

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

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WBRD-50-390/85-52
WBRD-50-391/86-14

U.S. Nuclear Regulatory Commission
Region II
Attention: Dr. J. Nelson Grace, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Dear Dr. Grace:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - IMPROPERLY INSTALLED SOLENOID VALVES -
WBRD-50-390/85-52, WBRD-50-391/86-14 - SECOND INTERIM REPORT FOR UNIT 1 AND
FIRST INTERIM REPORT FOR UNIT 2

The subject deficiency was initially reported to NRC-OIE Inspector
Al Ignatonis on October 9, 1985 in accordance with 10 CFR 50.55(e) as NCR WBN
6298. Our first report was submitted on this item for unit 1 on November 19,
1985. Subsequently NCR WBN 6566 was identified for this problem on unit 2.
This deficiency will be reported for both units together. Enclosed is our
second interim report for unit 1 and first interim report for unit 2. We
expect to submit our next report on or about May 2, 1986.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

R. Gridley
R. L. Gridley
Manager of Licensing

Enclosure

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

Records Center (Enclosure)
Institute of Nuclear Power Operations
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Atlanta, Georgia 30339

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
IMPROPERLY INSTALLED SOLENOID VALVES
WBRD-50-390/85-52, WBRD-50-391/86-14
NCRs 6298 AND 6566
10 CFR 50.55(e)

SECOND INTERIM REPORT FOR UNIT 1 AND FIRST INTERIM REPORT FOR UNIT 2

Description of Deficiency

During a walkdown, an NRC inspector noted a solenoid valve was not installed flush on its hanger and that there were missing and/or loose nuts on the solenoid mounting screws. Further investigation by TVA personnel then identified five safety injection system, one reactor coolant system, and two gas waste disposal system solenoid valves with this same type problem.

TVA also determined that the solenoid valves were partially disassembled in order to install them. All thread rods were used in place of bolts which had been removed from the valve body.

Safety Implications

The solenoid valves in question are supplied to TVA as a complete qualified package with supplier-imposed instructions which must be followed to ensure that their application in the plant conforms with qualification tests. Because seismically qualified mounting brackets were removed from the valve body, the valves' four bonnet screws were taken out and threaded rods then used to fasten the valve directly to the support plate, the valves' seismic qualification is violated. Also, the use of the threaded rods as the means to reestablish the valves' pressure boundary (by tightening a locknut and pressing the valve against the support plate forcing the valve end cap against the valve body) violates the valves' functional qualification.

Because of these mounting procedures, there is not adequate assurance that the solenoid valves would function during or after a design basis seismic event. Their safety function is to deenergize upon command in order to close their associated control valves. Five of these solenoid valves serve a containment isolation function and their failure could cause a loss of containment isolation when such isolation is required. The other three valves are involved in boron injection. These three valves would be closed and their failure would not adversely affect plant safety.

Interim Progress

Since TVA's first report on this deficiency for unit 1, site personnel have determined that this problem also pertains to unit 2 and have written nonconformance report (NCR) 6566 on the unit 2 deficiency. TVA has also determined that only ASCO 8316-series solenoid valves which are locally mounted by TVA in seismic category I structures are subject to this problem due to specific valve configuration.

TVA plans to rework all environmentally qualified solenoid valves per manufacturer's instructions. Other category I solenoid valves not requiring environmental qualification will either be reworked per manufacturer's instructions or be submitted to the Office of Engineering (OE) for seismic qualification.

As mentioned in our first interim report on the unit 1 deficiency, TVA has been conducting a generic investigation of the seismic instrument mounting of equipment other than solenoids. This review of other instruments indicates that there are situations where there are inadequate mounting details on design drawings to verify the seismic qualification of the installed unit 1 instrument supports. OE is developing a sampling program to verify adequacy of category I(L) instrument supports. Category I instrument supports, which do not have an approved mounting detail, will be sketched and submitted to OE for qualification.

TVA will provide a final report on this deficiency by May 2, 1986.