Arizona Nuclear Power Project
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December 6, 1984
ANPP-31355-TDS/TRB

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

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

Subject: Final Report, Revision 1 - DER 84-55
A 50.55(e) Reportable Condition Relating To Unqualified Foxboro Modules.
File: 84-019-026; D.4.33.2

Reference: A) Telephone Conversation between P. Narbut and T. Bradish on August 17, 1984
B) ANPP-30536, dated September 17, 1984 (Interim Report)
C) ANPP-30872, dated October 17, 1984 (Time Extension)
D) ANPP-31052, dated November 5, 1984 (Time Extension)
E) ANPP-31128, dated November 15, 1984 (Final Report)

Dear Sir:

Attached is Revision 1 of our final written report of the Reportable Deficiency under 10CFR50.55(e) referenced above. This Revision provides clarification to the Corrective Action as requested by your office in the November 30, 1984 Exit Meeting held at Palo Verde.

Very truly yours,

E. E. Van Brunt

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

EEVB/TRB/nj
Attachment

cc: See Page Two

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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 84-55
DEFICIENCY EVALUATION 50.55(e)
ARIZONA PUBLIC SERVICE COMPANY (APS)
PVNGS UNIT 1

I. Description of Deficiency

As a result of an inventory investigation performed by the startup engineers against the Combustion Engineering (C-E) serial number list, IEC-84-675, there appeared to be four (4) Foxboro modules, (serial numbers 3647589, 3647581, 4712336, and 4712337) installed in Unit 2 instead of Unit 1, and a total of six (6) Foxboro modules are installed in Unit 2 which were not on the C-E serial number list. This raised the suspicion that some of the Foxboro modules have been commingled, i.e., some non-Class IE modules have been installed in Class IE cabinets.

Evaluation

This problem was evaluated by investigating: 1) the identification systems used by Foxboro; 2) the actual conditions at the site; and 3) evaluation of material control procedures and practices including quality-related procurement activities.

1) Foxboro has supplied Spec. 200 instrumentation to PVNGS under several purchase orders including C-E, Bechtel JM-111, subsuppliers through Zurn Industries (Auxiliary Steam Supply) and Water Reclamation Facility (WRF).

   When initial deliveries were being made to PVNGS, Foxboro had two categories of instruments, qualified (Quality Class Q) and nonqualified (non-Quality Class Q). They differentiated between the two by marking the qualified units with serial numbers for traceability and by not marking with serial numbers the nonqualified units. Unit 1 modules were Q Class and WRF modules were non-Q.

   Later, Foxboro recognized a requirement for instrumentation which had to maintain structural integrity, but was not required to function during a DBE. At this time, Foxboro initiated another program for identification of qualified equipments; Class I, Class II (structural integrity only) and nonqualified instrumentation.

   The Class I instrumentation is fully qualified environmentally for operation during and after a DBE. These units are each identified with a serial number and a classification code number CS-N/SRC. The Class II instrumentation is qualified to maintain only structural integrity during a DBE. These units are each identified with a serial number and a classification code number CS-N/SRD. Nonqualified instrumentation have neither the CS-N/SRC nor the CS-N/SRD code numbers and are not stamped with serial numbers. Equipment deliveries from Foxboro for Units 2 and 3 are in the latter category.

All Spec. 200 instrumentation classified by Foxboro as Class I and Class II are fabricated in accordance with the same QA procedures. The only difference is the documentation supporting the qualification of a given module. In fact, Class II modules can be upgraded to Class I by Foxboro such that a given serialized module can have the supporting qualification documentation backup to qualify it for Class 1E service.

2) As the second part of the problem evaluation, investigations were initiated and as a result of the investigations completed to date, it is concluded that material control procedures were not adequately implemented.

3) The third facet of the evaluation is covered in detail in DER 83-73.

Summary

This evaluation indicates that the root cause to these conditions is due to inadequate implementation of material control procedures which resulted in commingled modules.

II. Analysis of Safety Implications

This condition is evaluated as safety significant. Commingled modules could result in failure of safety-related systems under a DBE.

This condition is evaluated as reportable under 10CFR50.55(e) since it represents a significant breakdown in the Quality Assurance Program. This condition is evaluated as not reportable under 10CFR Part 21 since the affected cabinets had not been released to the client for use in operations.

III. Corrective Action

A. Remedial Action

Final disposition of NCRs SJ-4607 and SM-4778 requires investigation to determine the full extent of the problem in Units 1 and 2. The modules that were originally shipped for use in non-class 1E cabinets and are installed in Q1E cabinets will be documented and replaced with modules intended for IE service. Additionally, the non-nuclear grade modules installed in nuclear service cabinets, Class Q1E or otherwise, will be removed and each will be replaced with the correct modules as required. This action will also be documented on the applicable NCRs. Since Unit 3 is still in the construction phase, any nonconformance will be addressed by a Nonconformance Report (NCR) with specific reference to this Deficiency Evaluation Report.

B. Action to Preclude Recurrence

To address the root cause generically and to ensure that proper material control procedures and practices are implemented, Construction, Startup, and APS Maintenance have issued and implemented procedures for more direct control of materials.

All the above organizations are currently reviewing and monitoring these procedures to ensure that adequate material control requirements are implemented. Procedural improvements and implementation of same are being conducted on an on-going basis to ensure proper control.

Further detailed action to preclude recurrence is contained in the Corrective Action of DER 83-73.

C. Additional Action

Recognizing the need to address the generic implications of improper Q-Class instrumentation installations, the ANPP has initiated a comprehensive review of Q-Class instrumentation deficiencies. This review will evaluate Q-Class instrumentation installations to provide assurance that Q-Class instruments are installed per the requirements of applicable design documents. The scope of the evaluation and the results will be included in the final report for DER 84-27.