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WPW Ltr #875-73

Dresden Nuclear Power Station
R. R. #1
Morris, Illinois 60450
November 28, 1973

Mr. J. F. O'Leary, Director
Directorate of Licensing
U. S. Atomic Energy Commission
Washington, D. C. 20545

SUBJECT: INSPECTION OF BERGEN-PATERSON HYDRAULIC SHOCK SUPPRESSORS AT DRESDEN NUCLEAR POWER STATION, UNIT #2, AEC DKT. 50-237

Reference: 1) Letter from Mr. D. J. Skovholt to Mr. J. S. Abel dated October 1, 1973

Dear Mr. O'Leary:

This letter is to report information concerning the station's third inspection of Bergen-Paterson hydraulic shock suppressors on Unit #2. The unit was shutdown on November 11, 34 days after the previous snubber inspection outage, to repair the turbine shaft driven oil pump bearing and the permanent magnet generator (PMG). Because the reactor was shutdown for longer than 24 hours a snubber inspection was performed as required by the above referenced letter.

Inspection of all 43 Bergen-Paterson snubbers on Unit #2 revealed one snubber in the drywell (I.D. #30) was out of oil and consequently declared inoperable. It was removed from the drywell for inspection and repair. Disassembly revealed the accumulator piston packing was installed backward. This finding would explain the gross leakage. Further disassembly disclosed the accumulator head seal was deteriorated, several manifold o-rings were brittle, and the accumulator to manifold tube fitting had a broken o-ring. During re-assembly the manifold to snubber cylinder tube ferrule broke which necessitated its replacement. In addition, the piston shaft was replaced. All seals removed were untreated polyurethane and all new seals installed were ethylene-propylene, with the exception of the accumulator seal and piston rod packing which are untreated polyurethane and the piston rod wiper which is teflon.

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It was also determined that 12 other snubbers in the drywell had low oil level indication on the accumulator. However, the oil level was not low enough to consider them inoperable. It is believed that the low oil level is due to small leaks, but because the leakage is small there is no evidence of fluid leaks or loss of overall integrity. Ten (10) of these twelve (12) had satisfactory oil level during the previous inspection. Two (2) had low oil at that time. If these two snubbers exhibit low oil level during the next inspection, they will be overhauled.

An inspection of eleven (11) Grinnell snubbers revealed all were operable. They had sufficient oil levels except for one (1) on the isolation condenser return line to the reactor which had a low oil level. All thirteen (13) mentioned snubbers in this report that exhibited low oil level were filled prior to resuming power operation on November 15, 1973.

The referenced letter also requested information describing snubber temperature and radiation environment at full power. Radiation dosimeters were placed at 33 different locations in Unit 2 drywell from May 19, 1971, to February 26, 1972. During these 283 days of normal plant operation, the maximum dose measured was 66.26×10^3 Rem of gamma. Extrapolating this to an annual period becomes approximately 85.5×10^3 Rem per year. Thermocouples were placed on four (4) snubbers in the Unit 2 drywell on August 12, 1973. They were located in a representative high temperature area. Since that time the highest temperature recorded has been 200°F.

Sincerely,

W. P. Worden

W. P. Worden
Superintendent

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