Docket Nos. 50-528/529/530

50.55(e) Report

Arizona Public Service Company

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February 23, 1983
ANPP-23068-GHD/BSK

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

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

Subject: Final Report - DER 82-55
A 50.55(e) Reportable Condition Relating to
D.C. Motor Feeder Cables Sizing May Not Provide
Sufficient Operating Voltage at Full Load

Reference: (A) Telephone Conversation between J. Eckhardt and G. Duckworth on September 30, 1982
(B) ANPP-22136 dated October 28, 1982 (Interim Report)
(C) ANPP-22611 dated December 28, 1982 (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

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

EEVBJr/GHD:db

cc: See Attached Page 2

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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 82-55
DEFICIENCY EVALUATION 50.55(e)
ARIZONA PUBLIC SERVICE COMPANY (APS)
PVNGS UNITS 1, 2 & 3

I. DESCRIPTION OF DEFICIENCY

Bechtel Problem Alert E82-02 requested that each project review the adequacy of DC cable sizing. The Problem Alert requires that DC circuits be verified as adequate using the following criteria: Using the minimum bus voltage available, calculate cable sizes considering full load current and the resulting voltage drop in cables using the actual lengths between load and bus. Verify that selected cables are capable of withstanding the available short circuit current.

The subsequent engineering review of PVNGS DC motor feeder cables indicated that some cables were not adequately sized to provide the minimum rated motor operating voltage at the motor terminal. This condition is attributed to sizing the cable during design and then not confirming the design when final cable lengths and loads were known.

II. ANALYSIS OF SAFETY IMPLICATIONS

This condition is evaluated as reportable under the requirements of 10CFR50.55(e). This condition is considered to be a significant deficiency in final design released for construction. If left uncorrected, the condition could possibly preclude safety related motors from performing per design requirements, thus not conforming to the design basis criteria stated in the FSAR.

III. CORRECTIVE ACTION

1. All DC power and control feeder cables have been reviewed for correct sizing using final design cable lengths and loads. Calculation 13-EC-PK-130 Rev. 0 is currently being completed to document this analysis and will be issued by 2/23/83.

2. Design Change Packages 1CE-PK-021, 2CE-PK-021, and 3CE-PK-021 have been issued for Units 1, 2 and 3, respectively, to have Construction replace the under-sized cable.

3. All the design office personnel are being made aware of this condition. To preclude recurrence of this problem, a project cable sizing procedure to insure compliance with PVNGS criteria is being issued to establish definitive guidelines for sizing cables. The cable sizing procedure will be issued by 3/31/83.