Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381

William J. Museler
Site Vice President
Watts Bar Nuclear Plant

APR 23 1993

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

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 NO. 390, 391/93-10 - REPLY TO NOTICES OF VIOLATION 390/93-10-01, 390/93-10-03, AND 390/93-10-04

The purpose of this letter is to provide a reply to Notices of Violation 390/93-10-01, 390/93-10-03, and 390/93-10-04 cited in the subject inspection report dated March 19, 1993. The violations identified the failure to use a properly calibrated pressure gauge for testing a containment penetration, lack of weld records for the installation of a cap on the sleeve for penetration X-110, and a failure to follow procedure requirements when testing mechanical pipe support snubbers.

Enclosure 1 addresses the specific conditions described in the inspection report and the corrective actions taken by TVA. Enclosure 2 provides supplemental information regarding the NRC concern expressed with the mechanical snubber test procedure. NRC concerns involving the Quality Assurance organization identified in the subject inspection report and subsequent NRC letter dated April 16, 1993 will be addressed in a separate submittal.

The delay in submitting this reply was discussed with NRC Region II on March 14, 1993. Should there be any questions regarding this information, please telephone P. L. Pace at (615) 365-1824.

Very truly yours,

W. J. Museler

William J. Museler

Enclosure
cc: See page 2

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cc (Enclosure):
NRC Resident Inspector
Watts Bar Nuclear Plant
P.O. Box 700
Spring City, Tennessee 37381

Mr. P. S. Tam, Senior Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852

U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

ENCLOSURE 1
WATTS BAR NUCLEAR PLANT UNIT 1
REPLY TO NRC'S MARCH 19, 1993 LETTER TO TVA
NRC VIOLATIONS 390/93-10-01, 03, 04

DESCRIPTION OF VIOLATION 390/93-10-01

10 CFR 50, Appendix B, Criterion XII, "Control of Measuring and Testing Equipment," requires in part that measures be established to assure that gauges, instruments and other measuring and testing devices used in activities affecting quality are properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits.

Tennessee Valley Authority Nuclear Quality Assurance Plan TVA-NQA-PLN89-A, Revision 2, Section 9.5, "Control of Measuring and Test Equipment and Installed Safety-Related Instrumentation and Control Devices," implements these requirements and requires that measures be established to control equipment which is used to conduct measurements or tests related to determining the functionality or quality of systems and components.

Site Standard Practice 6.07, "Control of Measuring and Test Equipment," Revision 4, step 2.3.B.2 implements the above by requiring that if vendor supplied measuring and test equipment do not have a valid certificate of calibration, then the equipment must be properly calibrated before use.

Contrary to the above, on February 3, 1993, a vendor supplied uncalibrated pressure gauge was used in performing leak rate testing of penetration 1-PENT-293-06A.

REASON FOR THE VIOLATION

The testing was being performed on penetration 1-PENT-293-06A after replacement of some of the feedthrough assemblies and prior to performing the penetration pigtail splices. Conax Manual IPS-1349, "Conax Installation and Maintenance Manual for Electric Penetration Assemblies," specifies a leak check of the penetration assembly after the replacement of the penetration feedthrough assemblies.

This violation resulted from a misunderstanding by the involved personnel who concluded that the uncalibrated gauge was acceptable for a construction verification to confirm that the feedthrough assembly installation was acceptable. This misunderstanding was based on the fact that a later more detailed test would be performed by the startup test organization. However, this conclusion violated the requirements of Site Standard Practice (SSP) - 6.07, "Control of Measuring and Test Equipment."

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

A field check was made prior to depressurization of the penetration by inserting a calibrated pressure gauge in line and comparing the readings between the

gauges. The difference in the gauge readings was found to be 0.5 psi. The uncalibrated gauge was removed and sent to be calibrated.

TVA has issued Special Performance Test (SPT) - 64-01, "Type B Local Leak Rate Test," to test this penetration using calibrated equipment as required by Site Standard Practice SSP-6.07. No other penetrations were involved since penetration 1-PENT-293-06-A was the first penetration to be tested under this scope of work,

CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATIONS

The individuals involved were counselled regarding the seriousness of failing to have test equipment calibrated prior to testing.

Responsibility for penetration testing has now been reassigned to the Start-Up Organization.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

TVA is in full compliance.

ADDITIONAL INFORMATION

The inspection report noted the leak test had initially required Quality Control (QC) inspection for damaged penetration feedthroughs, but was later revised to have the field engineer perform an independent inspection. The reason for this change was that TVA decided that only a second party verification was sufficient to determine if damage, replacement of parts, or new installations were needed. If damage was found, QC inspections would then be required when corrective action was taken.

DESCRIPTION OF VIOLATION 390/93-10-03

10 CFR 50, Appendix B, Criterion XVII, requires sufficient records to furnish evidence of activities affecting quality and they shall be identifiable and retrievable.

Tennessee Valley Authority Nuclear Quality Assurance Plan TVA-NQA-PLN89-A, Revision 2, Paragraph 6.3, Quality Assurance Records, implements these requirements and specifies that sufficient records and documentation shall be prepared and maintained to provide evidence of the quality of the item or activity affecting quality.

Contrary to the above, on February 5, 1993, weld documentation was unavailable for reactor shield building, penetration X-110 cap weld located on the inside end, or containment side of the shield building. This weld was required by drawing 47W4709, Revision 1, Detail E-9.

REASON FOR VIOLATION

The violation occurred as the result of a failure by personnel to identify the full scope of work required in Workplan K-M12792A-1. Deletion of the Upper Head Injection System resulted in the removal of the piping associated with penetration X-110. This design change required the piping sleeves (MK-32, shield building wall, and MK-999, additional equipment room wall) be listed as spares. To seal each sleeve, end caps were required to be installed by drawing 47W4709, detail E-9. The method of installation was to weld steel plates on the outside surface of each sleeve. During the review of documentation associated with the installation of the end caps, the original documentation for the end cap installation was misplaced. TVA then generated a new workplan to remove and reinstall end caps on sleeves MK-32 and MK-999; however, the work instructions failed to provide for the reinstallation of the end cap on sleeve MK-32. Insufficient attention was given by the workplan writers to ensure that the work instructions captured all of the corrective actions necessary to recreate the missing documentation.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

TVA has taken the following corrective actions. Work Request C118267 was initiated to remove the end cap from sleeve MK-32. After removal of the end cap, the removal area was inspected and found to be satisfactory. In order to provide for additional sealing through the penetration, a design change notice (DCN M-23465) has been initiated to authorize an alternative method for sealing sleeve MK-32. The end caps for MK-32 and MK-999 are not required by this design change.

Changes in the work control process since the restart of construction have resulted in a single group of personnel who research, prepare, and review workplans. Workplan writers and reviewers are trained in workplan preparation and are knowledgeable about the field or discipline in which the work is being performed.

Implementation of the work control process is monitored by the Quality Assurance organization to evaluate initiation, implementation, and closure. In addition, vertical slice assessments of the site engineering and modifications workplan process are completed periodically. The results of these evaluations and assessments are provided to management in the, "Quality Assurance Trend Analysis and Assessment of Site Performance," monthly report. Any negative trends or unacceptable results requires TVA to take prompt corrective actions.

CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

No further steps beyond those discussed above are considered necessary.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

TVA is currently in full compliance.

DESCRIPTION OF VIOLATION 390/93-10-04

10 CFR 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings specifies that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.

Tennessee Valley Authority Nuclear Quality Assurance Plan TVA-NQA-PLN89-A, Revision 2, Section 6.0, Control of Documents, implements these requirements and requires that quality-related activities shall be prescribed by documented procedures and instructions appropriate to the circumstances, and that activities shall be accomplished in accordance with these procedures and instructions. In addition, this section requires procedures and instructions to undergo a documented review for adequacy by a qualified reviewer other than the preparer, receive the review and concurrence of affected organizations outside the issuing organization prior to approval, and receive a review to ensure proper incorporation of QA requirements.

PAI-1.04, Verification and Validation of Procedures, Revision 2, paragraph 2.0, specifies that after first performance or simulation, the procedure requires approval and then becomes a controlled document prior to performing any further safety-related functions with the procedure.

Contrary to the above, on January 27, 1993, the licensee failed to follow procedure PAI-1.04, Revision 2, and tested approximately 60 safety related snubbers without an authorized, approved procedure.

This is a Severity Level IV Violation (Supplement II)

REASON FOR THE VIOLATION

The procedure cited in the notice of violation, PAI-1.04, Revision 2, establishes the administrative controls associated with the verification and validation process for technical performance-based procedures including the System Pre-Operational Checklist (SPOC) validation process. The SPOC validation process is applicable to technical performance-based procedures involving work on equipment and components before system turnover to operations. The purpose of the SPOC validation process is to provide a controlled mechanism for ensuring that the technical work instructions are correct and can be efficiently accomplished as written since the technical procedures may involve work on multiple components with various installation configurations, e.g., mechanical snubbers. The SPOC validation process provides valuable feedback to the procedure writer regarding conditions that, without actual field performance, may not be anticipated during the procedure walkdown process.

The functional testing of mechanical piping support snubbers at WBN is performed in accordance with technical procedure 1-TRI-0-6. (Note: The specific related NRC concerns identified in the text of Inspection Report No. 390, 391/93-10 regarding the reviews, approvals, and document controls associated with 1-TRI-0-6 are addressed in detail in Enclosure 2 to this reply to notice of violation.) As required by PAI-1.04, the snubber test procedure 1-TRI-0-6 received the appropriate technical reviews and approvals before beginning the SPOC validation process.

TVA's evaluation of the cited violation determined that the review and approval process associated with technical procedure 1-TRI-0-6 adequately implements the requirements of PAI-1.04 and is consistent with the TVA Quality Assurance Plan. In the cited case the snubber testing conducted during the SPOC validation process went beyond what is necessary to establish a meaningful procedure validation given the number (approximately 60) of similarly designed components tested. However, 1-TRI-0-6 was reviewed, approved, and administratively controlled in accordance with PAI-1.04 for performing a SPOC validation during procedure performance.

The requirements stated in PAI-1.04 and cited in NRC Inspection Report No. 390, 391/93-10, are intended to provide responsible engineers the latitude to perform an appropriate number of component tests or simulations. These provide a meaningful, realistic representation of the actual field conditions associated with implementation of the technical performance-based work instructions.

Corrective Steps That Have Been Taken And The Results Achieved

TVA has taken steps to clarify management expectation regarding the number of components tested during the SPOC validation process. PAI-1.04 has been modified to more specifically address the extent to which a SPOC validation performance is appropriate for multiple components (e.g., breakers, snubbers, MOVs). PAI-1.04 now stipulates that the validation performance should not continue beyond the number of different components/scenarios necessary to adequately validate the procedure. The data collected during the procedure validation process has been invalidated and the snubbers are being retested to the issued test procedure 1-TRI-0-6 as part of the snubber testing program.

Corrective Steps That Will Be Taken To Avoid Further Violations

No further steps beyond those discussed above are considered necessary.

Date When Full Compliance Will Be Achieved

TVA is currently in full compliance with applicable procedures.

ENCLOSURE 2
WATTS BAR NUCLEAR PLANT UNIT 1
SUPPLEMENTAL INFORMATION REGARDING
MECHANICAL SNUBBER TEST PROCEDURE
NRC CONCERNS IN INSPECTION REPORT NO. 390, 391/93-10

The purpose of this enclosure is to address NRC concerns identified in NRC Inspection Report No. 390, 391/93-10 regarding the review, approval, and administrative control associated with the mechanical support snubber test procedure 1-TRI-0-6 that were not included in the associated notice of violation (NOV). As discussed in TVA's reply to the NOV, TVA believes that the mechanical support snubber test procedure 1-TRI-0-6 was reviewed, approved, and administratively controlled in accordance the procedure validation process requirements of PAI-1.04.

Although not cited in the subject NOV, the following specific concerns with 1-TRI-0-6 were identified in NRC Inspection Report No. 390, 391/93-10 and are addressed below.

NRC Concern 1 (Page 12)

The [NRC] inspector noted that 1-TRI-0-6, Revision 4 was not approved and was missing approval signatures/dates for QA, Plant Manager, Area Responsible Manager, and PORC. Also, the implementation date was blank.

TVA Response

When the NRC inspector observed the snubber testing activity, 1-TRI-0-6 was in the process of being validated in accordance with PAI-1.04 under the System Preoperability Checklist (SPOC) validation process. This validation process is applicable to components before transfer to operations. The SPOC validation process requires the review and approval of technical performance-based procedures being validated to the appropriate level for controlling quality-related work activities during the first performance or simulation of the procedure. Technical procedures validated by the SPOC validation process may involve multiple components, such as in the case of the mechanical snubber test procedure.

The SPOC validation process is implemented by the use of a single working copy of the technical procedure that is controlled by the responsible test engineer. PAI-1.04 provides for the responsible test engineer to make "pen-and-ink" type changes during the SPOC validation process. The allowed changes to technical procedures during the SPOC validation process do not affect the performance or documentation of quality-related work activities. To provide assurance that changes to technical procedures made during the SPOC validation process were appropriate, the responsible engineer and supervisor are required to review the changes before presenting the procedure to the Plant Operations Review Committee (PORC) for final approval and issuance.

The revision level of technical procedures does not increase with each change made during the validation process. TVA considers the SPOC validation process to provide a technically adequate, administratively controlled mechanism for ensuring that technical procedures are correct and can be efficiently performed after formal issuance for use after system turnover to operations. The specific controls associated with the validation of the snubber procedure are discussed in Enclosure 1.

NRC Concern 2 (Page 12)

... from the [NRC] inspector's review it [1-TRI-0-6] was found to contain requirements that were different from the other copy of Revision 4 given to the inspector.

TVA Response

Technical performance-based procedures requiring validation under the SPOC validation process are administratively controlled by the responsible test engineer as required by PAI-1.04. Since a noncurrent copy of 1-TRI-0-6 was mistakenly provided to the NRC inspector first, the current copy contained minor changes determined necessary during the SPOC validation process. The change involved deletion of a second-party verification sign-off that was not required for the affected procedure step. For clarity, the changes to 1-TRI-0-6 had been typed into the original working copy by the responsible engineer. The process of incorporating changes into the original working copy of the procedure may have contributed to confusion on the part of the NRC inspector. This process has since been clarified procedurally to minimize any misinterpretation or misuse.

NRC Concern 3 (Page 12)

The [NRC] inspector requested an approved copy of the latest revision of 1-TRI-0-6 from DCRM (DCRM is an approved procedure issue station) and found that DCRM did not have an approved and controlled copy of 1-TRI-0-6, Revisions 0, 1, 2, 3, or 4.

TVA Response

As discussed in NRC IR No. 390, 391/93-10, 1-TRI-0-6, Revision 4, is the technical snubber test procedure that supersedes surveillance instruction SI-4.18, Revision 3, to support WBN's MERITS Technical Specifications. Since the TRI is a major revision to the snubber test program, SPOC validation was required. TVA erroneously, in this example, adopted a convention for this procedure upgrade where the superseding procedure revision was incremented one level above the superseded procedure. After identification of this mistake, TVA issued 1-TRI-0-6 to Document Control as Revision 0.

NRC Concern 4 (Page 13)

The [NRC] inspector found the licensee failed to process the procedure [1-TRI-0-6] through the required approval and submittal to DCRM for issuance as an approved, controlled procedure prior to continuing with snubber testing beyond the first performance test.

TVA Response

As discussed in TVA's reply to the subject NOV and further discussed above, the snubber testing activity associated with procedure 1-TRI-0-6 was undergoing SPOC validation in accordance with PAI-1.04 at the time of the NRC inspection. While the number of snubbers tested during the SPOC validation process for 1-TRI-0-6 may have been excessive for establishing a valid work procedure, TVA considers the administrative controls of PAI-1.04 to be adequate for performing quality-related activities. However, as a result of NRC concern, PAI-1.04 has been revised to clarify managements expectation regarding the extent to which a SPOC validation performance is appropriate for multiple components (e.g., breakers, snubbers, MOVs). PAI-1.04 now stipulates that the validation performance should not continue beyond the number of different components/scenarios necessary to adequately validate the procedure.

NRC Concern 5 (Page 13)

Approval of these procedures [Plant Administrative Instructions (PAIs)] by QA was waived by the WBN site quality manager on September 18, 1991, via memorandum (RIMS T19910918906) to the engineering manager and the plant manager. This document indicated that QA review of the majority of WBN operating procedure would be passed on to independent reviewers other than those in QA.

TVA Response

TVA understands NRC concerns with this issue and will respond to this item in conjunction with the other QA concerns discussed in the cover letter of this report.

NRC Concern 6 (Page 13)

During the snubber test work observation discussed above, the inspector also found that required data was not entered on work documents as required by the procedure being used in the field for the snubber removal activities.

TVA Response

TVA agrees that the required data was not recorded on the work document data sheet in a timely manner. The required data had been recorded by the craft personnel on a note pad that was to be transferred to the procedure data sheets. TVA's evaluation of this concern included personnel interviews and additional reviews of completed work documentation. Only minor documentation discrepancies were identified with no other examples of incomplete documentation. Therefore, TVA concludes that this problem with data entry is an isolated occurrence. Management action involving the craft personnel associated with this event has been taken. The affected snubbers will be retested in accordance with the issued test procedure 1-TRI-0-6. Additionally, the Plant Manager issued a memorandum to plant personnel emphasizing the requirements for timeliness and accuracy in documentation.

TVA considers the above actions appropriate to address the data entry concern and no further action is considered necessary.