

**Detroit
Edison**

Wayne H. Jens
Vice President
Nuclear Operations

2000 Second Avenue
Detroit, Michigan 48226
(313) 586-4150

June 8, 1984
EF2-68538

JMB

Mr. James G. Keppler
Regional Administrator
Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

Reference: (1) Fermi 2
NRC Docket No. 50-341
(2) Letter, D.A. Wells to J.G. Keppler,
October 30, 1983, EF2-65291

Subject: Final Report of 10CFR50.55(e) Item 103
"Capstan Spring Tang Cracks on PSA-1 and
PSA-3 Mechanical Snubbers"

This is Detroit Edison's final report concerning Pacific Scientific capstan spring tang cracks in PSA-1 and PSA-3 mechanical snubbers. Item 103 was originally reported as a potential deficiency on September 30, 1983, and subsequently documented in Reference (2).

Description of Deficiency

As stated in Reference (2), Daniel International notified Detroit Edison of the potential deficiency after several failures (4 of 7) had occurred during testing of PSA-1 shock arrestors at the Callaway Station. The deficiency was identified as cracks in the capstan springs which, according to a metallurgical report, were produced by hydrogen induced cracking during the silver plating process. The source of the defective springs was traced to a new subvendor with whom Pacific Scientific has since discontinued as a vendor.

Pacific Scientific identified by serial number a total of 67 potentially deficient PSA-1 and PSA-3 units that were shipped to the Fermi 2 site. The following units were identified:

B406220240 B40608
PDR ADOCK 05000341
S PDR

JUN 18 1984

*ZE27
1/0*

Mr. James G. Keppler
June 8, 1984
EF2-68538
Page 2

- A. 34 PSA-1 Snubbers with serial numbers
18641 thru 18658
19577 thru 19580
21946 thru 21957
- B. 33 PSA-3 Snubbers with serial numbers
20957 thru 20989

Upon receipt of this information Field Hanger Engineering began a program to cross correlate the serial numbers of the potentially defective snubber with the Edison pipe support mark number. The installation status of each snubber was determined which expedited the return of the snubber to the vendor.

Analysis of the Safety Implications

Mechanical snubbers are installed on safety related piping systems to mitigate pipe stresses during strong vibratory motion (eg. earthquake). The capstan spring cracks, if left undetected, could have propagated during the "High Cycle" cyclic loading causing the springs to fail, thereby preventing the snubber from functioning as designed. Improper snubber operation could cause the pipe stresses, resulting from such loadings, to exceed their design limits.

Corrective Action

The snubbers were returned to the vendor in two groups. The first group consisted of twenty four snubbers, (13 PSA-1 and 11 PSA-3). The capstan springs in this group were subjected to magnetic particle examination and determined to be acceptable. The springs were reinstalled in their original snubbers and tested. All units passed the acceleration, lost motion, breakaway and running friction tests.

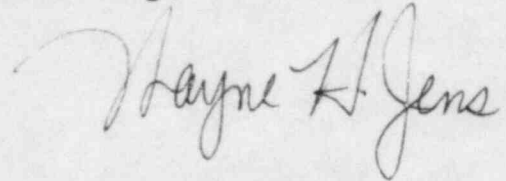
The second group consisted of forty three units (21 PSA-1 and 22 PSA-3). The capstan springs in this group were subjected to a magnetic particle examination with four being rejected. These four capstan springs were replaced. The snubbers were re-assembled and subjected to acceleration, lost motion, breakaway and running friction tests. All units successfully completed their tests.

Mr. James G. Keppler
June 8, 1984
EF2-68538
Page 3

All units have been returned to the Fermi 2 site and those units required to complete the necessary pipe support configurations have been installed. Units not associated with a particular pipe support are retained in the warehouse as spare units.

This is considered the final report on this item as this item is no longer considered a significant deficiency and is ready for NRC review and closure. If you have questions concerning this matter, please contact Mr. Lewis P. Bregni at (313) 586-5083.

Sincerely,

A handwritten signature in dark ink, appearing to read "Wayne H. Jens". The signature is fluid and cursive, with a large initial "W" and a stylized "H".

cc: Mr. P. M. Byron
Mr. R. C. DeYoung
Mr. R. C. Knop