

TENNESSEE VALLEY AUTHORITY

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JUL 16 1987

WBRD-50-390/87-08

WBRD-50-391/87-08

10 CFR 50.55(e)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

WATTS BAR NUCLEAR PLANT (WBN) - UNITS 1 AND 2 - IMPROPER FABRICATION,
INSPECTION, AND DOCUMENTATION OF WALL-MOUNTED INSTRUMENT PANELS -
WBRD-50-390/87-08, WBRD-50-391/87-08 - SECOND INTERIM REPORT

The subject deficiency was initially reported to NRC-Region II Inspector Ken Barr in accordance with 10 CFR 50.55(e) as SCRs WBN 6738-S and WBN 6713-S for units 1 and 2, respectively. Subsequent to the initial notification, SCR WBN 6738-S was replaced by SCR W-559-P-S. Our first interim report was submitted on March 23, 1987. Enclosed is our second interim report. A final report on this item will be submitted to NRC on or about January 18, 1988.

If there are any questions, please telephone R. D. Schulz at (615) 365-8527.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



R. Gridley, Director
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Enclosure

cc: See page 2

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U.S. Nuclear Regulatory Commission

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ENCLOSURE
IMPROPER FABRICATION, INSPECTION, AND DOCUMENTATION
OF WALL-MOUNTED INSTRUMENT PANELS
WBRD-50-390/87-08 AND WBRD-50-391/87-08
SCRs W-559-P AND WBN 6713-S
10 CFR 50.55(e)
SECOND INTERIM REPORT

DESCRIPTION OF DEFICIENCY

The seismic adequacy of approximately 175 site-fabricated local instrument panels (122-unit 1, 53-unit 2) in several safety-related systems at Watts Bar Nuclear Plant (WBN) has not been verified for lack of documentation of the fabricated configuration. Weld joints were shown on the design drawings to require full penetration single bevel welds. However, these welds were found to generically lack complete penetration and were not beveled. In addition, TVA did not perform adequate structural (configuration/material verification) inspections of the instrument panels which, in conjunction with the identified weld deficiency, renders the overall adequacy of the panels questionable.

The apparent root cause of the deficiency is inattention to detail by welders and weld inspectors. Welders and inspectors performed welds and inspections based on the normally expected weld joint for this application (partial penetration butt joint) as would be found on other similar structural features.

TVA considers this deficiency a lack of control in the area of welding and weld inspection for the fabrication of wall-mounted instrument panels.

SAFETY IMPLICATIONS

Because of the lack of documentation, the seismic qualification of these panels is indeterminate. If the panels fail to withstand a safe shutdown earthquake random instrument failures could result, including misleading indication and protection channel failures, as well as possible damage to adjacent safety-related components. This could adversely affect the safe operation and/or shutdown of the plant.

INTERIM PROGRESS

TVA will investigate the extent of this deficiency for other similarly-fabricated components as part of the ongoing Weld Evaluation Project. The final report for this deficiency will address the generic aspects of this deficiency based on the results of the Weld Evaluation Project final report.

For the wall-mounted instrument panels, the following actions will prevent recurrence of this deficiency:

- Engineering requirement ER-WBN-EER-001, Revision 2, was issued to establish the minimum engineering and design requirements for the installation, modification, maintenance, and inspection of instrument systems. TVA will develop or revise procedures for units 1 and 2 to address the fabrication, installation, and inspection of panels and the mounting of instruments to these panels. These procedures will incorporate the provisions of ER-WBN-EEB-001. For unit 1, the procedure will be issued by August 26, 1987, and for unit 2, procedures will be issued by September 15, 1987. These actions will clarify the requirements and provide an overall enhancement of the program for fabrication, inspection, and documentation of the panels.
- Training in the new/revised procedures will be provided to appropriate personnel with an emphasis on lessons learned from this deficiency by September 15, 1987 for unit 1, and by October 15, 1987 for unit 2.

Stopwork order DNQA-WBN-87-04 which addresses all physical construction, fabrication, and installation activities on wall mounted instrument panels will remain in effect until these actions to prevent recurrence have been completed.

TVA was in the process of reworking these panels for unit 2 before issuance of the stopwork order. After the stopwork order is lifted, rework, inspection, and documentation will be performed in accordance with appropriate procedures to ensure that structural configuration, including welding, is in accordance with design drawings. These actions will be completed by fuel load for each unit.

A final report will be submitted to NRC on or about January 18, 1988.