

TENNESSEE VALLEY AUTHORITY

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MAR 30 1989

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

Gentlemen:

In the Matter of the Application of)
Tennessee Valley Authority)

Docket Nos. 50-390
50-391

WATTS BAR NUCLEAR PLANT (WBN) - NRC INSPECTION REPORT NOS. 50-390/87-07 AND
50-391/87-07 - REPLY TO A VIOLATION

Enclosed is our final response to G. G. Zech's letter dated June 5, 1987, to
S. A. White, which transmitted the subject inspection report, citing
activities at WBN that appear to be in violation of NRC regulations.
Enclosure 1 is our response to the notice of violation 50-390/87-07-01.
Because of the current emphasis on WBN unit 1 completion, we will submit our
response on the corrective actions required for unit 2, violation
50-391/87-07-01, after a schedule for unit 2 activities is established.
Establishment of this schedule has an internal tracking date of
February 29, 1992.

TVA submitted a response admitting the violation on July 6, 1987, followed by
a supplemental response on April 5, 1988, and interim replies on June 13 and
August 23, 1988. Enclosure 1 is our final report on the subject inspection
for unit 1. Enclosure 2 contains a list of commitments made by TVA in this
response.

If there are any questions, please telephone D. E. McCloud at (615) 365-8650.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

R. Gridley
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Regulatory Affairs

Enclosure
cc: See page 2

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ENCLOSURE 1

WATTS BAR NUCLEAR PLANT UNIT 1
RESPONSE TO NUCLEAR REGULATORY COMMISSION'S (NRC) LETTER
FROM GARY G. ZECH TO S. A. WHITE DATED JUNE 5, 1987
REPORT NO. 50-390/87-07-01

This report responds to the notice of violation described in NRC's inspection report referenced above. This is TVA's final report on this notice of violation for unit 1.

Summary of Violation

10 CFR 50, Appendix B, Criterion V, as implemented by TVA's Quality Assurance (QA) Topical Report, TVA-TR75-1A, revision 8, paragraph 17.1.5, "Instruction, Procedures, and Drawings," requires that activities affecting quality shall be accomplished in accordance with instructions, procedures, or drawings. Drawing 47A055-205, "Mechanical HVAC Category I Support Typ. Support 205," specifies heating, ventilating, and air conditioning (HVAC) support dimensional requirements necessary to meet the design bases.

Contrary to the above, HVAC supports 0031-DW930-044-1092 and -1093 were installed and final accepted by quality control (QC) to an approved drawing (47A055-205), yet both supports had configuration conditions that were not in compliance with the as-constructed drawing, as follows:

1. Drawing 47A055-205 requires the duct be fastened to the support on 6-inch centers on three sides using 3/16-inch blind rivets. On both supports, two rivets were missing on the front view. The remaining installed rivets exceeded the 6-inch dimension by approximately 3 inches.
2. Drawing 47A055-205 requires a 24-inch maximum dimension from the block wall to the outer supports beam. The actual dimension measured greater than 39 inches on both supports.
3. On Support 1093, a 2-inch tube steel support was welded to the top of a WT6 X 15.5 beam. This was not reflected on drawing 47A055-205.

This is a severity Level IV violation (supplement II) and applies to units 1 and 2.

1. Admission or Denial of Alleged Violation

TVA/WBN admits the violation occurred as stated.

2. Reason for the Violation

The Institute of Nuclear Power Operations (INPO) performed a construction project evaluation in 1985 and observed the improper control of the installation of HVAC support rivets. As a result of the INPO findings, TVA issued Nonconformance Report (NCR) 6174 in 1985, which documents the spacing tolerance for rivets implemented by Nuclear Construction (NC).

Nuclear Engineering (NE) evaluated NCR 6174 and determined that the spacing tolerances implemented by NC were acceptable and the existing spacing did not require rework, as there was no adverse affect on the safe design or operation of the system. A tolerance was then issued by NE to provide criteria for future installations. The two supports in question were installed and inspected before 1985, and the rivet spacing has been found to be acceptable based on the requirements stipulated in NCR 6174 which were used by NC and approved by NE. Three of the four unused rivet holes are located on the top rib of the beam, while the drawing specifies rivets on only the bottom rib. The other unused hole is in a portion of the beam which is not adjacent to the duct. While this may explain why rivets are not installed in these holes, the holes themselves are not authorized by the drawings.

TVA has reviewed the as-built versus the as-constructed member length issue (item 2 in description of violation) and the unused rivet holes, and determined that NC failed to request a variance from NE. Quality control inspectors failed to note the lack of a member length variance and the unused rivet holes. As a result, these issues were not detected evaluated, and documented.

The tube steel support attached to support No. 1093 is a conduit support and its identifier tag is missing. NE has determined, by field walkdown, that this support is constructed to a varied typical and that NC should have requested a variance. However, since the support could not be identified, it could not be determined if NC requested a variance. Inadequate documentation and identification of conduit supports have previously been identified as Significant Condition Report (SCR) 6463-S.

3. Corrective Steps Which Have Been Taken and Results Achieved

TVA initiated two Condition Adverse to Quality Reports (CAQRs), WBN 870316 and WBP 870308, to document these deficiencies and, as corrective action to these CAQRs, conducted a statistical inspection of HVAC supports. Of the 42 hangers inspected, 16 failed to meet the acceptance criteria. This rejection rate exceeded the preestablished allowed limits, and CAQR WBN 870316 was revised to include the deficiencies discovered during the sample reinspection effort.

Corrective action program (CAP) plans were developed by TVA for deficiencies associated with HVAC systems and conduit supports. These have been reviewed by the Watts Bar Program Team and submitted to NRC. The CAP plan for HVAC duct and duct supports and the CAP plan for conduit supports were both submitted to NRC on November 18, 1988. As committed in previous correspondence, dated August 23, 1988, this violation response conveys the program and schedule for implementing the CAP plans.

The objective of the CAP plan for HVAC duct and duct supports is to assure that the WBN unit 1 safety-related (category I and I[[L]]) HVAC duct and duct supports are structurally adequate and in compliance with licensing requirements and design criteria. To accomplish this, TVA will:

- complete and document the design basis for ducts/supports;
- update the design output documents;
- revise construction, maintenance, and QA procedures to incorporate design output requirements; and
- develop and implement a critical case evaluation of existing installations with corrective actions as appropriate. The number of critical cases to be evaluated will depend on the assessment of walkthrough data.

These statements are provided as summaries of the CAP plans for HVAC ducts and supports and are discussed in more detail in section 4.1 of the CAP plan.

The conduit support which the inspector observed attached to the HVAC support was determined to be a varied typical conduit support for which the existence of a support variance sheet could not be ascertained. The CAP plan for conduit supports discusses TVA's approach to ensuring the structural adequacy of safety-related (category I and I[[L]]) conduit and conduit supports. The issue of conduit supports is also being addressed by Significant Condition Report (SCR) WBN 6463-S which was reported under 10 CFR 50.55(e). A report is due to be submitted (WBRD-50-390/86-14 and 391/87-18) on April 24, 1989. Because TVA is addressing the resolution of conduit support discrepancies in another docketed submittal (the aforementioned 10 CFR 50.55(e) report), TVA considers the resolution of conduit issues to be separate from this violation.

4. Corrective Steps Which Will Be Taken to Avoid Further Violation

Recurrence control is discussed in section 4.2 of the CAP plan. The actions involving issuance of the Engineering Requirements (ER) Specification and revision of implementing procedures, with training thereto, are the pertinent recurrence control actions relating to this violation. These actions, which include training of construction, maintenance, and QA personnel, will provide increased attention to installation tolerances during erection, maintenance, and QC inspection and will help to ensure compliance with configuration requirements.

5. Date of Full Compliance

TVA will complete the aforementioned actions and all associated field modifications by May 21, 1990.

Attachments 2 and 3 of the referenced CAP plans provide a flowchart and fragnet, respectively, for the actions associated with that CAP plan.

ENCLOSURE 2

LIST OF COMMITMENTS

1. Provide a final response to NRC on violation 391/87-07-01.
2. Complete field modifications required by the heating, ventilating, and air conditioning (HVAC) duct and duct support corrective action program (CAP) plan.