TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

December 20, 1983

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WBRD-50-390/83-61
WBRD-50-391/83-56

U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - LEAKING STEAM GENERATOR HYDRAULIC SNUBBERS - WBRD-50-390/83-61, WBRD-50-391/83-56 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector P. E. Fredrickson on September 27, 1983 in accordance with 10 CFR 50.55(e) as NCR 5003. Our first interim report was submitted on October 24, 1983. Enclosed is our final report. We consider 10 CFR Part 21 applicable to this deficiency.

If you have any questions, please get in touch with R. H. Shell at FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Licensing

Enclosure
cc: Mr. Richard C. DeYoung, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Records Center (Enclosure)
Institute of Nuclear Power Operations
1100 Circle 75 Parkway, Suite 1500
Atlanta, Georgia 30339





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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
LEAKING STEAM GENERATOR HYDRAULIC SNUBBERS
NCR 5003
WBRD-50-390/83-61, WBRD-50-391/83-56
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

The steam generator (SG) hydraulic snubbers at Watts Bar Nuclear Plant (WBN) were identified as leaking hydraulic fluid from various seals and connections. This leakage was observed during installation and testing. The SG snubbers were manufactured by Paul-Munroe Hydraulics, Incorporated, Orange, California. There are five snubbers per SG, 20 per unit.

The vendor has notified TVA in their letter dated October 14, 1983, that this deficiency was caused by fissures in seals which passed inspection at the time of manufacture, when less than 100-percent dye penetrant inspection was employed. The snubber seals are made of Tefzel. The vendor also stated that the fissured seal problem could have been aggravated by the repositioning of the seals during installation, which followed an unanticipated long-term storage.

Safety Implications

An excessive loss of hydraulic fluid from the snubber reservoir system over a period of time could have resulted in a complete loss of fluid inventory if not checked. This could have diminished the damping action of the snubbers, and subsequently could have resulted in excessive SG motion during a seismic event. This could have adversely affected the safe operation of the plant.

Corrective Action

TVA returned all of the SG snubbers from both units to the vendor for disassembly, evaluation of leakage, and repair. All of the Tefzel seals are to receive a 100-percent dye penetrant inspection and all seals found with fissures are to be replaced. The snubbers are then to be reassembled and tested for leakage. The snubbers are to meet the maximum leakage criteria of the procurement contract before being returned to the Watts Bar construction site.

The above stated action was accomplished for all unit 1 snubbers, and they were returned to the Watts Bar construction site. Reinstallation of the unit 1 snubbers will be completed by February 14, 1984. All corrective action for this deficiency for unit 2 will be completed by January 20, 1985.

To prevent recurrence of this deficiency, the vendor's inspection procedures now require that each Tefzel seal be 100-percent dye penetrant inspected before being accepted. Also, the vendor is now including long-term storage procedures for large bore snubbers in their contract procedures.

TVA has inspected the SG snubbers at Bellefonte Nuclear Plant (BLN) and has determined that there is no problem with the BLN snubbers. The BLN snubbers were also supplied by Paul-Munroe Hydraulics, Incorporated.

TVA also purchased Paul-Munroe Hydraulic Snubbers for use on the steam generators and reactor coolant pumps at the deferred Yellow Creek Nuclear Plant (YCN). The snubbers at YCN are being stored per vendor instructions and are stroked a minimum of 1/2-inch per year. No problems have been identified with the snubbers at YCN. This item has been referred to TVA's Deferred Nuclear Plants Project for consideration in the event that construction activity is resumed at YCN.