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

September 21, 1983

WBRD-50-390/83-16
WBRD-50-391/83-15

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 - OFFSET LEAD-IN GUIDES ON WACHTER SPENT FUEL CELLS - WBRD-50-390/83-16, WBRD-50-391/83-15 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector L. Watson on March 18, 1983 in accordance with 10 CFR 50.55(e) as NCR W-115-P. Interim reports were submitted on April 15 and August 4, 1983. Enclosed is our final report. We consider 10 CFR Part 21 applicable to this deficiency.

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 Kammer

for L. M. Mills, Manager
Nuclear Licensing

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

Records Center
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
OFFSET LEAD-IN GUIDES ON WACHTER SPENT FUEL CELLS
NCR W-115-P
WBRD-50-390/83-16, WBRD-50-391/83-15
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

The bottom edge of numerous lead-in guides and the top inner edge of the fuel cell assembly do not meet in a vertical plane. This misalignment could interfere with the entry or exit of a fuel assembly. This condition violates section 3.0.4 of Wachter Associates, Inc. Proposal of the Watts Bar Nuclear Plant High Density Spent Fuel Racks, (dated July 12, 1977) and TVA Specification 3344, both of which are part of TVA's contract with Wachter. Also, some cells have been found to be smaller than the approved contractor's drawings.

The assignable cause of this deficiency was an apparent failure by the manufacturer to maintain acceptable manufacturing tolerances.

Safety Implications

The lack of proper restraint on the lead-in guides can result in damage to the grid straps. These straps aid coolant flow in the high heat flux regions of the fuel assemblies and are also used to guide fuel assemblies past projecting surfaces during handling. This condition could result in localized hot spots in the fuel pool or potential damage to fuel assemblies which are planned for reinsertion into the core, thus resulting in a condition that could be adverse to the safe operation of the plant.

Corrective Action

TVA's Division of Engineering Design (EN DES) has issued engineering change notice (ECN) 4043 to revise the Wachter Associates, Incorporated, drawings and produce TVA drawings to reflect an acceptable configuration for the cell walls and lead-in guides. The lead-in guides will be repositioned to an acceptable configuration or the cell walls will be expanded or the lead-in guides compressed, as applicable, for each fuel cell. The inner edges of the cell walls and/or the lead-in guides will be ground until no overhanging, sharp edges exist, as required. All lead-in guide adapters are to be removed and permanent lead-in guides will be welded to the cell walls at the position of the present adapters. All drawing revisions and new TVA drawings have been issued. All necessary construction work will be completed by February 15, 1984.

Although some cells were found to be smaller than detailed on the approved manufacturer's drawings, each cell passed a minimum dimensional gauge as required by the fuel supplier, Westinghouse. Therefore, no corrective action is required to enlarge the cells.

Wachter Associates, Incorporated, is no longer in business. Therefore, no further action is necessary to prevent recurrence of this deficiency.