

Arizona Public Service Company

April 24, 1984  
ANPP- 29357-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

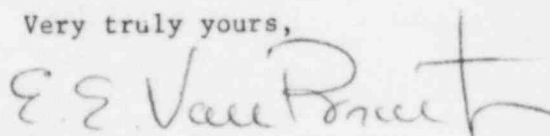
Subject: Final Report - DER 83-71  
A 50.55(e) Reportable Condition Relating to Pacific Scientific  
Shock Arrestors May Have Generic Defect.  
File: 84-019-026; D.4.33.2

Reference: A) Telephone Conversation between P. Narbut and R. Tucker on  
October 11, 1983  
B) ANPP-28200, dated November 8, 1983 (Interim Report)  
C) ANPP-28580, dated January 9, 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:db  
Attachment

cc: See Page Two

8405090054 840424  
PDR ADOCK 05000528  
S PDR

1E-27 1/1

Mr. T. W. Bishop  
DER 83-71  
Page Two

cc: Richard DeYoung, Director  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

T. G. Woods, Jr.  
D. B. Karner  
W. E. Ide  
D. B. Fasnacht  
A. C. Rogers  
B. S. Kaplan  
L. A. Souza  
D. E. Fowler  
J. Vorees  
J. R. Bynum  
J. M. Allen  
P. P. Klute  
A. C. Gehr  
W. J. Stubblefield  
W. G. Bingham  
R. L. Patterson  
R. W. Welcher  
H. D. Foster  
D. R. Hawkinson  
L. E. Vorderbrueggen  
G. A. Fiorelli  
S. R. Frost  
J. Self  
D. Canady

Records Center  
Institute of Nuclear Power Operations  
1100 Circle 75 Parkway, Suite 1500  
Atlanta, GA 30339

FINAL REPORT - DER 83-71  
DEFICIENCY EVALUATION 50.55(e)  
ARIZONA PUBLIC SERVICE COMPANY (APS)  
PVNGS UNITS 1, 2, 3

I. Description of Deficiency

Mechanical Shock Arrestors, Model No. PSA-1 and PSA-3 supplied by Pacific Scientific have experienced broken/cracked capstan spring tangs. There are 366 snubbers total for the three units. Thirty-one have been installed in Unit 1 in the following systems:

Condenser Air Removal, Chemical and Volume Control, Feedwater Heater Extraction Steam and Drains, Steam Generator Feedwater Pump Turbine, Feedwater, Main Steam and Safety Injection.

A metallurgical report by Mettek Engineering Technology Laboratories indicates spring cracking occurred because of stresses induced during spring forming which caused hydrogen cracking during subsequent silver plating.

Five (5) capstar springs exhibiting nondestructive magnetic particle examination indications were assembled into a test snubber and subjected to a dynamic load of 1500 lbs at frequencies of 3 to 33 Hz intervals for 10 seconds each at 100%, 75% and 50% of rated load.

The springs tested represented the "worst case" as determined by the nondestructive magnetic particle inspection.

Two (2) springs, survived the entire test (5940 cycles). One (1) spring, survived 533 full load cycles before both tangs failed.

One (1) spring, survived 1800 full load cycles before one tang failed, and one (1) survived 1850 full load cycles before one tang failed.

II. Analysis of Safety Implications

The failure of the capstan spring could affect the proper operation of the snubber, preventing it from performing its intended function during a seismic event.

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. Additionally this condition has been previously reported by Pacific Scientific Co. under 10CFR Part 21.

III. Corrective Action

Pacific Scientific letter dated September 21, 1983 identifies affected components which have been delivered to the PVNGS jobsite. NCRs PX-7496, PX-7479, PX-7529, PX-7532 and PX-7527, which cover Units 1, 2 and 3, have been issued to document the replacement of the identified snubbers. These NCRs will be completed no later than fuel load in each unit.