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REGION VICE

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

Attention: Mr. T. W. Bishop, Director
Division of Resident
Reactor Projects and Engineering Programs

Subject: Final Report - DER 83-62
A 50.55(e) Reportable Condition Relating to Core Support
Barrel Snubbers Have Loose Or Missing Cap Screw Retainer
Pins
File: 84-019-026; D.4.33.2

Reference: A) Telephone Conversation between P. Narbut and R. Tucker on
September 19, 1983
B) ANPP-28073, dated October 24, 1983 (Interim Report)

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.

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

EEVB/TRB:ru

Attachment

cc: See Page Two

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Mr. T. W. Bishop
DER 83-62
Page Two

cc: Richard DeYoung, Director
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FINAL REPORT - DER 83-62
DEFICIENCY EVALUATION 50.55(e)
ARIZONA PUBLIC SERVICE COMPANY (APS)
PVNGS UNIT 1

I. Description of Deficiency

During inspection of the Unit 1 Reactor Vessel (RV) after hot functional testing, it was revealed that the Core Support Barrel (CSB) snubbers had loose or missing cap retained pins. The snubber locations were identified as 0 degree azimuth, 50 degree azimuth and 180 degree azimuth. The core barrel snubbers are supplied by Combustion Engineering (C-E)

II. Analysis of Safety Implications

C-E letter V-CE-19266 addresses the analysis of safety implications as follows:

The design of the Core Support Barrel Snubber lug requires that the reactor vessel lug shims be removable to accommodate field sizing and machining operations. The resulting bolted connection incorporates a torquing arrangement to ensure a tight shim assembly during plant operation. A final torque of 275 ft-lbs is applied to each snubber attachment bolt to accomplish this purpose. To further assure that the bolts remain in place, staking pins are inserted to prevent rotation of the bolts. They are secured by upsetting material above the pin in the slot cut in the snubber shim for pin insertion. Finally, the shims, pins and bolts are captured in the assembly by the RV snubber lug and the CSB bracket geometry.

Following the hot functional testing of ANPP Unit 1, two staking pins were found to be missing. Also, several of the other pins were discovered to be loose in their holes. It is not known when the two pins became lost; they were photographed in place one week prior to installation of the core support barrel into the vessel. One possibility is that hot functional testing vibratory loads contributed to their becoming loose, allowing them to be lost during CSB disassembly operations. They cannot become lost once the CSB is in place.

If the pins are not present during plant operation the bolts are still expected to retain their applied torque due to the fact that anticipated vibratory loads are too small to affect the bolt preload. Other factors such as the bolt length to diameter relationship and the direction of the vibratory loads work to reinforce the retention of bolt preload. In essence, for the bolts to work loose, vibratory loads must change the original preload and this is not expected.

However, in the unlikely event that the bolt loses its preload, the shim will be retained by the close tolerance of .015" maximum between shim and bracket surfaces and also by the geometry of the bracket. The shim is physically held in place with or without the bolts being tight. C-E concludes that with the shim held in place, it provides the support required during a Design Basis Event. Therefore, the safety of operation would not be adversely impacted.

Based on the above, this condition is evaluated as not reportable under the requirements of 10CFR50.55(e) and 10CFR21, since if this condition were to remain uncorrected, it would not represent a significant safety condition.

III. Corrective Action

C-E has defined the corrective action as follows:

- A. A field retrofit has been initiated to replace the lost pins and to check all staking pins and pin holes to determine whether or not drawing tolerances have been met. For closer control longer staking pins and smaller gap at the top of the pin has been stipulated in the field retrofit. Meeting all installation requirements will assure that the pins are properly located prior to installing the Core Support Barrel.
- B. NCR SM-2578 will be dispositioned as "Repair" in accordance with C-E field retrofit instructions above.
- C. C-E will issue site process sheets to perform inspections on Units 2 & 3 to ensure all staking pins are properly installed.