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REGION V FILE

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

Attention: Mr. T. W. Bishop, Director
Division of Reactor Safety and Projects

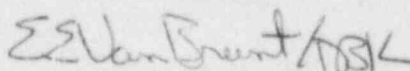
Subject: Final Report - DER 84-65
A 50.55(e) Reportable Condition Relating To Instrument Leads
Removed From The UGS Are Split.
File: 84-019-026; D.4.33.2

Reference: A) Telephone Conversation between D. Hollenbach and T. Bradish
on September 4, 1984
B) ANPP-30735, dated October 3, 1984 (Interim Report)
C) ANPP-30952, dated October 25, 1984 (Time Extension)

Dear Sir:

Attached is our final written report of the deficiency referenced above,
which has been determined to be Not Reportable under the requirements of
10CFR50.55(e).

Very truly yours,



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

EEVB/TRB/nj
Attachment

cc: See Page: Two

Mr. T. W. Bishop
DER 84-65
Page Two

cc: Richard DeYoung, Director
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U. S. Nuclear Regulatory Commission
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FINAL REPORT - DER 84-65
DEFICIENCY EVALUATION 50.55(e)
ARIZONA PUBLIC SERVICE COMPANY (APS)
PVNGS UNIT 1

I. Description of Deficiency

Regulatory Guide 1.20 requires that a comprehensive preoperational vibrations monitoring program be implemented for all first-of-a-kind reactors. In accordance with this regulation, the PVNGS Unit 1 reactor Upper Guide Structure (UGS) and Core Support Barrel (CSB) assembly are instrumented with pressure transducers, accelerometers, and strain gauges. These instruments are part of the Precritical Vibration Monitoring Program (PVMP). In addition to the instruments installed for PVMP, other instruments were installed on the UGS for monitoring during the Reactor Coolant System Demonstration Test. The PVMP and demonstration test instruments are not intended to be used during operation of the plant. Some of the above instruments were intended to remain attached to the UGS and CSB for the life of the plant with their leads cut and crimped and the remainder of the instruments were intended to be removed after completion of testing. One of the reasons for leaving some instrumentation in the reactor was that removal required stages of disassembly that were not planned to take place after testing. For this reason, this instrumentation was provided and installed in accordance with the same code as the vessel internals (ASME Boiler and Pressure Vessel Code, 1974 Edition, Section III).

While inspecting the leads of the instruments that had been removed from the UGS, it was discovered that the outer shielding had split, exposing the ceramic insulating material and the wire. NCR SM-4706 was issued to document this condition.

Evaluation

Concern over the splitting of the wiring insulation prompted Combustion Engineering (C-E) to evaluate the instrumentation that was to remain in the UGS and the CSE to determine if it should remain in place for the life of the plant.

C-E determined that the instrument leads to the three pressure transducers remaining on the UGS will not present a problem. The sheath, insulating material and wire for these instruments do not contain substances that would be detrimental to the Reactor Coolant System (RCS). C-E has concluded that instrument leads would not break into small pieces. However, if a lead should sever, it would fall to the bottom of the conduit into the instrument housing and be trapped. Since this is a low/no flow area, the leads, if broken, would be trapped in the housing for the life of the plant.

Instrumentation located on the CSB was intended to remain with the CSB for the life of the plant. However, C-E has determined that this instrumentation should be removed. In reaching this decision, C-E considered both chemical and mechanical concerns.

- a. The chemical concern identified was that of copper wire used in the strain gauges. The concern was that the copper could plate out on the fuel rods and affect heat transfer properties of the rods in the plated areas. The cumulative weight of copper in the reactor from possible instrument leads breaking off is estimated to be 118 grams. The quantity involved is very small and is considered to constitute no safety significance.
- b. From a mechanical perspective, C-E has postulated that, under worst-case conditions, a small piece of copper wire could become lodged between the fuel rods and the spacer grids. Under this condition local fretting may occur in an individual rod, but no gross failures would occur. Damage would be at most minimal.

II. Analysis of Safety Implications

Based on the above, this condition is evaluated as not reportable under the requirements of 10CFR50.55(e) and 10CFR Part 21; since, if this deficiency were to remain uncorrected, it would not represent a significant safety condition.

III. Corrective Action

NCR SM-4706 has been dispositioned to leave the instrument leads in the Upper Guide Structure (UGS) and to remove the leads from the Core Support Barrel (CSB).

No action is required for Units 2 and 3 since the subject instrumentation was installed on Unit 1 only.

IV. References

- Letter V-CE-30975, September 19, 1984
- Letter V-CE-31146, October 11, 1984