TENNESSEE VALLEY AUTHORITY

5N 157B Lookout Place

April 9, 1986 16 AM : 18

WBRD-50-390/86-09
WBRD-50-391/86-08

U.S. Nuclear Regulatory Commission
Region II
Attn: 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 - INCORRECT TUBING CONFIGURATION ON CONTAINMENT ISOLATION VALVE ACTUATORS - WBRD-50-390/86-09, WBRD-50-391/86-08 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector Dave Verrelli on December 10, 1985 in accordance with 10 CFR 50.55(e) as SCRs WBN MEB 8546, MEB 8550, and 6328. Our first interim report was submitted on January 16, 1986. Our second interim report was submitted on February 28, 1986. 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

for 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
1100 Circle 75 Parkway, Suite 1500
Atlanta, Georgia 30339

ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
INCORRECT TUBING CONFIGURATION ON CONTAINMENT ISOLATION VALVE ACTUATORS
WBRD-50-390/86-09, WBRD-50-391/86-08
SCR WBN MEB 8546 AND SCR WBN MEB 8550
AND NCR WBN 6328
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

A condition was identified for Watts Bar Nuclear Plant (WBN) in which containment isolation valves 2-FCV-30-10 and 2-FCV-30-40 do not meet closing time requirements as specified in the WBN FSAR Section 6.2.4. The subject air-operated valves are located in system 30 (ventilation). This condition was documented in nonconforming condition report (NCR) WBN 6328. On valve 2-FCV-30-10, the exhaust air line from the cylinder is tubed to the solenoid. This requires air to exhaust through the solenoid. On valve 2-FCV-30-40, the exhaust air line is excessive in length. As such, the operators are unable to exhaust air from the cylinders and close within the specified time requirement.

Significant condition reports (SCRs) SCR WBN MEB 8546 and SCR WBN MEB 8550 identify that all WBN units 1 and 2 air-operated system 30 containment isolation valves, except 2-FCV-30-10 which does not have a quick exhaust valve installed, have a speed control valve installed in the exhaust port of the quick exhaust valve. Speed control valves are intended to control opening times only, and therefore, should be installed in the supply air line. In the exhaust line, speed control valve adjustments could change or be changed. This could result in a failure of the actuator to close the valve or to meet closing time requirements.

TVA has determined that this deficiency is the result of a combination of failures.

1. TVA's Office of Engineering (OE) failed to require sufficient tubing configuration details on some vendor drawings to support any required field disassembly/reassembly of air operator's supply and exhaust air lines.

2. OE failed to provide sufficient schematic details to reflect the installation of a quick exhaust valve on single- and double-cylinder air operators.

3. OE failed to require that vendor drawings/documents utilized during source inspection accurately reflect the configuration of valves/operators which were inspected and released for shipment.

4. TVA's Office of Construction (OC) failed to request OE clarification to design requirements prior to initiating work activities.

Safety Implications

A failure of affected containment isolation valves to meet closing time requirements during a design basis accident (e.g., a loss of coolant accident) could result in offsite doses in excess of 10 CFR 100 limits. As such, the subject deficiency could adversely affect the safe operation of the plant.

Corrective Action

TVA will add a quick exhaust valve to valve 2-FCV-30-10, and valve 2-FCV-30-40 will be retubed to shorten the exhaust line. Also, speed control valves will be removed from all affected valves which have the speed control valves installed in the exhaust port of the quick exhaust valve. All affected valves will be tested to ensure that opening and closing time requirements will be met.

To prevent recurrence of this deficiency, TVA will revise applicable vendor drawings and TVA standard schematic drawing 47W600-223 to reflect the acceptable tubing configuration with sufficient detail to allow disassembly/reassembly of air operators supply and exhaust lines. The revision to drawing 47W600-223 will also reflect the requirement for a quick exhaust valve for single and double-cylinder-type air operators.

TVA will complete the above-stated corrective actions per engineering change notices (ECNs) 6209 and 5983 for WBN units 1 and 2, respectively. All corrective actions will be completed by initial fuel loading for units 1 and 2, respectively.

TVA will also revise Standard Specification MEB-SS-10.20, section 5.1.3 to ensure that in the future applicable vendor drawings/documents will have adequate tubing configuration details to allow disassembly/reassembly of the air operators' supply and exhaust lines. This revision will also ensure that vendor drawings/documents utilized during source inspections of air-operated valves reflect adequate details to verify that the actual configuration of equipment is consistent with that desired by TVA. MEB-SS-10.20 will be revised by August 1, 1986. In the interim, an errata sheet will be issued and attached to the specification. The errata sheet will specify the additional requirements and will be considered a part of the specification.

TVA will retrain affected OC instrumentation engineers to the requirements of WBN Quality Control Instruction (QCI) 1.13, "Preparation and documentation of field change requests." This retraining will emphasize the importance of obtaining prompt clarification and/or revision, as necessary, to design output documents, and will be completed by April 30, 1986.

TVA has determined that this deficiency is not applicable to Browns Ferry or Sequoyah Nuclear Plants. TVA has issued problem identification reports (PIRs) WBN MEB 8634, WBN MEB 8635, and BLN MEB 8517 to track the completion of an evaluation of this problem for other valves in other systems at WBN and at Bellefonte Nulcear Plant. Any similar deficiencies which are identified will be documented and dispositioned separately.