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MAY 17 1993

U.S. Nuclear Regulatory Commission
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Gentlemen:

In the Matter of the Application of) Docket Nos. 50-390
Tennessee Valley Authority) 50-391

WATTS BAR NUCLEAR PLANT (WBN) - NRC INSPECTION REPORT NOS. 50-390/93-20,
50-391/93-20 - REPLY TO NOTICE OF VIOLATION

This letter responds to Inspection Report 50-390/93-20, 50-391/93-20 dated April 16, 1993, which identified a Severity Level IV violation concerning three examples of failure to follow procedures involving application software, and a Severity Level IV violation related to a failure to adequately document and review corrective actions for test deficiencies.

Enclosure 1 to this letter addresses the specific examples identified as violation 390, 391/93-20-03 and the corrective actions taken by TVA.

Enclosure 2 addresses violation 390/93-20-04.

If you have any questions, please telephone P. L. Pace at (615) 365-1824.

Very truly yours,

William J. Museler

Enclosures
cc: See page 2

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ENCLOSURE 1

WATTS BAR NUCLEAR PLANT UNIT 1
REPLY TO NRC'S APRIL 16, 1993 LETTER TO TVA
NRC VIOLATION 390/93-20-03, 391/93-20-03

DESCRIPTION OF VIOLATION

10 CFR 50, Appendix B, Criterion V, Instructions, Procedures and Drawings, are implemented in part by TVA's Nuclear Quality Assurance Plan, Paragraph 6.0, which endorses ANSI N45.2-1971 and states that quality related activities shall be prescribed by documented procedures and instructions and shall be performed in accordance with approved and controlled instructions, procedures, and drawings. Paragraph 13.2.G of the Nuclear Quality Assurance Plan states that prior to implementation, application software shall be verified to demonstrate that system requirements are satisfied in the system design, implemented in the computer code, validated through documented tests, and the test results independently reviewed.

Contrary to the above, on March 19, 1993, three examples of failure to follow procedures were identified.

VIOLATION EXAMPLE 1

Controlled documents involving quality-related software were not controlled as required by Nuclear Power Standard (STD)-2.12, Control of Computer Software, and various other procedures. On February 11, 1993, 56 software program receipt acknowledgements had not been received. The worst instance was 240 days delinquent.

REASON FOR VIOLATION (EXAMPLE 1)

Delinquent receipt acknowledgements occurred due to the existence of multiple Information Services (IS) library procedures with inconsistent implementing instructions. These procedures failed to address follow-up and escalation of overdue receipt acknowledgements for individually held manuals, and cognizant library personnel did not escalate overdue paperwork by notifying appropriate TVA management.

CORRECTIVE ACTIONS TAKEN (EXAMPLE 1)

Quality Assurance (QA) software holders with receipt acknowledgements more than 50 days overdue were notified to return overdue receipt acknowledgements or manuals by March 12, 1993. As of March 15, 1993, there were no holders with outstanding receipt acknowledgements of more than 17 days.

One of the overdue receipt acknowledgements involved actual software which was transmitted in a package containing both manuals and software. This deficiency has been corrected. The remainder of overdue receipt acknowledgements involved manuals which have been corrected as discussed above.

An interim follow-up and escalation process has been implemented internal to the IS library. IS library personnel have been trained to the interim process.

CORRECTIVE ACTIONS TAKEN TO PREVENT RECURRENCE (EXAMPLE 1)

IS will issue and implement a single library procedure by August 20, 1993, that eliminates the inconsistent follow-up and escalation implementing instructions currently in use. This procedure will require escalation and follow-up for overdue receipt acknowledgements. The subject violation number will be source noted in the new procedure to prevent future changes without review of the circumstances surrounding this violation.

IS personnel will be retrained to the new procedure.

DATE OF FULL COMPLIANCE (EXAMPLE 1)

TVA is now in full compliance.

ADDITIONAL INFORMATION/TVA CLARIFICATION (EXAMPLE 1)

In the subject inspection report, the inspector concluded that periodic surveys of manual holders to validate the standard distribution list and revision levels of software manuals in use were not conducted as required by Work Instruction (WI)-6.0.

The site Document Control Records Management (DCRM) organization conducts scheduled assessments of controlled document stations which serve multiple users to ensure that the content of those stations are consistent with the latest controlled copy distribution list. Individually held manuals are not handled in this manner.

The contents of individually held manuals are updated by the manual holder and a formal receipt acknowledgement form returned to the issuing DCRM. This practice is designed to ensure that each individually held manual remains consistent with the latest controlled copy distribution list. Specific assessments of individually held manuals are performed only if problems with receipt acknowledgements are noted for a particular manual holder.

Information Services Production Management DCRM (IS corporate library) deals only with individual manual holders; its practices are consistent with the practices of the site DCRMs.

VIOLATION EXAMPLE 2

The Watts Bar safety-related computer program titled Harsh Environment Records System (HERS), involving maintenance and modification work related to equipment qualification, was placed into full production use without controlling its development and issuance in accordance with Nuclear Power Standard (STD)-2.12, Site Standard Practice (SSP)-2.12, and the approved HERS Software QA Plan.

REASON FOR VIOLATION (EXAMPLE 2)

The HERS software program was placed into production prior to issuance of required documentation as the result of failure to follow procedure, inadequate training, and lack of details in the procedure.

The Watts Bar version of HERS is an adaptation of the Browns Ferry Nuclear Plant system which has been in use at Browns Ferry for over 2 years. On January 13, 1993, when the WBN HERS was made available to workplan writers, each of the five required documents (listed below) were over 90% complete, verification and validation tests had been completed although not properly documented, and the user population was trained.

While the owner and developer personnel understood the requirements for controlled distribution of these documents, they considered the HERS system to be a pilot program so long as its use was being 100% independently verified. Although most of the documents were not completed by January 13, 1993, the functionality of HERS had been fully tested.

Normally, when a new system is first implemented, customers recognize improvements that could substantially enhance the system's functionality. The owner believed that an extended pilot program for the HERS would permit additional features to be added quickly and documentation revised prior to HERS being formally released for use without verification. There was a misunderstanding of the limitations on allowing a pilot program for a safety-related system, due to the lack of training and the lack of details in SSP-2.12. The interpretation made by inexperienced Information System personnel was to allow system usage in a production version based upon the end usage of reports and forms generated by HERS. The interpretation was that if the output was not used without verification, the system was not officially a safety-related system.

CORRECTIVE ACTIONS TAKEN (EXAMPLE 2)

The following documents were issued by March 10, 1993 as controlled documents:

- HERS "System Verification and Validation Plan," dated March 1993
- HERS "User's Guide (Volume I)," dated March 1993 and "User's Guide (Volume II)," dated January 1993
- HERS "Software Quality Assurance Plan," dated December 1991
- HERS "System Requirements Specification," dated March 1993
- HERS "System Design Specification," dated March 1993

The HERS software is now in full compliance with SSP-2.12.

Watts Bar Information System Services personnel were made aware of the circumstances that lead to the violation and were trained to the requirements of SSP-2.12 on March 2, 1993.

CORRECTIVE ACTIONS TAKEN TO PREVENT RECURRENCE (EXAMPLE 2)

TVA will evaluate all WBN safety-related software for compliance with SSP-2.12. Any deficiencies found will be corrected by August 12, 1993.

Site Standard Practice (SSP)-2.12, Control of Computer Application Software, will be revised to clarify responsibility and specific documentation requirements for safety-related software by June 30, 1993. This procedure will be source noted to the subject violation to prevent future changes without review of the circumstances which contributed to the violation.

DATE OF FULL COMPLIANCE (EXAMPLE 2)

WBN will be in full compliance by August 12, 1993.

VIOLATION EXAMPLE 3

The General Notes to the Q-List were issued as Revision 0 of drawing 1-2QL000-0 without properly documenting the incorporated Design Change Notices (DCNs) on the title block as required by paragraph 4.1.3.B of Engineering Administrative Instruction (EAI)-3.09, Incorporation of Change Documents into Drawings. Also, DCCM had not been updated as required to reflect that these DCNs were incorporated.

REASON FOR VIOLATION (EXAMPLE 3)

Although all technical information for the Design Change Authorizations (DCAs) associated with DCNs had already been incorporated into drawing 1-92QL000-0 prior to issue, TVA did not completely follow through by listing those DCAs on the title block. The requirements of EAI-3.09, Incorporation of Change Documents Into Drawings, were partially met, in that one DCN and associated DCA were listed on the title block. Those involved in the issue process failed to ensure that all incorporated DCAs were listed in the drawing title block.

The one DCA that was listed on the title block was updated in DCCM as "incorporated"; however, the remaining DCAs were not updated as a direct result of being left off the drawing title block. Therefore, an update of DCCM had been performed correctly, in that only the DCAs listed on the drawing title block are to be indicated in DCCM as incorporated.

CORRECTIVE ACTIONS TAKEN (EXAMPLE 3)

In accordance with EAI-3.09, an administrative revision has been made to 1-92QL000-0 to add the required DCAs to the cover sheet.

CORRECTIVE ACTIONS TAKEN TO PREVENT RECURRENCE (EXAMPLE 3)

The importance of having all change paper listed in the title block for drawing issues or revisions has been reemphasized with the personnel involved in the issuance of 1-92QL0000-0.

EXTENT OF CONDITION (EXAMPLE 3)

Although this problem occurred with a Q-List drawing, other Watts Bar drawings were evaluated. To perform this extent of condition review, a printout was obtained from DCCM which listed drawings currently in issue status that have unincorporated (UNC status) DCAs. The printout was reviewed for 104 drawings selected at random. Results of this review did not result in any new findings.

DATE OF FULL COMPLIANCE (EXAMPLE 3)

TVA is now in full compliance.

ENCLOSURE 2

WATTS BAR NUCLEAR PLANT UNIT 1
REPLY TO NRC'S APRIL 16, 1993 LETTER TO TVA
NRC VIOLATION 390/93-20-04

DESCRIPTION OF VIOLATION B

10 CFR 50, Appendix B, Criterion XVI, Corrective Action, is implemented in part by the TVA Nuclear Quality Assurance Plan, paragraph 10.2.2, which requires that organizations performing quality-related activities promptly identify and resolve adverse conditions and correct them with documented plans.

Contrary to the above, corrective actions were not performed, documented and adequately reviewed for deficiencies identified on deficiency notice DN1 in Preoperational Test 2211047E2000, prior to closure of the DN1 and the test package.

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

REASON FOR VIOLATION

The violation occurred because Startup Manual Procedure (SMP) 9.0, "Test Conduct," Revision 2, provided inadequate guidance for the identification and disposition of test deficiencies. Inattention to detail by personnel responsible for administration of the deficiency contributed to this condition.

SMP 9.0, Revision 2, which was in use at the time the deficient items were recorded, provided limited directions for identifying, categorizing, and dispositioning test deficiencies. Although the procedure permitted several deficiencies to be included on one Deficiency Sheet (Appendix D), the Deficiency Sheet was more appropriate and convenient for the identification and disposition of only a single item. Of the seven conditions documented on DN1, several items were either not valid problems or did not meet the criteria of a test deficiency (e.g., a work item to add wire protection to door frames). In these cases, the final disposition of the condition was not readily apparent from the DN paper work. One of the items documented on DN1 (Item 7) concerned a drawing discrepancy for which no corrective action was specified. This was determined to be an isolated occurrence. The violation had no effect on the test results for Component Test GTEXXX02 22110407E02000, "Scheme Verification for 6.9KV Shutdown Power System," which was completed in mid-1992. For clarification, DN1 had been issued to that component test, not the preoperational test (PTI 211-01, "6.9KV Shutdown Power System") which was performed to verify integrated system design subsequent to component testing.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

Inspection and document reviews by Startup and Test (SUT) confirmed that actions had been appropriately completed on items 1, 2, and 4 of DN1; items 3 and 6 had been appropriately addressed by Work Order 92-05122-00; and that item 5 was not a deficiency. Drawing Deviation (DD) 93-0089 was initiated on February 24, 1993, to correct deficiency No. 7. DCN S23617-A was issued to resolve the DD.

A review of closed DN's available through January 31, 1993 determined that although the disposition method of some DN's was not clear from the DN form, the DN conditions had been appropriately dispositioned or determined to not represent a problem that would affect testing.

As a result of continuous improvement in the Startup program, considerable enhancement to SMP 9.0 has been implemented since the subject DN was issued. Revision 2 was in use when the deficiencies were identified; Revisions 9 and 10 were effective during the inspection period; and the current revision number is 13. It was recognized during the evolution of SMP 9.0 that improvements were needed in the area of deficiency dispositions. Revisions 3 and 5 were major revisions which, in part, provided directions for processing deficiencies and clarified the definition of deficiencies. Revisions 9 and 10 contained the expanded directions for identifying and categorizing deficiencies and proposed corrective actions. The Test Deficiency Form was made less confusing and included disposition checklists.

During the evaluation of this issue, TVA decided that further enhancements were needed to provide greater consistency in the proper use of Test Deficiencies (DN's). Revision 13 made SMP 9.0 more prescriptive in the definition of test deficiencies and identifies the most common deficiencies and corrective actions. The procedure now requires an individual deficiency form (Appendix B - Test Deficiency Notice) to be issued for each deficient item identified during conduct of the test.

Resolution of this issue is documented on WBN Problem Evaluation Report WBP930056.

CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATIONS

SMP 9.0 was revised (Revision 13) to enhance procedural guidance for processing test deficiencies.

The reviewer for DN1 was counselled by department management on March 16, 1993, regarding "attention to detail." The Test Director responsible for the performance of the subject component test is no longer a TVA employee.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

With respect to the identified discrepancies, TVA is now in compliance.