



## Arizona Nuclear Power Project

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July 25, 1985  
ANPP-33108-TDS/TPS

REGION VI&E

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

Attention: Mr. D. F. Kirsch, Acting Director  
Division of Reactor Safety and Projects

Subject: Final Report - DER 85-22  
A 50.55(e) Reportable Condition Relating to  
Color Coded Visual Indicators Breaking Off Control  
Relays and Preventing Travel  
File: 85-019-026; D.4.33.2

Reference: A) Telephone Conversation between L. Miller and  
P. Coffin on June 4, 1985.  
B) ANPP-32950, dated July 3, 1985 (Interim Report)

Dear Sir:

Attached is our final written report of the Reportable Deficiency under 10CFR50.55(e), referenced above. The 10CFR Part 21 evaluation is also included in this report.

Very truly yours,

*EE Van Brunt Jr./JH*

E. E. Van Brunt, Jr.  
Executive Vice President  
Project Director

EEVB/TPS/nj

Attachment

cc: See Page Two

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July 25, 1985

Mr. D. F. Kirsch

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

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FINAL REPORT - DER 85-22  
DEFICIENCY EVALUATION 50.55(e)  
ARIZONA NUCLEAR POWER PROJECT (ANPP)  
PVNGS UNITS 1, 2, 3

I. Description of Deficiency

SFR 2XX-5048/NCR SE-5774 described a situation during generic testing of the Auxiliary Relay Cabinet in which the Normally Open/Normally Closed color coded visual indicators on the type ARD Westinghouse Industrial Control Relays had broken off. One broken indicator fell into relay E6/SSYL, and restricted the movement of the armature/crossbar assembly at Cabinet 2E-ZAB-C01. This precluded proper operation of the relay and associated class IE control circuit. Subsequent review by Engineering found debris such as wire markers, wire insulation, metal pieces and paper inside the relays (i.e., at Cabinet 3E-ZJB-C01, Relay DL/SLX5, contact 9-10, a piece of metal was found inside the relay housing).

EVALUATION

The indicator was broken during panel rewiring. The function of the indicator is to show the de-energized state of the contact. The absence of the visual indicator does not impact relay operability. The state of the contact can be determined with other means, such as resistance measurements across contacts.

Debris in the relay can restrict travel of the armature/crossbar assembly, thus preventing the contacts from changing state when required. The ARD relays are widely used in many Class IE control schemes. Malfunction of the relay could result in malfunction of safety related equipment.

The root cause of this deficiency was the craftsman's failure to properly follow specified work practices during panel rewiring. The relays were not properly protected from debris during rework and testing. Subsequent QC inspection did not discover this deficiency. However, QC inspection of rewiring in cabinets precludes detail inspection of internal components. The arrangement of the ARD relays in the Auxiliary Relay Cabinets is also unique, therefore, this condition does not apply to other cabinets at PVNGS.

II. Analysis of Safety Implications

Based on the above evaluation, this condition is evaluated as reportable under the requirements of 10 CFR 50.55(e), since, if left uncorrected, it would constitute a significant safety condition. This condition is evaluated as not reportable under 10 CFR 21 because the deficiency is not attributable to the supplier.

III. Corrective Action

Unit 1, EER 85-XI-001 was issued to inspect and clean all ARD relays and Auxiliary Relay Cabinets. The EER documented that none of the debris

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was found to have fallen into the relay in such a way which could have prevented the armature/crossbar assembly from traveling.

Unit 2 NCR SE-5774 and Unit 3 NCR SE-5808 will inspect and clean the relays in Unit 2 and 3. All debris, including damaged indicators will be removed. To prevent possible damage to remaining indicators, NCR dispositions stated that indicators on terminations where the lug is touching or exerting pressure may be removed or the lug may be bent outward to prevent it from touching the indicator. Unit 2 inspection was partially completed by SWA 17690. The remaining subsystems are scheduled for completion by September 1, 1985. Unit 3 inspection will be completed prior to fuel load.

WPP/QCI #255.0, Paragraph 5.2 includes provisions for visual inspection for damage to nearby equipment prior to and after cable termination. Construction Quality Talk dated July 2, 1985, which was also distributed to QC personnel, addresses this problem in the Auxiliary Relay Cabinets. The Quality Talk stresses the importance of good cleanliness and house-keeping practices and that the internal components must be adequately protected during construction and startup activities.

Installation Specification for Cable Splicing, Termination, and Supports, 13-EM-306 will be revised to add precautionary notes concerning termination on ARD relays in the auxiliary relay cabinets. SCN will be issued by July 31, 1985.