

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

October 25, 1983

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WBRD-50-390/83-36
WBRD-50-391/83-36

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 - NONLEAKTIGHT CONTAINMENT ISOLATION
VALVES IN CHILLED WATER SYSTEM - WBRD-50-390/83-36, WBRD-50-391/83-36 - REVISED
FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
P. E. Fredrickson on May 17, 1983 in accordance with 10 CFR 50.55(e) as NCR WBN
NEB 8306. Our first interim report and final report were submitted on June 15
and September 13, 1983, respectively. Enclosed is our revised final report.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

DS Kammer

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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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
NONLEAKTIGHT CONTAINMENT ISOLATION VALVES IN CHILLED WATER SYSTEM
NCR WBN NEB 8306
WBRD-50-390/83-36, WBRD-50-391/83-36
10 CFR 50.55(e)
REVISED FINAL REPORT

Description of Deficiency

Containment isolation valves installed in the chilled water system are not designed to be leaktight so as to allow passage of the Type C air leakrate test (TVA-2C) as specified in 10 CFR 50 Appendix J. The affected valves are (both units):

| | |
|------------|------------|
| FCV-31-305 | FCV-31-326 |
| FCV-31-306 | FCV-31-327 |
| FCV-31-308 | FCV-31-329 |
| FCV-31-309 | FCV-31-330 |

TVA purchases containment isolation valves specified to the industry standard leakrate test for tight shutoff. This test checks for leakage under normal operating conditions utilizing the process fluid at the maximum pressure differential (ΔP) specified for the valves. As part of the containment integrated leakrate test as specified by 10 CFR 50 Appendix J, containment isolation valves are subject to a Type C leakrate test. The Type C test is a test for leakage using air at a 15 lb/in²g ΔP . All previous valves specified and tested per the industry standard test have successfully met the Type C test requirements. Although the affected valves passed the industry standard test, they did not pass, and could not be modified to pass, the Type C test. All of the affected valves were supplied by the same vendor.

Safety Implications

Failure of the affected valves to close leaktight against containment atmosphere during a design basis earthquake (DBE) could result in the uncontrolled release of radioactivity into the auxiliary building atmosphere. This could result in personnel or offsite doses in excess of those allowed by 10 CFR 100 guidelines.

Corrective Action

TVA has issued engineering change notices (ECNs) 3861 and 3864, for units 1 and 2, respectively, to replace the affected valves with other valves which have already passed a Type C air leakrate test. All required drawing revisions will be completed by November 30, 1983. All necessary construction work for unit 1 will be completed by December 31, 1983, and for unit 2 by December 15, 1984.

TVA considers this to be an isolated occurrence since all other containment isolation valves, previously tested, have met the Type C test requirements. TVA will continue to purchase containment isolation valves specified to the industry standard leakrate test for tight shutoff, and will perform the Type C tests as necessary. No further action to prevent recurrence is required.