

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

July 17, 1981

OFFICIAL COPY

WBRD-50-390/81-20

WBRD-50-391/81-19

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303



Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - ELECTRICAL SEPARATION FIELD AUDIT -
WBRD-50-390/81-20, WBRD-50-391/81-19 - THIRD INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector R. W. Wright on February 5, 1981 in accordance with 10 CFR 50.55(e) as NCR W-31-P. Interim reports were submitted on March 9 and April 21, 1981. Enclosed is our third interim report. We expect to provide additional information by November 25, 1981.

If you have any questions, please get in touch with D. L. Lambert at
PTS 857-2581.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

A handwritten signature in cursive script that reads "L. M. Mills".

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure

cc: Mr. Victor Stello, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
ELECTRICAL SEPARATION FIELD AUDIT - NCR W-31-P
WBRD-50-390-81-20, WBRD-50-391/81-19
THIRD INTERIM REPORT

Description of Deficiency

An audit was conducted in response to an NRC letter from A. Schwencer to H. G. Parris dated May 2, 1980 (NEB 800529 252), which requested TVA to perform an audit of installed electrical equipment and systems to determine conformance with electrical separation criteria. The audit was performed using the criteria stated in chapters 7 and 8 of the Watts Bar Nuclear Plant (WBN) Final Safety Analysis Report (FSAR) and the criteria stated in Regulatory Guide (R.G.) 1.75 with those exceptions listed in the response to NRC question #0.25. While TVA noted in the response that R.G. 1.75 is not applicable to WBN, it was stated that the design basically meets R.G. 1.75 with the stated exceptions. As a result of this statement, TVA considers these requirements applicable to WBN and within the scope of the audit. In addition, documents used as references for interpretation and clarification of the above criteria were other chapters of the FSAR that pertain to the specific systems inspected, various IEEE and ANSI Standards that are referenced in the FSAR; the WBN Design Criteria WB-DC-30-04, "Design Criteria for Separation of Electrical Equipment and Wiring"; and the responses in the FSAR to questions from the NRC which pertain to the separation and identification criteria.

The audit was divided into six inspection areas. Each area was inspected to verify that installed equipment adhered to the stated criteria. The audit did not cover all equipment at Watts Bar, but rather sampled approximately 10 percent of the installed equipment to identify any generic deficiencies. The six areas are:

1. Equipment Identification and Separation
2. Conduit and Cable Tray Identification
3. Cable Identification and Route Verification
4. Equipment Internal Wiring and Identification
5. Conduit and Cable Tray Separation
6. System Audit for Identification and Separation

Interim Progress

TVA's Division of Engineering Design (EN DES) will revise the appropriate conduit and grounding drawings to add a note specifying that, where possible, a minimum of 1 inch shall be maintained between exposed redundant Class IE cable raceways. If the separation is not attainable, a barrier consisting of a 1/2-inch minimum thickness of Maranite-36 (or its equivalent) will be used between the raceways. In addition, cable trays must be installed with solid tray covers or bottoms on the surfaces adjacent to the conduits.

In instances where it is not possible to conform to the separation requirements, a documented case-by-case analysis will be made to ensure that redundant Class IE circuits are not degraded below an acceptable level.

In addition, TVA will conduct a reinspection of the conduit and cable with emphasis on physical separation and identification. Watts Bar Nuclear Plant (WBNP) Quality Control Procedure (QCP) 3.6-Test 99 has been revised to strengthen the existing inspection procedures for cable separation and internal wiring. Additional WBNP QCP's (3.3, 3.4, and 3.5) will also be revised to strengthen their inspection procedures. A new WBNP-QCP, 3.16, is scheduled to be issued by August 15, 1981, which will ensure that inspection procedures will provide conformance to separation criteria related to the 6.9 kV shutdown boards.