

Arizona Public Service Company

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February 29, 1984
ANPP-28935-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 83-32
A 50.55(e) Reportable Condition Relating to Socket Welds
In Unit 1 Steam Generator Process Piping Are In Violation
of Requirements
File: 84-019-026; D.4.33.2

Reference: A) Telephone Conversation between T. Young and R. Tucker on
May 25, 1983.
B) ANPP-24171, dated June 24, 1983 (Interim Report)
C) ANPP-27522, dated August 5, 1983 (Time Extension)
D) ANPP-28094, dated October 26, 1983 (Time Extension)
E) ANPP-28392, dated December 8, 1983 (Time Extension)
F) ANPP-28582, dated January 9, 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,

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

EEVB/TRB:pt
Attachments

cc: See Page Two

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PDR ADOCK 05000528
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Mr. T. W. Bishop
DER 83-32
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cc: Richard DeYoung, Director
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U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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FINAL REPORT - DER 83-32
DEFICIENCY EVALUATION 50.55(e)
ARIZONA PUBLIC SERVICE COMPANY (APS)
PVNGS UNITS 1

I. DESCRIPTION OF DEFICIENCY

Specification 13-PM-204, Revision 11, Paragraph 5.8.5 prohibits dissimilar metal socket weld connections in P8 to P1, P8 to P4 or P8 to P5 materials in ASME III Class 2 and 3 process piping when the operating temperature is 250°F or greater. During preparation for installation of Unit 2 valves 2PSGEV026 and 2PSGEV032, Field Engineering determined that the above requirements would be violated. An inspection of Unit 1 revealed that valves 1PSGEV026 and 1PSGEV032 had already been installed in violation of this requirement. Field Engineering issued a Field Change Request to correct this condition, and APS Quality Assurance subsequently issued APS CAR C83-72N to document this condition as a noncompliance.

The subject valves, located in the Steam Generator Wet Layup Recirculation lines (in containment), are Kerotest Model 329 2" globe stainless steel (P8 material) valves socket welded to 2" diameter carbon steel (P1 material) and alloy steel (P5 material) process piping. They are closed during normal plant operation, isolating the Quality Class S, Seismic Category III Wet Layup Recirculation pumps from the high temperature and pressures of the Steam Generator blowdown lines (one valve and pump per blowdown line, i.e., per Steam Generator). These valves are otherwise used in conjunction with the Wet Layup Recirculation pumps to perform the following functions: 1) to furnish a continuous flow of water through the Steam Generators during shutdown periods; 2) to add chemicals during wet layup; 3) to assist in draining the Steam Generators.

The subject condition is attributed to a failure to make the necessary changes in design drawings subsequent to agreement between Bechtel and Kerotest to substitute stainless steel valves for the originally specified Kerotest Model 327 alloy steel valves. Kerotest failed to qualify the seat weld for the Model 327 alloy steel valves and requested to supply stainless steel valves as a substitute. Bechtel Engineering authorized the substitution of stainless steel valves and, to comply with dissimilar metal socket weld requirements, indicated that the necessary transition pieces would be provided by Bechtel. This valve substitution was subsequently incorporated in the Material Requisition for Specification 13-PM-221C (Revision 4, issued 1/6/82) and the Valve Designation List (Revision 6, issued 3/29/82). However, the related piping isometric drawings, which are used by Construction, were never revised to show the required transition pieces or that the valves were stainless steel.

II. ANALYSIS OF SAFETY IMPLICATIONS

The subject valves are approximately 3'-9" from the Steam Generator blowdown lines (located between the Steam Generator Blowdown lines and the Wet Layup Recirculation pumps) and will thus be subjected to temperatures exceeding 250°F during normal operation. The socket welds could therefore potentially fail due to the difference in thermal expansion and contraction of the dissimilar metals.

Consequently, a pipe break at the valve could occur. However, an engineering evaluation, as documented by calculation 13-NC-PB-010 of this postulated pipe break (i.e., in the Wet Layup Recirculation line, a 2" diameter high energy line) has shown that no mechanistic (pipe break or jet impingement) problems would result nor would the operation of the steam generators be impaired. Though water would accumulate in the Containment sump and Containment environmental conditions (temperature and humidity) would change, these conditions result in no adverse safety implications. The function of the Wet Layup Recirculation pump would also be precluded; however, the functions of the pump (a Quality Class S, Seismic Category III component) are maintenance type operations not required for performing safe shutdown or for maintaining safe shutdown conditions. This postulated pipe break can further be isolated from the Steam Generator by closing the motor operated blowdown valve. Though this would require termination to the Steam Generator blowdown line, the blowdown line is not safety-related. Thus, if left uncorrected, the subject condition would not adversely affect the safety of operations of the plant during the lifetime of the plant; consequently, this condition is evaluated as not reportable under the requirements of 10CFR50.55(e).

III. CORRECTIVE ACTION

- A. Field Change Requests (FCRs) 59,606-P have been issued and approved by Engineering to install the necessary transition pieces for valves SGEV026 and V032, respectively, for Units 1, 2 and 3.
- B. Drawing Change Notice (DCN) 13 has been issued against Bechtel Drawing 13-P-SGF-122 (for valve V026) and DCN 18 has been issued against Bechtel Drawing 13-P-SGF-140 (for valve V032) to show the conforming configurations and material transitions for the 2" Steam Generator Wet Layup Recirculation lines.

III. CORRECTIVE ACTION (cont'd)

- C. Bechtel Engineering has performed a review of all SDDRs against the following valve purchase order specifications. This review included 333 SDDRs and represents a comprehensive review of all suppliers who could possibly have submitted a material substitution request for the type identified by this DER.

13-JM-605	13-PM-403B
13-JM-600	13-PM-403C
13-JM-601A	13-PM-222B
13-JM-601B	13-PM-222C
13-JM-603	13-PM-224
13-JM-604	13-PM-231
13-JM-705	13-PM-242
13-JM-691	13-PM-221A
13-JM-698	13-PM-221B
13-JM-696	13-PM-221C
13-JM-710A	13-PM-222A
13-JM-710B	

The results of the review determined that six (6) SDDRs dealt with material substitutions and are listed below:

<u>Specification No.</u>	<u>SDDR No.</u>
13-PM-403C	1921
13-PM-242	2705
13-PM-242	1793
13-JM-604	717
13-JM-705	2727
13-JM-705	2728

Based on the review of the above SDDRs against the associated specification purchase order, it has been determined that none of the SDDRs were related to the dissimilar metal weld problem and that this condition is verified as an isolated case.

- D. In addition, 60 randomly selected SDDRs issued against (13-PM-XXX identified) specifications were selected and reviewed to determine if any changes to Bechtel specifications or drawings were required and if the changes were implemented. The review indicated that 8 specification changes and 1 drawing change was required and that the changes were completed as committed by the engineering disposition.