Docket No. 50-528/529/530

50.55(e) Report

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

April 6, 1983
ANPP-23441-BSK/RQT

U. S. Nuclear Regulatory Commission
Region V
Creekside Oaks Office Park
1450 Maria Lane - Suite 210
Walnut Creek, CA 94596-5368

Attention: Mr. D. M. Sternberg, Chief
Reactor Projects Branch 1

Subject: Final Report, Revision 1 - DER 82-44
A 50.55(e) Report Relating to Gould-Brown Boveri Load Centers Have Improperly Crimped AMP Termination Lugs
File: 83-029-026; D.4.33.2

Reference: A) Telephone Conversation between G. Hernandez and G. Duckworth on August 13, 1982
B) ANPP-21798 dated September 9, 1982 (Interim Report)
C) ANPP-22460 dated December 7, 1982 (Final Report)

Dear Sir:

Enclosed is revision one of the subject Deficiency Evaluation Report under the requirements of 10CFR50.55(e). This revision provides additional clarification of equipment to be inspected for compliance with crimp requirements.

Very truly yours,

E. E. Van Brunt

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

EEVB/RQT:wp
Attachment

cc: See Attached Page Two

1E27

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

T. G. Woods, Jr.
G. C. Andognini
J. A. Roedel
D. B. Fasnacht
A. C. Rogers
B. S. Kaplan
W. E. Ide
J. Vorees
J. R. Bynum
D. D. Green
P. P. Klute
A. C. Gehr
W. J. Stubblefield
W. G. Bingham
R. L. Patterson
R. W. Welcher
R. M. Grant
D. R. Hawkinson
L. E. Vorderbrueggen
G. A. Fiorelli

FINAL REPORT, REVISION 1 - DER 82-44
DEFICIENCY EVALUATION 50.55(e)
ARIZONA PUBLIC SERVICE COMPANY (APS)
PVNGS UNITS 1, 2 & 3

I. Description of Deficiency

During QC surveillance of the class IE 480V load centers supplied by Brown Boveri Electric Company (BBEL) several conductors were found partially pulled from the crimped area of AMP type lug connectors.

BBEL provided criteria for corrective action for determining acceptable termination crimps in 480V load centers furnished under PVNGS specification 13-EM-017. A followup random inspection performed by Bechtel construction in Unit 3 load centers (9 cubicles noted below) revealed that not all lug terminations were in compliance; however, no open circuits were apparent. In some cases, conductors were less than flush with the crimp connector barrel, and the ends of the wires were not visible under high intensity light and magnification.

L/C CUBICLE	TERM. POINT	WIRE I.D.
3E-PGA-L31B2	7	EA3
3E-PGA-L31B2	12	EA8
3E-PGA-L31E4	7	EL11
3E-PGA-L33B3	7	EA31
3E-PGA-L33C3	5	EA23
3E-PGA-L33C3	4	EA28
3E-PGB-L32B4	2	PHTB1
3E-PGB-L32D4	7	EA31
3E-PGB-L34C3	6	EA23
3E-PGB-L34C4	1	EK2
3E-PGB-L34C4	2	AH7
3E-PGB-L32D3	2	AB7

II. ANALYSIS OF SAFETY IMPLICATIONS

This condition is evaluated as Reportable. Connections with reduced contact area in termination lug barrels do not adequately assure the degree of electrical continuity required for reliable operations. If inadequately crimped lugs were left uncorrected, potential open circuits could jeopardize safety related functions of these load centers.

III. CORRECTIVE ACTION

All Class IE terminations, and the non-Class IE terminations associated with the non-Class IE Auxiliary Feedwater Pump, which utilize AMP crimp type lugs in load centers (Units 1,2,3) supplied by BBEL under specification 13-EM-017 shall be inspected for compliance to BBEL's visual criteria, which provide that the conductor shall be approximately flush with or protrude through the connector barrel up to approximately 1/16 inch. Any connectors which do not meet this requirement shall be removed and have a new AMP connector installed in accordance with Bechtel's termination practices established in construction specification 13-EM-306 (including proper usage and traceabilty of crimping tools). 1

This condition will be corrected via the following Design Change Packages:

10E-PG-016 20E-PG-016 30E-PG-016

In addition to reportabilty under 10CFR50.55(e), PVNGS Project considers the deficiency to be Reportable by the supplier under the requirements of 10CFR Part 21. Deficiency Evaluation Report 82-44 addresses the reporting requirements specified under 10CFR21.21(b) (3) with the exception of sub-part (vi) which requires the number and location (customers and/or facilities) of other possibly defective equipment. A copy of this report will be sent to BBEL requesting their review for reporting under 10CFR Part 21, including number and location of all components supplied.