses the reporting requirements specified under 10CFR21.21.(b) (3). CE letter V-CE-19168, dated 10-21-83, indicates that this condition is limited to PVNGS Units 1, 2, and 3.

III. Corrective Action

CE letter V-CE-19310, defines the corrective action as follows:

CE's corrective action for valves SI-616, 617, 626, 627, 636, 637, 646 and 647 for all 3 units is as follows:

1. A site inspection was made by Borg-Warner of all valves to verify that a 1979 factory modification to the torque spring packs has been incorporated.
2. Adjustment of the full open limit switch to stop the opening valve stroke at 95% plus/minus 4%. This maintains the present practice of opening these valves to their full open position.
3. Adjustment of the opening torque switch bypass limit switch to 65% plus/minus 5% of valve stroke (stem travel). This adjustment will prevent the motor operator from shutting off or torque below the CE maximum specified Cv.
4. Set both the opening and closing torque switches at position 4 in lieu of 3.25. This change is made to provide margin to assure completion of valve stroke during the time when the torque switches are in control.
5. The yoke will be tack welded to the bonnet to prevent loosening.
6. Adjustment of the "Open" light limit switch setpoint to go out at 1/8 inch of stroke before the valve is seated. Limitorque's stated accuracy for limit switch setting is plus/minus 1/8 inch.
7. NCRs SJ-2591 for Unit 1 and SE-2744 for Unit 2 will be dispositioned as "Repair." The repairs will be completed prior to fuel load for the respective units.
8. Unit 3 valves will be modified via DCP 3CM-SI-113 prior to fuel load.
9. All unit valves will be retested in accordance with Test Procedure 91PE-1SI08, on completion of modification program.
10. A copy of this report will be sent to CE for their review under the requirements of 10CFR21.