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TENNESSEE VALLEY AUTHORITY

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WBRD-50-390/86-18

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 (WBN) - UNIT 1 - INTERNAL WIRING VERIFICATION ON
MODIFIED LOCAL INSTRUMENT PANELS - WBRD-50-390/86-18 - FINAL REPORT**

The subject deficiency was initially reported to NRC-OIE II Inspector Art Johnson on December 23, 1985 in accordance with 10 CFR 50.55(e) as NCR WBN 6433. Interim reports were submitted on January 28 and March 19, 1986. Enclosed is our final report.

If there are any questions, please get in touch with J. A. McDonald at (615) 365-8527.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

R. L. Gridley
R. L. Gridley, Director
Nuclear Safety and Licensing

Enclosure

cc (Enclosure):

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

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ENCLOSURE
WATTS BAR NUCLEAR PLANT UNIT 1
INTERNAL WIRING VERIFICATION ON MODIFIED LOCAL INSTRUMENT PANELS
WBRD-50-390/86-18
NCR WBN 6433
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

There is no evidence that required internal wiring verification was performed for field-mounted instruments on local panels which have been modified onsite. When such instruments are modified, wiring on the floor-mounted local panels must be field verified to ensure that wire continuity exists and that the appropriate wire, qualified for its environment, has been utilized. Note that instruments received onsite from the vendor are not required to have an internal wire check by TVA personnel.

This resulted from failure on the part of the responsible engineers to follow the procedure to ensure that internal wiring verification was performed. The requirement for this verification was included in the Watts Bar Nuclear Plant (WBN) Quality Control Procedure (QCP)-3.06-7 "Inspection of Electrical and Instrumentation Equipment Installation." This part of the procedure was rarely needed since the verification was only required for modified instruments. Infrequent demand for this portion of the procedure resulted in oversights in both training for and implementation of this requirement.

Safety Implications

Nonqualified or faulty wiring installed on the local panels could fail causing the involved safety-related instrument loops to become open, shorted, or inaccurate. This deficiency could result in the failure of instruments to perform their intended design functions, consequently resulting in a condition which could adversely affect the safe operations of the plant.

Corrective Action

Since this equipment has been transferred from construction to operations, TVA will perform a verification of all unit 1 modified field-mounted instruments per the Modifications and Additions Instruction (MAI)-5 to ensure that suitable qualified wiring has been used. In the event the internal wiring cannot be verified, the instruments will be rewired, appropriately inspected, and documented in accordance with MAI-5 before fuel load of unit 1. This will provide the necessary assurance that such wires are qualified to perform their intended design function and provide the necessary quality assurance documentation. Use of MAI-5 is sufficient to prevent recurrence of this deficiency for unit 1.

For unit 2, TVA has determined that WBN QCP-3.06-2, "Internal Wiring Verification" is more appropriate to specify the requirements for the verification for modified instruments. WBN-QCP-3.06-2 requires that a verification of internal wiring be performed as part of the inspection requirements for field modifications. The internal wiring verification requirement has been deleted from WBN QCP-3.06-7 and the requirement to use WBN QCP-3.06-2 has been entered into the Records Accountability Program (RAP) for all modified instruments mounted on local panels. Affected personnel have been trained in the requirements of WBN QCP-3.06-2. These actions will prevent this deficiency from occurring on unit 2.