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MAR 06 1987

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

Attention: Dr. J. Nelson Grace

WATTS BAR NUCLEAR PLANT (WBN) - UNITS 1 AND 2 - REGION II INSPECTION REPORT 50-390/86-25 AND 391/86-25 - RESPONSE TO VIOLATIONS

Enclosed is our response to G. G. Zech's letter dated February 4, 1987, to S. A. White which transmitted Inspection Report Nos. 50-390/86-25 and 50-391/86-25, citing activities at WBN which appeared to be in violation of NRC regulations. Enclosed is our response to violations 390, 391/86-25-01; 390/86-25-07 and 391/86-25-05.

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

To the best of my knowledge, I declare the statements contained herein are complete and true.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

J. A. Domer

J. A. Domer, Assistant Director
Nuclear Safety and Licensing

Enclosure
cc: See page 2

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cc (Enclosure):
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ENCLOSURE
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
RESPONSE TO NRC REGION II LETTER
FROM GARY G. ZECH TO S. A. WHITE DATED FEBRUARY 4, 1987
REFERENCE: REPORT NOS. 50-390/86-25 AND 391/86-25

This report responds to the notice of violations described in enclosure 1 of the NRC Region II inspection report referenced above. This is our final report on these items of noncompliance.

Violation 390/86-25-07; 391/86-25-05

10 CFR 50, Appendix B, Criterion V, as implemented by TVA's QA Topical Report, TVA-TR-75-1A, revision 8, paragraph 17.1.16 and 17.2.16, "Adverse Conditions and Corrective Actions," require that conditions adverse to quality be promptly corrected and reported to the appropriate levels of management.

Contrary to the above, ineffective corrective action was taken on NCRs 6713 and 6738 in that major rework (which is significant) was performed on instrument racks to restore them to compliance with the drawing, while the NCRs were evaluated as nonsignificant.

This is a Severity Level IV Violation (Supplement II) and applies to units 1 and 2.

1. Admission or Denial of the Alleged Violation (or Finding)

   TVA admits the violation. The two nonconforming condition reports (NCRs), 6713 and 6738, initially were determined to be nonsignificant and were not upgraded to significant after an investigation determined that extensive corrective action was required. However, the classification of the NCRs was not appropriately upgraded to significant based upon these investigation results.

2. Reasons For the Violations (or Findings) if Admitted (1)

   TVA has committed to NRC to perform NCR significance determinations within eight days of the initiation of the NCR. To improve conformance with this commitment, Quality Assurance Procedure (QAP)-16.1, Revision 6, was revised to allow management to take action rather than automatically escalate an NCR to significant. This management action resulted in some significance determinations being performed before the corrective action was ascertained. Consequently, the designated quality reviewer determined the significance of NCRs 6713 and 6738 before all actions to determine the extent of corrective action required had been taken. Originally, the NCRs appeared to represent a documentation problem. Later, as part of the corrective action investigation, an informal walkdown was performed by the Division of Nuclear Construction personnel for general weld appearance, and 11 panels (100 percent of the sample) were shown to have unacceptable weld penetration. When the corrective action was added to NCR 6738, the significance of the NCR was not reconsidered by either the organization responsible for solving the problem (Modifications Branch) or the designated quality reviewer.

The line organization who determined the corrective action was not accustomed to evaluating conditions for significance; therefore, there was not a sensitivity to the need to upgrade or resubmit these NCRs to the designated quality reviewer. Further, governing procedures did not require a second significance review.

3. Corrective Steps Which Have Been Taken and Results Achieved

a. NCRs 6713 has been revised and upgraded to significant. NCR 6738 has been replaced with NCR W-559-P. Both NCRs 6713 and 6738 were reported under the 50.55(e) requirements on February 19, 1987. Resultant reviews, including root cause analysis, action required to prevent recurrence, and generic implications are currently being performed.

b. A memorandum was issued by the Site Quality Manager regarding the importance of the NCR review process. It emphasized the importance of examining the NCR for hardware-related items. An interface has been established between Quality Control (QC) and the Conditions Adverse to Quality (CAQ) Unit, which will provide for a more effective exchange of information concerning the review of records and the requirement for hardware inspections. As a result, a broader view of the nonconforming condition will be seen and the chances lessened for this condition happening again.

4. Corrective Steps Which Will Be Taken To Avoid Further Violations (or Findings)

a. TVA's new conditions adverse to quality reporting (CAQR) program, which has requirements for WBN units 1 and 2, defined in the Nuclear Quality Assurance Manual (NQAM), Part I, Section 2.1.6, Administrative Instruction (AI) 2.8.5, and Construction Engineering Procedure (CEP) 1.02, which will provide for determination of significance by the same organization establishing the corrective action plan. Also, it will require reevaluation of significance determination after inspections are performed or after the corrective action has been determined or revised. In fact, significance may be elevated any time it is warranted by any WBN organization.

b. All WBN site generated NCRs from September 3, 1985 (issue date of QAP-16.1, R7, which allowed the significance determination to be made before establishing corrective action), to March 30, 1987, which have significance determination dates preceding the proposed corrective action date will be reviewed. This review will determine if the corrective action investigation added information which indicates that a nonsignificant NCR should be upgraded to significant. Any necessary upgrading will be completed before fuel load of the respective unit.

5. Date When Full Compliance Will Be Achieved

The CAQR program identified above will be implemented by March 30, 1987. Both units will be in full compliance before their fuel loads.

Violation 390; 391/86-25-01

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, "Instructions, Procedures, and Drawings," requires that activities affecting quality shall be accomplished in accordance with instructions, procedures, or drawings. Drawing 47W600-0-4 requires an 18-inch separation between safety train A and train B instrument lines.

Contrary to the above, as of November 24, 1986, instrument lines to pressure switches PS-3-121A, PS-3-125B, and PS-3-125D on the steam driven auxiliary feedwater suction line were installed in both units 1 and 2, such that they did not meet the 18-inch separation requirement.

This is a Severity Level IV Violation (Supplement II) and applies to units 1 and 2.

1. Admission or Denial of the Alleged Violation

TVA admits the violation.

2. Reason for the Violation if Admitted

The instrument sensing lines to turbine driven auxiliary feedwater pump (TDAFWP) pressure switches PS-3-121A, PS-3-125B, PS-3-121D, and PS-3-125D, which measure pump suction pressure, are separated by less than the required 18-inch separation criteria (i.e., in two cases for each WBN unit, one line out of the three lines which make up train A did not meet the separation criteria from one line of the three lines which make up train B).

Note 6a of the routing and separation instructions for drawing 47W600-0-4, revision 25, which was in effect during the field routing and inspection of the current configuration, states that "instrument lines from train A instruments shall be physically separated from train B instrument lines as far as practicable and at all times by a minimum distance of 18 inches."

The violation occurred because drawing requirements were not adequately considered when the lines were originally routed by the Division of Nuclear Construction (DNC). General note No. 14, drawing 47W600-0-4, that governs instrument line installation states, "Where multiple safety signals originate from the same point thereby requiring joints in the line and also where they originate from connection points which are less than 18 inches apart, the 18-inch minimum separation distance is not required. For these special cases, the lines should have maximum separation and the minimum distance be obtained as soon as possible." This note allowed DNC personnel to make design decisions when instrument lines of two trains come from a common source point. In this case, these personnel did not make the correct decision. TVA considers that a contributing factor to this field routing deficiency was the lack of clarity of this note.

3. Corrective Steps Which Have Been Taken and Results Achieved

Nonconformance report NCR W-417-P, revision 1, initiated August 8, 1986, was written to address the separation of TDAFWP sense lines for unit 1. This NCR has been dispositioned, recommending that the lines are acceptable in their present configuration.

A DNE calculation, which is on file at WBN, was performed to support the disposition of this NCR and concludes that the present unit 1 routing of the instrument lines is acceptable to use as-is. This disposition is based on the fact that the existing configuration of these sense lines allows sufficient separation to ensure that both trains will not fail; because, normal activities in the area cannot cause a two-train failure. High and moderate energy jet streams, missiles and pipe whip will not cause a two-train failure. Fire effects and damage from falling objects would not cause failure of both trains.

Although it is not the basis for this calculation, a system justification also exists. If both trains failed, the Auxiliary Feedwater System would switch from the condensate storage tank to emergency raw cooling water, as designed, and the engineered safeguard function would not be compromised.

In order to provide a clear, standardized, and readily implementable approach, which is based upon design criteria, and which eliminates multiple requirements which may exist in various documents, TVA has taken the following actions.

DNE has issued Design Criteria WB-DC-30-16, "Instrument Sense Lines Slope/Separations," and an implementing engineering requirement, ER-WBN-EEB-001, "Instrument and Instrument Line Installation and Inspection," under the scope of ECN-6772. Separation requirements are specified in section 3.7 of ER-WBN-EEB-001 and these are based on the design criteria in WB-DC-30-16. Also, the 47W600 drawing series were revised per ECN 6772 to inactivate general notes that provided requirements now controlled by ER-WBN-EEB-001.

Section 4.5 of this new engineering requirement, ER-WBN-EEB-001, requires that "all field routed instrument lines. . . within the pressure boundary of, and including, the instrument lines which service devices designated as part of a train and/or protection set shall be inspected and documented by DNQA to ensure adherence to the requirements of section 3.7 (of this specification)." Section 3.7 states that all lines must be 18 inches apart, and that any deviation from this requirement will be approved by an "Engineering Variance." To write a variance, Electrical Engineering Branch (EEB) personnel are required to walk down the installation before granting the variance. A variance to ER-WBN-EEB-001 to accept the as-installed configuration of the TDAFWP sense lines for WBN unit 1 is being issued.

Instrument line separation requirements are now clearly specified in ER-WBN-EEB-001 for all types of instrument routing. Instrument lines installed after January 28, 1987, are required to be installed and inspected according to this specification.

4. Corrective Steps Which Will Be Taken To Avoid Further Violations

Instrument lines for both units which serve instruments which perform reactor trip actuation, engineered safeguards feature actuation, postaccident monitoring, automatic actuation of features required to perform a primary safety function will be reinspected, reworked as needed and redocumented in accordance with the new installation criteria documents.

Unit 2 TDAFWP sensing lines will be rerouted before unit 2 fuel load due to an existing program for functional enhancements (i.e., in this case slope). ECN 5945 addresses this change.

5. Date When Full Compliance Will Be Achieved

Full compliance will be achieved before fuel load for each unit.