

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

September 21, 1981 SEP 23 P 2: 31

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 - OIE INSPECTION REPORT
50-390/81-03 AND 50-391/81-03 - ADDITIONAL INFORMATION

The subject inspection report dated March 14, 1981 cited TVA for violation of NRC requirements. The enclosed information is provided in response to the subject inspection report and to the NRC's request for information dated July 27, 1981 based on review of TVA's first interim report dated June 11, 1981. The submittal date of this report was discussed with R. Lewis on September 18, 1981.

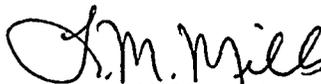
This is a final response to violations 81-03-01, 81-03-03, and 81-03-09. Violation 81-03-02 requires input from Westinghouse, and a final response will be submitted November 19, 1981.

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

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY



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
OIE INSPECTION REPORTS 50-390/81-03 AND 50-391/81-03
ADDITIONAL INFORMATION

Violation 390,391/81-03-01

10CFR50, Appendix B, Criterion II, requires that the quality assurance program provide control over activities affecting the safety functions of components. The accepted QA program, Final Safety Analysis Report (FSAR) section 17.1A.2.1, states that the program provides control over activities affecting quality. The program applies to the components identified in the Safety Analysis Report to an extent consistent with importance to safety. Additionally, FSAR Table 3.2-2a identifies the essential raw cooling water (ERCW) pump as safety related.

Contrary to the above, as of March 18, 1981, the quality assurance program did not provide control over activities affecting quality in that the design, construction, and testing of the essential raw cooling water pump motor cooler's freezing protection was not in the program.

This is a Severity Level IV Violation (Supplement II.D.1).

Admission of the Alleged Violation

TVA admits the violation occurred as stated.

Reasons for Violation

The reason the ERCW pump motor cooler's freeze protection (heat tracing) was deleted from the QA program is that TVA's system evaluation assumed that the number of ERCW pumps required for safe shutdown would normally be operating in both Train A and Train B, thereby suppressing the potential for freezing before a Design Basis Event (DBE) and assuring their availability during a DBE. However, this assumption was erroneous since the system operating instructions do not ensure that the required pumps will be normally running; therefore, the potential for freezing before the DBE, and probable motor bearing failure if such pumps are subsequently started, cannot be discounted.

Corrective Steps Taken and Results Achieved

The small diameter motor bearing cooling lines are to be rerouted in such a way to make them self-draining. These carbon steel lines are currently being replaced with stainless steel per Engineering Change Notice (ECN) 2756. The self-draining feature will be incorporated with the material replacement effort. These design changes will eliminate — the consideration of freezing for these lines and, therefore, remove the QA requirements for heat tracing them. In addition, we plan to investigate the applicability of the non-1E heat tracing problem identified to other systems and plants.

Corrective Steps to Avoid Further Noncompliance

In the future, TVA will provide a requirement in Mechanical Design Guide M6.3.3 to check the effects of freezing ambient conditions on ERCW pump availability. If additional measures are required for other systems, they will be defined in WBRD-50-390/81-41, WBRD-50-391/81-40 (NCR WBNMEB8104) reports.

Date When Full Compliance Will Be Achieved

Full compliance will be accomplished when the redesign is implemented. Verification of the implementation of the redesign and the results of our investigation of the applicability of the problem to other systems and plants will be handled through reports on WBRD-50-390/81-41, WBRD-50-391/81-40 (NCR WBNMEB8104), which deals with ERCW heat tracing. The next report on WBRD-50-390/81-41, WBRD-50-391/81-40 (NCR WBNMEB8104) will be supplied to the NRC by November 3, 1981.

Violation 390,391/81-03-02

10CFR50, Appendix B, Criterion V, requires activities affecting quality to be accomplished in accordance with instructions. The accepted QA program, FSAR Section 17.1A.5, states that assurance is provided that activities are accomplished in accordance with these instructions.

1. Westinghouse Field Change Notice (FCN) WAT 10529 and WBT 10521, Upper Head Injection Valve Modifications, required that the valve downstream disc have weld metal added to correct for body seat metal removal. The FCN's also required the work to be performed under the direction and supervision of an Anchor/Darling representative.

Contrary to the above, as of March 18, 1981, downstream valve discs did not have weld metal added in accordance with the FCN's. Also, the assigned Anchor/Darling representative did not direct and supervise the valve seat modifications for six of the eight valves.

2. WBNP-QCP-1.6, Section 6.6.2, required a responsible engineer during receipt inspection to ensure that all required records accompanying or preceding material to the project were complete and comply with contractual requirements.

Contrary to the above, as of March 18, 1981, repair, inspection, and testing records completed as a result of FCN's WAT 10529 and WBT 10521, were not reviewed to ensure they complied with contractual requirements.

3. FCN WBT 10521 required a Westinghouse Quality Control release prior to shipment of the reworked valves from Anchor/Darling.

Contrary to the above, as of March 18, 1981, a Quality Control release was not provided on the reworked valves.

This is a Severity Level V Violation (Supplement II.E). Items similar to B.2 have been brought to your attention as items A.1 and A.4 in our letter of June 20, 1980, as items A, B, C, D, and F.2 in our letter of August 14, 1980, and as items A.2, A.3, and B.1 in our letter of October 9, 1980.

Admission or Denial of the Alleged Violation

TVA admits the violation occurred as stated.

Response for Item 1Interim Progress

TVA notified Westinghouse of this condition on June 30, 1981 so that the appropriate disposition could be determined. Also, Watts Bar Construction (CONST) has initiated a nonconforming condition report on this subject. Westinghouse is in the process of drafting a response to this violation to provide corrective action, action to prevent recurrence, and date of full compliance.

Response for Item 2Reason for the Violation

It is a failure of personnel to properly implement WBNP-QCP-1.6 for the receipt of NSSS vendor equipment.

Corrective Action Taken and Results Achieved

A review has been made of the documentation received on both unit 1 and 2 valves as a result of the implementation of FCN's WAT-10529 and WBT-10521. As a result of this review, NCR 3341R and NCR 3342R have been issued documenting this condition.

Action Taken to Prevent Recurrence

Employees involved in the receipt inspection of permanent material have been retrained to the requirements of WBNP-QCP-1.6.

Date of Full Compliance

TVA was in full compliance as of July 1, 1981.

Response for Item 3Interim Progress

This item was due to an oversight on the part of the vendor. The QA review box on the second addendum to FCN WBT 10521 was not checked as it should have been. TVA initiated nonconforming condition report WBNNEB8103 on February 25, 1981 pertaining to this deficiency. Westinghouse has subsequently inspected the reworked valves at the site and has stated that a Westinghouse Quality Release is forthcoming. This release was mailed recently from Westinghouse but has not been received as yet. TVA will be in full compliance when the Westinghouse Quality Release is received.

NRC Question on 81-03-02 (July 27, 1981 letter)

Regarding Item B (390, 391/81-03-02), we have evaluated your response and noted that you did not address the last subparagraph of item 5.b. in the report details section. Your final report should provide an adequate response to this item.

TVA Response on 81-03-02

Westinghouse is in the process of drafting a response to the NRC's request for an adequate response to the last subparagraph of item 5.b. in the report details section. This response was requested by TVA on August 20, 1981. TVA will submit this response, the response to 81-03-02, item (1), and verification of the receipt of the Westinghouse Quality Release for 81-03-02, item (3) to the NRC by November 19, 1981 (date determined by present Westinghouse schedule).

Violation 390,391/81-03-03

10CFR50, Appendix B, Criterion V, requires activities affecting quality to be accomplished in accordance with instructions. The accepted QA program, FSAR, Section 17.1A.5, states that assurance is provided that activities are accomplished in accordance with these instructions. Section 5.2 of WBNP-QCI-1.2, 'Control of Nonconforming Items,' requires engineering personnel to assure identification of nonconforming items by initiating nonconforming condition reports.

Contrary to the above, as of March 18, 1981, engineering personnel had not initiated a nonconforming condition report for the sandy textured contamination in the oil systems of the unit 1 and 2 steam-driven auxiliary feedwater pumps.

Admission of Denial of Alleged Violation

TVA admits the violation occurred as stated.

Reasons for the Violation

This problem of contaminated oil systems was identified through a routine equipment inspection performed by the Mechanical Engineering Unit (MEU) and brought to the attention of the responsible engineer. The responsible engineer reviewed the remarks of the maintenance inspector and determined this was not a nonconforming condition as prescribed in QCI-1.2 because the contaminated pumps would be properly cared for through the normal construction process. The engineer believed no NCR was warranted. None was issued.

Corrective Steps Taken and Results Achieved

Nonconforming condition report No. 3085R was initiated documenting this condition.

Corrective Steps to Avoid Further Violations

The responsible engineer was instructed in the correct interpretation of QCI-1.2.

Date of Compliance

TVA is now in full compliance.

Violation 390/81-03-09

10CFR50, Appendix B, Criterion V, requires that activities affecting quality be documented by instructions and shall be accomplished in accordance with those instructions. FSAR, section 17.1A.5, states that activities affecting quality are prescribed by documented instructions. Watts Bar Quality Control Instruction (WBNP-QCP-1.39), section 6.2.6.5, states that fire doors will be inspected according to WBNP-QCP-2.18, 'Inspection of Mechanical Doors, Hatches, and Manways.' WBNP-QCP 2.18 applies to all doors installed by TVA forces within the scope of the Quality Assurance Program and requires that completed documentation be sent to the Quality Control and Records Unit for storage.

Contrary to the above, as of March 18, 1981, activities affecting quality were not accomplished in accordance with instructions in that no inspection documentation of installed fire doors had been completed.

Admission or Denial of the Alleged Violation

TVA admits the violation occurred as stated.

Reason for the Violation

Civil Engineering Unit inspectors were unaware of the QA program applicable to fire doors. TVA drawings 46W454 and 46W455, Architectural Door and Hardware Schedule and Door Frames and Details, do not identify these features as safety related. Construction Specification N3G-881, Identification of Structures, Systems, and Components Covered by the Watts Bar Nuclear Plant Quality Assurance Program, does not list these doors as safety related.

Corrective Action Taken and Results Achieved

Nonconforming Condition Report 3083R1 was initiated on March 17, 1981, applicable to all fire-rated access doors and overhead rolling doors listed on drawings 46W454 and 46W455. All doors identified in NCR 3083 R1 have been reinspected and documented. TVA has further determined that no QA is required on redhead installation or grouted fire-rated door frames. However, verification of grout installation is required.

Action Taken to Prevent Recurrence

The scope of WBNP-QCP-2.18, Inspection of Mechanical Doors, Hatches, and Manways, has been revised to include fire-rated, hinge-type, sliding, and overhead, rolling-type doors in safety-related buildings. Civil Engineering Unit (CEU) QA inspectors were retrained in WBNP-QCI-1.39 and WBNP-QCP-2.18. TVA has investigated whether fire doors should be included in Construction Specification N3G-881, and also why notes were not placed on the drawings to identify the fire doors as safety related. TVA has also investigated whether the fire doors have sufficient documentation to meet the QA program procurement requirements.

Date of Full Compliance

WBNP-QCP-2.18 was revised, the CEU QC inspectors were retrained, and corrective action was completed by July 20, 1981. TVA is now in full compliance. Results of TVA's investigations show that fire doors are not defined as safety related and, therefore, are not identified as such in drawings and are not required in specification N3G-881. Also, the fire door vendor, W. S. Tremble (Knoxville, Tennessee), is providing TVA with a letter of certification on the conformance of the doors to QA program procurement requirements. Further information on fire doors is provided below.

NRC Question on 81-03-09 (July 27, 1981 letter)

Regarding Item E (390/81-03-09), we have evaluated your response and noted that the reason for the violation, corrective action taken, and action taken to prevent recurrence indicate an apparent lack of definition of QA program requirements to be applied to fire protection features other than those which perform safety-related functions (i.e., auxiliary feedwater backup). Your final report should outline the fire protection QA program for design and construction, especially as it differs from the QA program for safety-related features.

TVA Response on 81-03-09

TVA's April 18, 1977, Fire Prevention and Protection Program Evaluation submittal, transmitted by letter from J. E. Gilleland to Roger S. Boyd, addresses the quality assurance requirements for fire protection and related systems. Section C of this submittal establishes an agency level commitment for a Fire Protection Quality Assurance Program and outlines differences between this program and the QA program for safety-related systems as applied to design and construction activities.

Engineering Design (EN DES) provided Watts Bar Construction Project input necessary to establish a Fire Protection Quality Assurance Program by memorandum from the Sequoyah design project manager to the Watts Bar construction project manager dated August 18, 1978. Fire doors were identified as one of the features to be included in this program. The Division of Construction has since developed and issued Quality Assurance Program Policy (QAPP) 22, 'Fire Protection' (issued September 25, 1979) which also identifies fire doors as one of the fire protection features to be included in the Fire Protection Quality Assurance Program.

Numerous additional memorandums have been exchanged between EN DES and Watts Bar Construction Project which further discuss and define the fire protection quality assurance requirements. In retrospect, TVA admits that it is inappropriate to establish quality assurance program requirements via memorandum and is currently developing Construction Specification G-73 entitled, 'Inspection, Testing and Documentation Requirements for Fire Protection Systems and Features.' This general specification is scheduled to be issued by November 23, 1981 and will formally document previously established requirements in an appropriate manner.

NRC Question on Items A through E of 81-03 (July 27, 1981 letter)

Regarding Items A through E, we have noted a general lack in addressing the fourth paragraph on the first page of the cover letter dated May 14, 1981, for report Nos. 50-390/81-03 and 50-391/81-03. Your final report should adequately address this paragraph for all items listed in the report.

The fourth paragraph and the first page of the cover letter dated May 14, 1981 states:

In addition to the need for corrective action regarding these specific violations, we are concerned about the implementation of your quality assurance program that permitted their occurrence. Consequently, in your reply you should describe in particular those actions taken or planned to improve the effectiveness of your quality assurance program.

TVA's Response on 81-03 - QA Program Improvement

A partial response to the concerns regarding the Watts Bar QA program was given in the response to the Notice of Violation described in Appendix A of the OIE Inspection Report 50-390, 391/81-09 and in a meeting on August 19, 1981 between TVA and NRC representatives.

The effectiveness of TVA's quality program is a matter of grave concern throughout the TVA organization. Concentrated efforts are being made by TVA upper management to define specific problem areas and seek effective corrective action for this complex issue. In addition to the NRC concerns, many internal TVA organizations have identified similar inadequacies in the quality program. TVA is working to address these concerns and recommendations. It is our intent that this concerted, internal effort will likewise address the NRC concerns. Progress appears to be slow due to the complexity of the problem and management's determination to fully address the issues. However, TVA management is totally committed to improving the effectiveness of the QA program in a timely manner.

yellow

JUL 27 1981

Tennessee Valley Authority
ATTN: Mr. H. G. Parris
Manager of Power
500A Chestnut Street Tower II
Chattanooga, TN 37401

Gentlemen:

Subject: Report Nos. 50-390/81-03 and 50-391/81-03

Thank you for your letter of June 11, 1981, informing us of steps you have taken to correct the violations concerning activities under NRC Construction Permit Nos. CPPR-91 and CPPR-92 brought to your attention in our letter of March 14, 1981. We will examine your corrective actions and plans during subsequent inspections.

Regarding Item E (390/81-03-09), we have evaluated your response and noted that the reason for the violation, corrective action taken, and action taken to prevent recurrence indicate an apparent lack of definition of QA program requirements to be applied to fire protection features other than those which perform safety-related functions (i.e., auxiliary feedwater backup). Your final report should outline the fire protection QA program for design and construction, especially as it differs from the QA program for safety-related features.

Regarding Item B (390, 391/81-03-02), we have evaluated your response and noted that you did not address the last subparagraph of item 5.b. in the report details section. Your final report should provide an adequate response to this item.

Regarding Item D (390/81-03-07), we have evaluated your response and concur with your corrective action. However, we have noted that a commitment has not been made for the date of issuance of the "staff procedure manual". Your final report should provide a commitment for the date of issuance. We would expect the date to be such that TVA plants now under construction along with any future plants to be constructed will benefit from this manual.

Regarding Items A through E, we have noted a general lack in addressing the fourth paragraph on the first page of the cover letter, dated May 14, 1981, for report nos. 50-390/81-03 and 50-391/81-03. Your final report should adequately address this paragraph for all items listed in the report.

JUL 27 1981

Tennessee Valley Authority

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We appreciate your cooperation with us.

Sincerely,

RS

R. C. Lewis, Director
Division of Resident and
Reactor Project Inspection

cc:

H. J. Green, Director of Nuclear Power
C. C. Mason, Acting Plant
Superintendent
J. E. Wilkins, Project Manager
J. F. Cox, Supervisor, Nuclear
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bcc:

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