

NOTICE OF VIOLATION

Tennessee Valley Authority  
Watts Bar Units 1 and 2

Docket Nos. 50-390 and 50-391  
License Nos. CPPR-91 and CPPR-92

During an NRC inspection conducted October 7 through October 14, 1994, two violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, the violations are listed below:

- A. 10 CFR 50, Appendix B, Criterion V, and Tennessee Valley Authority Nuclear Quality Assurance Plan TVA-NQA-PLN89-A, Revision 4, Section 6.1.1, require in part that activities affecting quality be prescribed by documented instructions or procedures and shall be accomplished in accordance with these instructions or procedures.

Site Standard Practice SSP-7.53, Modification Workplans, Revision 11, Section 2.6, requires that plant features be installed per the workplan work instructions and design controlled output documents or approved design change documents.

Contrary to the above, completed work was not accomplished in accordance with procedural requirements as evidenced by the following:

1. General Engineering Specification G-38, Installation, Modification, and Maintenance of Insulated Cables Rated Up to 15,000 Volts, Revision 13, Section 3.4.1.1.p, and Modification Addition Instruction MAI-3.3, Cable Terminating, Splicing, and Testing for Cables Rated Up to 15,000 Volts, Revision 12, Appendix A, Section A3.2, require that splices made in manholes shall be waterproofed by the use of nuclear grade Raychem heat shrink tubing.

On October 14, 1994, Class 1E medium voltage splices installed in manholes 18, 19, 20, 21, 22, 23, 24, 25, 26, and 27, were determined not to be installed with a nuclear grade Raychem heat shrink tubing to provide waterproofing. The following medium voltage splices were installed in the manholes (WBN-SPL-):

9201	9202	9203	9204	9197	9198	9199	9200	9105	9193
9194	9195	9196	9189	9190	9191	9192	12381	12382	

2. Engineering Administrative Instruction EAI-3.05, Design Change Notices, Revision 19, Section 5.1.8.c, requires that prior to closure of a design change notice all site engineering documents requiring changes are identified and that the appropriate incorporation status is correctly shown on the design change notice forms. Section 5.9.1.6 of the same procedure requires that

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engineering documents, including design basis documents, and supporting documents affected by the design change are updated within 45 calendar days of the work completion date of the design change.

On October 14, 1994, General Engineering Specification Exception G-38-WBN-21 was determined not to have been updated to reflect the field design changes specified in Design Change Notice F24759-A. This change notice revised the location of cable splice WBN-SPL-9105 from junction box 0-JB-292-6364A, located in the auxiliary building, to manhole 22. Field Change Notice F24759-A was closed on April 8, 1994.

3. Standard Drawing E12.5.9, Cable Splicing of Installed Cables in Cable Trays, Revision 0, required the installation of enclosures for Class 1E splices installed in cable trays. Workplans D-11050-55, D-11050-56, D-11050-57, and D-11050-58 required the implementation of Drawing Change Authorization M-11050-61. This drawing change authorization required the implementation of Standard Drawing E12.5.9.

On October 14, 1994, work activities were determined not to have been accomplished in accordance with workplan instructions in that the requirements of Standard Drawing E12.5.9 were not implemented as evidenced by the lack of solid metal barrier between the adjacent cable splices, solid top or bottom tray cover, fireboard installed at either end of the splices, and silicone foam installed at the ends of the splices between fireboard material. The following splices were installed in cable trays without the required enclosures (WBN-SPL-):

9113 9115 9108 9110 9106 9102 9098 9100

This is a Severity Level IV violation (Supplement II).

- B. 10 CFR 50, Appendix B, Criterion XVI, and Tennessee Valley Authority Nuclear Quality Assurance Plan TVA-NQA-PLN89-A, Revision 4, require in part that measures be established to assure that conditions adverse to quality, such as deficiencies and nonconformances are promptly identified and corrected in accordance with documented plans, and corrective actions shall be verified and documented by the appropriate organization. The measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition.

Site Standard Practice SSP-3.04, Corrective Action Program, Revision 13, paragraph 2.3, requires the development of corrective actions to correct the conditions and prevent recurrence. Paragraph 2.5 requires the implementation and/or monitoring of the approved corrective action. Paragraph 2.9 and Appendix E require that significant corrective action reports involving hardware corrective action not be closed until field work is complete and verified.

Site Standard Practice SSP-3.06, Problem Evaluation Reports, Revision 15, paragraph 2.3, requires that specific actions and interim measures to correct adverse conditions and prevent recurrence be developed. Paragraph 2.4.A requires that corrective actions be implemented.

Contrary to the above, established corrective actions to correct known deficiencies and prevent repetition were inadequate in that the following were identified:

1. On August 27, 1994, Significant Corrective Action Report WBP880636SCA was closed with incomplete corrective action to install seismic restraint clamp bars on instrument racks, as specified in Design Change Notice C-03053-A. Specifically, Design Change Notice C-03053-A remained open pending engineering review and incorporation of Design Change Notice F-29143-A which provided a change to the clamp bar orientation. Subsequent engineering review determined that the orientation provided in Design Change Notice F-29143-A was inadequate and could not be approved for incorporation into Design Change Notice C-03053-A. Consequently, additional engineering design and field modification will be required for completion of the installation of the clamp bars.
2. Corrective actions for 10 CFR 50.55(e) reportable condition 50-390, 391/86-24 (nonconformance report 6536) required the revision of construction specifications and site procedures to define proper connectors for Class 1E medium voltage splice applications. These revisions resulted in General Engineering Specification G-38, Installation, Modification, and Maintenance of Insulated Cables Rated Up To 15,000 Volts, Revision 13, paragraph 3.4.1.1.q, requiring appropriate size connectors as specified in Appendices A and B. These specify the required splice connectors to be used in Class 1E medium voltage (6900 V) applications.

On October 14, 1994, the recurrence controls associated with the construction deficiency report were determined not to be effective in that work activities associated with Workplans D-11050-55, -56, -57, -58, and KP06978A-5 were not accomplished in accordance with the workplan instructions and above procedure requirements. As a result, 75 Class 1E 6900 V splice connections were made using connectors rated for 600 V.

3. The corrective actions for Problem Evaluation Report WBNPER930495 Revision 1, in part, required the following interim measures for Seismic Category I manholes containing Class 1E cables:

Remove Manhole Debris. For manholes found flooded, remove water and repair sump pump system to operating condition.

As of October 1, 1994, conditions adverse to quality were not promptly identified and corrected in that the established

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corrective actions for WBP930495, Revision 1, were not implemented. This resulted in 9 of 24 Category I manholes with inoperable water removal systems.

4. On October 11, 1994, it was determined that previously-identified corrective actions were not adequate to properly disposition adverse conditions. NRC inspectors found an additional example of improperly torqued mounting bolts on safety-related differential pressure transmitter 1-PDT-3-122A. Based on field observations of TVA-Watts Bar torque verifications, the inspectors estimated that the two mounting bolts for the transmitter were torqued to 7 foot pounds and 15 foot pounds, respectively. The vendor manual requirement for mounting bolt torque was 35 foot pounds.

This is a Severity Level IV violation (Supplement II).

Pursuant to the provisions of 10 CFR 2.201, Tennessee Valley Authority is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555, with a copy to the Regional Administrator, Region II, and a copy to the NRC Resident Inspector, Watts Bar, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. If an adequate reply is not received within the time specified in this Notice, an order or demand for information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

Dated at Atlanta, Georgia  
this *10<sup>th</sup>* day of *November* 1994