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August 1, 1984 REGION V
ANPP-30095-TDS/TRB

U. S. Nuclear Regulatory Commission
Region V
Creskide 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

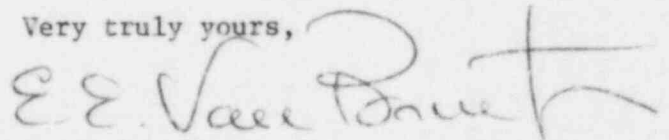
Subject: Final Report - DER 84-22
A 50.55(e) Reportable Condition Relating To The Unit 1 CEA
Shroud Support Was Found Contaminated With Oil.
File: 84-019-026; D.4.33.2

Reference: A) Telephone Conversation between T. Young and J. Cook on
April 20, 1984
B) ANPP-29529, dated May 17, 1984 (Interim Report)

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, Jr.
APS Vice President
Nuclear Production
ANPP Project Director

EEVB/TRB:nj
Attachment

cc: See Page Two

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Mr. T. W. Bishop
DER 84-22
Page Two

cc: Richard DeYoung, Director
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U. S. Nuclear Regulatory Commission
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FINAL REPORT - DER 84-22
DEFICIENCY EVALUATION 50.55(e)
ARIZONA PUBLIC SERVICE COMPANY (APS)
PVNGS UNIT 1

I. Description of Deficiency

On March 10, 1984, an unknown contaminant was discovered on the top surface of the CEA shroud support plate in Unit 1. Initial investigation indicated the contaminant was probably oil/hydraulic fluid that had leaked from one of the following devices on the Polar Crane:

- 1) Polar crane gear case, (supplier - Whiting Corp.)
- 2) Scissor jack, (supplier - Up Right, Inc., - Temporarily installed for maintenance)
- 3) Hydra-set, (supplier - Del Mer Avionics - Temporarily installed for maintenance)

In view of the susceptibility of stainless steel to stress corrosion cracking, swipes of the contaminant and samples of oil/hydraulic fluid from the suspect devices were sent to Combustion Engineering for analysis. It was found that the contaminant matched the hydraulic fluid from the scissor jack and that it had a chloride content of 440 ppm and a sulphur content of 6180 ppm, well above the acceptable range for these elements.

The oil used in the gear case is Chevron AW machine oil No. 150, the hydraulic fluid in the hydra-set is Aeroshell fluid No. 4, and the scissor jack uses Mobil fluid No. 423.

The scissor jack is used only during maintenance and is stored when not in use. It was purchased as a standard industrial component. The root cause of the contaminating hydraulic fluid on the CEA shroud support plate is the failure to anticipate potential leaks from the scissor jack.

Following are the results of the investigations made by engineering on the above three devices:

Polar Crane Gear Case

Whiting Corp. was contacted by Bechtel and has recommended the installation of retention bars around the gear case to confine the oil within its perimeter. Detailed drawings have been submitted to Bechtel by Whiting and DCP 1SM, 2SM, 3CM-AC--161 has been initiated to install the retention bars.

Scissor Jack

After discussion with Up Right, it was decided to install a drip pan under the scissor jack to contain any hydraulic fluid leakage which may occur.

Hydra-set

The only component in the hydra-set that contains oil is the auxiliary hoist control which is completely enclosed in a protective cover so any hydraulic fluid leakage will be contained in the bottom of the enclosure.

II. Analysis of Safety Implications

The high content of chlorides and sulphur in the scissor jack hydraulic fluid could have caused stress corrosion cracking had the drippings gone unnoticed and the area not been properly cleaned. Since the portion of the upper guide structure, where the oil spill occurred, is exposed to high stress levels this condition could have adversely affected CEA insertion and the ability to safely shut down the reactor.

Based on the above, this condition is evaluated as reportable under the requirements of 10CFR50.55(e) and Part 21, since, if left uncorrected, it would represent a safety significant condition.

This document satisfies the reporting requirements of 10CFR Part 21 with the exception of subpart (vi) regarding the number and location of such components supplied to facilities other than the PVNGS.

III. Corrective Action

- A. The contaminated area of the shroud was thoroughly cleaned and inspected to verify that no corrosion had occurred.
- B. Design Change Packages 1SM, 2SM, 3CM-ZC-161 have been issued to install an oil retention bar in the containment polar crane bridge drive gear case, main hoist and auxiliary hoist unit. This design will contain the oil within the perimeter of the gear case.
- C. APS has issued Work Order #45175 to install a drip pan under the scissor jack, common to all 3 units, to contain any possible leakage.