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U. S. Nuclear Regulatory Commission  
Region V  
Creekside Oaks Office Park  
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Attention: Mr. T. W. Bishop, Director  
Division of Resident  
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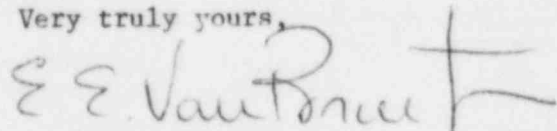
Subject: Final Report - DER 83-69  
A 50.55(e) Reportable Condition Relating To Unit 1 Seismic  
Supports On Posi-Seal Valves.  
File: 84-019-026; D.4.33.2

Reference: A) Telephone Conversation between P. Narbut and R. Tucker on  
October 11, 1983  
B) ANPP-28202, dated November 8, 1983 (Interim Report)  
C) ANPP-28587, dated January 10, 1984 (Time Extension)  
D) ANPP-28920, dated February 22, 1984 (Time Extension)  
E) ANPP-29455, dated May 8, 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 Production  
ANPP Project Director

EEVB/TRB:db  
Attachment

cc: See Page Two

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Mr. T. W. Bishop  
DER 83-69  
Page Two

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FINAL REPORT - DER 83-69  
DEFICIENCY EVALUATION 50.55(e)  
ARIZONA PUBLIC SERVICE COMPANY (APS)  
PVNGS UNITS 1, 2, 3

I. Description of Deficiency

Combustion Engineering Specification 14273-PE-705 Revision 5 (Footnote on page 1 of Specification Data Sheets) indicated that motor operated containment isolation valves SI-UV-673 and SI-UV-675 require shaft housing extension assemblies between the valves and their motor operators with a 17'-5" distance between the pipeline centerlines and the motor operator supports. To meet this requirement, the supports would have to be located on the motor operator. Since it is not project practice to attach supports on the motor operators, Bechtel designed the supports on the extension shafts at a distance of 13'-3" from the pipeline centerline.

Bechtel's seismic qualification review of the valves' seismic analysis performed by the valve supplier Posi-Seal International, Inc. for Combustion Engineering (dated January 5, 1978) revealed the difference between the design assumptions used for seismic analysis and the Bechtel designed support installation. The seismic analysis assumed that the motor operators were rigidly fixed at 17'-5" from the pipeline centerline. The supports were verified by field inspection to be at 13'-3" from the pipeline centerline.

II. Analysis of Safety Implications

Valves SI-UV-673 and -675 are containment isolation valves located in the emergency recirculation sump in the containment building. The valves are required to open during a Design Basis Event (DBE) to provide recirculation flow to the Safety Injection and Containment Spray Systems. Since the "As-Installed" configuration was incompatible with the seismic analysis, the capability of the valves to function properly both during and after a seismic event, is unknown. A detailed analysis of safety implications was not pursued since the condition was corrected.

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

The condition is also evaluated as reportable under 10CFR Part 21. This report satisfies all reporting requirements since this particular design condition is unique to PVNGS. These CE Posi-Seal valves are the only valves with the extremely long extension shafts between the valves and their motor operators.

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### III. Corrective Action

1. The valves' seismic analysis assumed the motor operators to be rigidly fixed. This assumption makes the valve assembly configuration's natural frequency greater than 33 cycles per second and therefore allows for a static seismic analysis. The supports as installed at 13'-3" from the pipeline centerline resulted in an assembly natural frequency of approximately 11 cycles per second (Bechtel preliminary calculation). This lower frequency (less than 33 cycles per second) would require a dynamic seismic calculation. To preclude this, additional shaft supports were installed by Bechtel at a distance of 16'-6-3/4" from the pipeline centerline to raise the frequency to greater than 33 cycles per second and validate the existing static analysis method. This work was completed via SFR 1SI-268 for Unit 1, DCP 2SS-SJ 99 for Unit 2, and DCP 3CS-SI-099 for Unit 3.

The current existing supports are:

<u>Valve No.</u>	<u>Support Tag No.</u>	<u>Distance From Pipe Centerline</u>
SI-UV-673	13-SI-007-H001	13'-3"
SI-UV-673	13-SI-007-H002	16'-6-3/4"
SI-UV-675	13-SI-030-H001	13'-3"
SI-UV-675	13-SI-030-H002	16'-6-3/4"

This support configuration was provided to Combustion Engineering and CE performed a new seismic analysis which confirmed its acceptability provided the diametral clearance between the extension shaft and support is reduced to a maximum of 1/32 of an inch.

To satisfy CE's clearance requirement, Bechtel has provided the following design changes:

<u>Support Dwg. No.</u>	<u>FCR No.</u>
13-SI-007-H-001	80142-P
13-SI-007-H-002	80134-P
13-SI-030-H-001	80141-P
13-SI-030-H-002	80135-P

2. Support requirements for all other safety related valves have been reviewed to verify that this is an isolated event.