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

June 2, 1983

WBRD-50-390/83-30
WBRD-50-391/83-30

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 - CONTROL BUILDING ISOLATION DAMPERS LEAKING - WBRD-50-390/83-30, WBRD-50-391/83-30 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector L. Watson on May 4, 1983 in accordance with 10 CFR 50.55(e) as NCR WBN SWP 8323. Enclosed is our 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

L. M. Mills

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
CONTROL BUILDING ISOLATION DAMPERS LEAKING
NCR WBN SWP 8323
WBRD-50-390/83-30, WBRD-50-391/83-30
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

This nonconformance report (NCR) concerns two different conditions. The first concerns isolation dampers 0-FCO-31-3, -4, -36, and -37 on the control building emergency pressurization system. These dampers are required to be low leakage dampers but were found to leak at a higher than acceptable rate. This occurred because the subject dampers were specified on the data sheet as "low leakage" dampers. The contract engineer who wrote the contract interpreted this to mean ANSI-N509 leakage class II which is recommended for noncontaminated air streams. However, the system requirements for these dampers demand virtually bubbletight leakage which translates to a class I leakage rate. Since the design engineer did not indicate class I leakage rate on the damper data sheet as part of the procurement request, the contract engineer did not have specific leakage requirements to put in the procurement document.

The second condition involves fans in the spreading room exhaust system. The logic diagram for the control building ventilation system showed wiring design for a train "A" main control room (MCR) isolation signal to turn off the train "A" spreading room exhaust fan and a train "B" isolation signal to turn off the train "B" spreading room exhaust fan. Therefore, the opposite train fan would be turned on after receiving a low flow signal from the fan turned off even during a MCR isolation mode. The instrumentation and controls logic diagram 47W611-31-2 failed to indicate both trains of the spreading room exhaust fans to turn off upon a MCR isolation signal from either train as required by section 9.4.1 of the FSAR. The assignable cause for this condition is attributed to the inadequate review of the logic diagrams to see that they meet the design criteria requirements.

Safety Implications

The subject dampers are required to be low leakage dampers to maintain MCR isolation during an accident condition. Excessive leakage through these dampers would result in discharge of unfiltered outside air into the habitability zone by use of the control building pressurization fans which are designed to continue to operate upon a control room isolation (CRI) signal.

Failure of the proper fan to turn off would prevent the MCR from maintaining a positive pressure during an accident condition and thereby possibly introduce contaminated air into the habitability zone.

Corrective Action

TVA issued engineering change notice (ECN) 2510 to purchase leaktight butterfly valves on contract 81KJ3-828284 and revise construction drawings to indicate the new valves. These new valves have been received and installed. To prevent recurrence, TVA has formulated a standard damper data sheet and instructed all the nuclear projects to use them in requesting procurement of dampers.

To correct the second condition, ECN 3710 was issued to revise the logic diagrams and other applicable electrical drawings to shut down both trains of the spreading room exhaust fans upon a MCR isolation signal from either train. Applicable field modifications have been completed. To prevent recurrence, TVA has issued engineering procedure 4.25 "Design Review and Interface Coordination for Detailed Construction and Procurement Drawings." Additionally, TVA has initiated a program to train employees on the content of the procedures which affect their work.