

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

March 30, 1984

WBRD-50-390/83-65
WBRD-50-391/83-60

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 - ENVIRONMENTAL QUALIFICATION OF
MECHANICAL EQUIPMENT- WBRD-50-390/83-65, WBRD-50-391/83-60 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector Linda Watson on November 9, 1983 in accordance with 10 CFR 50.55(e) as NCRs WBN NEB 8326, 8327, 8328, and 8331. Interim reports were submitted on December 13, 1983 and February 23, 1984. Enclosed is our final report for NCRs WBN NEB 8326 and NEB 8328.

Please note in our second interim report dated February 23, 1984, that TVA no longer considers the nonconforming conditions reported under NCRs WBN NEB 8327 and WBN NEB 8331 to be adverse to the safe operations of the plant. Therefore, we have deleted from our records these nonconformances as 10 CFR 50.55(e) items.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

D S Kemmer

for 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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1983-TVA 50TH ANNIVERSARY

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
ENVIRONMENTAL QUALIFICATION OF MECHANICAL EQUIPMENT
NCRs WBN NEB 8326 AND NEB 8328
WBRD-50-390/83-65, WBRD-50-391/83-60
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

The Nuclear Regulatory Commission (NRC) requested (in their letter to H. G. Parris dated April 1, 1983) that TVA provide a mechanical equipment evaluation report on safety-related equipment located in harsh environment areas for Watts Bar Nuclear Plant units 1 and 2. Impell Corporation, Norcross, Georgia, has completed a mechanical equipment qualification report for TVA. In this report, Impell notified TVA of certain nonmetallic materials that are sensitive to the effects of radiation. Impell has identified these materials to be in the safety injection, centrifugal charging, and containment spray pumps supplied to TVA by Westinghouse under the NSSS contract.

Safety Implications

TVA has no assurance that this mechanical equipment (i.e., safety injection, centrifugal charging, and containment spray pumps) necessary for the safe operation of the plant is capable of performing its required safety functions under all potential environmental conditions to which the equipment might be subjected. Failure of this equipment when subjected to an accident-induced harsh environment could adversely affect plant safety.

Corrective Action

The Pacific/Dresser centrifugal charging and safety injection pumps, and the Babcock and Wilcox containment spray pumps were not originally equipped with adequate material to endure the environment which they inhabit.

The pumps' nonmetallic materials ethylene-propylene-terpolymer (EPT) seal parts, the phenolic (micarta) worm gears, nitrile rubber gaskets and seals have been determined to be acceptable. The paper gaskets are not qualified and will be replaced by May 17, 1984, for unit 1 and by May 17, 1985, for unit 2 with a gasket made of one of the following materials: (1) asbestos spiral-wound stainless steel flexitallic, (2) asbestos with Neoprene binder, (3) asbestos with buna-N binder, or (4) Grafoil.

Action Required to Prevent Recurrence

A caution will be added by April 30, 1984, to the maintenance section of the subject pump manuals which will require that paper gaskets not be used when the pump is in a harsh environment. Only gaskets made of one of the following materials will be allowed. (1) asbestos spiral-wound stainless steel flexitallic, (2) asbestos with Neoprene binder, (3) asbestos with buna-N binder, or (4) Grafoil.

The subject pumps were ordered before implementation of state-of-the-art environmental qualification for all material in the pumps. Individuals involved in the procurement of pumps for the subject application have been informed via memorandum to consider the environment in which the equipment will be required to operate. Similar or identical equipment to that identified in these NCRs and that has been used at other TVA plants is being investigated and deficiencies found will be documented with NCRs accordingly.