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

John H. Garrity
Vice President, Watts Bar Nuclear Plant

OCT 07 1991

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

Gentlemen:

In the Matter of the Application of ) Docket No. 50-390
Tennessee Valley Authority )

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 - NRC INSPECTION REPORT NO. 50-390/91-13 - NOTICE OF VIOLATION 50-390/91-13-01

TVA has reviewed the subject inspection report dated September 5, 1991. TVA will address the quality assurance records aspect of this inspection in the response to NRC's request for additional information dated August 30, 1991.

Enclosure 1 provides TVA's responses to the examples of violation cited in this inspection report.

Enclosure 2 provides a list of commitments resulting from this submittal.

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

Sincerely,

John H. Garrity

Enclosure

9110150125 911007
PDR ADOCK 05000390
Q PDR

IE01 1/1

OCT 07 1991

cc (Enclosures):
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

Mr. B. A. Wilson, Chief, Project Chief
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

ENCLOSURE 1

REPLY TO NOTICE OF VIOLATION
VIOLATION NO. 50-390/91-13-01

DESCRIPTION OF VIOLATION

10 CFR Part 50, Appendix B, Criterion V requires 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. . ."

Watts Bar Nuclear Plant Administrative Instruction AI-9.2.3, paragraph 6.2.2.D.2, "Maintenance Request Performance," requires that the craftsman record the TVA tag number and calibration due date for each piece of Measuring and Test Equipment used to obtain data in the Corrective Action/Work Performed Section of the Maintenance Request if provisions for recording this information are not provided elsewhere in the Maintenance Request work package or associated documents.

Administrative Instruction AI-9.4.2, Revision 15, paragraph 6.4.10, "Controlling Welding, Brazing and Soldering Processes," requires that the responsible craft management ensure that each date welding was performed be entered on the Weld Data Sheet. Paragraph 6.5.2.2 and Appendix G of the Administrative Instruction require that the Welding Engineering Unit verify that all hold points are signed and correlations between sequence of operations and dates are correct (e.g., final inspection(s) has not been completed prior to fit-up inspection).

Construction Process Instruction CPI-8.1.8-E-100A, Revision 2, paragraph 6.2, "Termination, Splicing, and Repair of Low and Medium Voltage Cables," requires megger testing of low voltage power cables.

Contrary to the above:

DESCRIPTION OF VIOLATION EXAMPLE 1

The licensee did not have adequate procedures to assure that vendor manual torque requirements were incorporated into the maintenance work instructions as evidenced by the following:

The body to bonnet fasteners for valves 1-DRV-62B-987B, 2-BYV-62B-962C, and 2-BYV-62B-962D were torqued to 20 ft-lbs (240 in-lbs), during the work of MR A627606, contrary to the vendor manual (TVA vendor manual 0904, contract 54114-1, ITT Grinnell Diaphragm Valves Maintenance and Instruction Manual) which specified a maximum torque of 96 in-lbs.

The packing gland cap screws for valve 2-ISV-62A-724 were tightened "snug tight," during the work of MR A627811, contrary to the vendor manual (Kerotest Installation, Maintenance, and Operation Manual Number MG-044, contract 85K74-835795) which specified a maximum torque of 18 ft-lbs.

ENCLOSURE 1

REPLY TO NOTICE OF VIOLATION
VIOLATION NO. 50-390/91-13-01

TVA RESPONSE TO EXAMPLE 1

ADMISSION OR DENIAL OF THE VIOLATION

TVA admits that the violation examples occurred as clarified below.

REASON FOR THE VIOLATION

TVA has reviewed the items identified in the violation examples where incorrect manual torque values for Maintenance Request (MR) work instructions were specified. TVA has determined that the reason for these deficiencies can be attributed to a lack of attention to detail by the Construction personnel generating the MR work instructions.

[Subsequent evaluation of the condition described for the packing gland cap screws for valve 2-TSV-62A-724 (MR A-627811) has determined that the "snug tight" work instructions were valid for the installed condition and in agreement with the vendor requirements. However, other valves included in the implementation of this MR were not torqued according to their approved vendor requirements and are identified in Problem Evaluation Report (PER) 910353 as deficient].

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

As a result of these examples, TVA undertook an extensive evaluation to identify additional cases where the vendor requirements were not specified in the MR work instructions. Initially, TVA reviewed a randomly selected sample of ten MRs initiated for work to be implemented on valves by the Construction organization since this population reflected the original concerns. No additional concerns were identified.

TVA noted, however, that the originally identified concerns were both generated by the Damaged, Loose, and Missing Hardware (DLMH) group which was formed to identify and disposition loose, missing, and damaged parts in the plant. Therefore, a further review of the MRs developed by the DLMH group was deemed warranted. As a result, the MRs and workplans generated in support of the DLMH program where work was performed on mechanical equipment (including valves, pumps and compressors, etc.) were reviewed to identify additional deficiencies regarding the improper application of approved vendor information. Of the approximately 130 DLMH MRs and workplans that were reviewed, 12 additional MRs were identified where vendor information was not specified in the work instructions. These discrepancies each involved the specification of manual torque values for tightening the loose components as determined from CPI-8.1.8-M-200D, "Fabrication and Installation of Piping (Mechanical Joints)," Appendix A, "Recommended Torque Values," rather than the approved vendor requirements.

ENCLOSURE 1

REPLY TO NOTICE OF VIOLATION
VIOLATION NO. 50-390/91-13-01

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED (Cont'd)

MRs have been generated to evaluate the impact of the potential overtorquing of these components. The appropriate corrective actions will be determined and implemented to ensure the capability of the specific equipment to perform their intended functions. These MRs are identified on PER WBPER 910353 which was initiated to disposition this issue. The MRs generated to correct the deficiencies are tracked separately and will be implemented following restart of construction activities. The corrective actions identified as a result of the evaluations will be completed in support of the applicable system turnover schedules.

Further, TVA reviewed approximately 30 MRs/work orders (WOs) completed by the Maintenance Organization to verify that vendor recommendations had been considered in developing the work instructions. Vendor information, as applicable to the work being performed, had been included.

Additionally, approximately 100 MRs worked by the Maintenance Organization since January 1990, which referenced the procedures for torquing (MI-0.14) and generic valve instructions (MI-0.2, MI-0.7, and MI-0.11), were identified. A random sample of 28 of this population was reviewed to identify the potential generic concern regarding body to bonnet torquing. Body to bonnet torquing was identified in five of these cases; three of these were for safety-related valves. The results of this review indicated that for the safety-related valves involving body to bonnet torquing, one MR contained torquing requirements as specified in the vendor manual, while the vendor manual for the other two MRs did not specify any torque requirements.

In-process MRs involving bonnet to body torquing were also reviewed. Three of the seven identified MRs included proper vendor torquing requirements. However, four of these MRs did not reference the vendor manual torque requirements as required.

A review of these MRs indicated that these four were initiated for work performed on identical valves controlled by the same vendor manual and were planned at the same time by the same planner. The valves were torqued to 90 ft-lbs versus 95 ft-lbs, as specified by the vendor. This is within the ten percent tolerance normally recognized by the industry and allowed by plant instructions. The planner involved and the planning group were reinstructed on the proper use of vendor manuals. The deviation from vendor requirements has been annotated on the four MRs to complete the quality assurance records.

In general, many of the MRs/WOs implemented by the Maintenance Organization utilize maintenance instructions to perform the work. There are approximately 595 maintenance instructions written to perform work. Most of these apply to safety-related equipment. The maintenance instructions for vendor specific components were written using vendor information as a developmental source or vendor information is used in conjunction with the generic maintenance instruction.

ENCLOSURE 1

REPLY TO NOTICE OF VIOLATION
VIOLATION NO. 50-390/91-13-01

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED (Cont'd)

Furthermore, an independent, internal, technical review, as well as a review conducted by the Quality Assurance organization, is performed for MRs/WOs planned within the Maintenance organization prior to their release for implementation.

A memorandum has been sent to the Maintenance Organization MR planners to provide written emphasis that vendor information is to be used when developing work instruction.

CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATION

In response to NRC's concern regarding the adequacy of TVA procedures regarding this issue, Modification/Addition Instruction (MAI) 4.2B, "Pipe Installation," which supersedes CPI 8.1.8-M-200D, has been revised to further emphasize that approved vendor requirements for torquing/tightening of components shall take precedence over those specified in this procedure, when available. The TVA Modifications personnel have been trained to this procedure. In addition, the activities required to support construction restart include specific task training for those applicable Modifications personnel regarding the implementing of procedures relative to the work control processes with emphasis placed on procedure adherence.

Additionally, TVA has previously implemented a comprehensive evaluation of the WBN site and engineering procedures that govern the receipt, review, distribution, control, and maintenance of vendor information through implementation of the Vendor Information Program (VIP) Corrective Action Program (CAP) Plan.

The objective of the VIP CAP is to provide assurance that vendor technical documents for safety-related equipment are current, complete, and appropriately updated for the life of the plant, and that information in these documents is appropriately used as input to TVA design output documents plant instructions, and procedures, and subsequently built into the plant. Completion activities and schedules for this CAP are reviewed regularly with NRC (TAC No. M71921).

Based on the extensive review of MRs performed by the Modifications and Maintenance organizations and the comprehensive verification activities implemented through the VIP CAP, TVA considers this issue to be adequately addressed to ensure appropriate implementation of vendor requirements through WBN procedures.

ENCLOSURE 1

REPLY TO NOTICE OF VIOLATION
VIOLATION NO. 50-390/91-13-01

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

TVA has initiated the work documents necessary to evaluate and repair/replace the potentially overtorqued components, as required. Required corrective actions to address the identified deficiencies regarding the incorrect vendor information will be completed following restart of construction activities in support of site system turnover dates.

DESCRIPTION OF VIOLATION EXAMPLE 2

Procedures were not followed, in that:

a. Licensee craftsmen performing the work on Maintenance Request A627606 failed to enter the TVA tag number and calibration due date for the torque wrench used to accomplish the work of the Maintenance Request.

b. For weld 0-070A-T027-01 on Workplan M-5767-1, the Weld Data Sheet shows the filler and cap of the weld being welded the day before the fit-up was signed-off (fit-up sign-off 2/2/90, filler and cap welded 2/1/90). The Welding Engineering Unit failed to properly verify the correct sequence of operations and dates.

c. Replacement cables 0-4PL-30-2298 and 0-4PL-30-2775 on Workplan K-M09615A-1 were not megger tested as required by CPI-8.1.8-E-100A, Revision 2.

ADMISSION OR DENIAL OF THE VIOLATION EXAMPLES

TVA admits the violation examples occurred as stated.

TVA RESPONSE EXAMPLE 2 (a)

REASON FOR VIOLATION EXAMPLE

This violation occurred due to a lack of attention to detail by the Modifications personnel involved with the initiation of MR A-627606 and with the implementation of the work requested on the MR. As noted in AI-9.2.3, "Maintenance Request Performance," the craftsman was required to ensure the torque wrench specified for implementing this MR was "of the proper range and type" and to record the calibration data in the MR package. A possible contributor to this violation was the incorrect indication by the MR initiator to specify on the MR planning checklist that the Measuring and Testing Equipment (M&TE) information was not required data to be recorded for the torque wrench.

ENCLOSURE 1

REPLY TO NOTICE OF VIOLATION
VIOLATION NO. 50-390/91-13-01

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

Since the torque requirements for the valves on MR-627606 were incorrect, the M&TE information is no longer applicable. MR A-604989 has been initiated to evaluate and repair/replace, as necessary, the valves identified in MR-627606. Recording the M&TE information is required by the WBN procedures (AI-9.2.3) when using a torque wrench.

The initial evaluation conducted to address the improper torque values specified in the workplans (discussed in Example 1 of this violation) also included a review of missing M&TE information, where required. No additional examples of this concern were identified. TVA considers this an isolated example; therefore, no additional programmatic corrective actions are deemed necessary.

CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATION

Plant Administrative Instruction (PAI) 10.13, "Maintenance Request Planning, Performance and Closure," is being issued to supercede AI-9.2.3. Construction restart activities planned to ensure successful implementation of construction work processes at WBN include training of the applicable Modifications personnel to the requirements of this procedure with particular emphasis placed on the importance of strict adherence to procedures. This will be completed prior to restart of construction activities in the field.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

TVA will be in compliance prior to restart of construction activities.

ENCLOSURE 1

REPLY TO NOTICE OF VIOLATION
VIOLATION NO. 50-390/91-13-01

TVA RESPONSE EXAMPLE 2 (b)

REASON FOR THE VIOLATION EXAMPLE

The second entry made by the foreman on Weld Data Sheet No. 0-070A-T027-01-2-0 has the wrong date recorded. The welder involved is identified by the coding of "6ZX." The inspection of welder 6ZX's tack welding was documented by the responsible foreman on February 1, 1990. A second entry was made by the same foreman for filler and cap (final) welding also on February 1, 1990. The fit-up hold point, however, was not accepted by welding quality control (QC) until February 2, 1990. A review of the welding operation sheet for weld 0-070A-T027-01 indicates that the foreman documented the acceptable fit-up on February 2, 1990, in the comment section. However, he incorrectly documented the performance of the final welding below as February 1, 1990.

The welding material requisition slip indicates that on February 1, 1990, welder 6ZX checked out eight pieces of filler material at 1430 and returned them at 1725 with only one rod partially used. On February 2, 1990, welder 6ZX checked out eight pieces of welding material at 0745 and returned only four unused rods. This provides an indication that the filler and cap weld was performed on February 2, 1990. Inspection Report W901293, documents QC's acceptance of the fit-up for the weld in question as well as an adjacent weld, 0-070A-T027-03-01, on February 2, 1990. The foreman concurred by noting in the comment section of both welds that the fit-up was checked and accepted on February 2, 1990. Therefore, it appears that the foreman mistakenly documented the performance of the final welding as February 1, 1990, rather than February 2, 1990, as the associated records indicate.

This violation example occurred due to a lack of attention to detail by the responsible foreman and the Welding Engineering Unit (WEU) engineer. Contributing to this violation was the failure by the WEU engineer to accurately review the final Welding Operation Sheet to verify the operations were performed and documented in accordance with the requirements of AI-9.4.2, "Controlling Welding, Brazing, and Soldering (WBS) Process" (Revision 15).

ENCLOSURE 1

REPLY TO NOTICE OF VIOLATION
VIOLATION NO. 50-390/91-13-01

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

As a result of this violation, a review of the associated welding documentation for the subject weld (i.e., Welding Material Requisition Slips, QC Fit-up and Visual Inspection Reports, as well as the foreman's comments provided on the Welding Operation Sheet) was performed. The results concluded that the foreman's documentation of the filler and cap welding was conducted on February 2, 1990. Additionally, TVA reviewed a random sample of approximately 50 Welding Operation Sheets for similar documentation errors. No problems were identified. Therefore, this is considered an isolated occurrence and no further programmatic corrective actions are considered necessary.

To correct this specific concern however, TVA has corrected the foreman's date to reflect the performance of the final filler and cap weld as February 2, 1990. Problem Evaluation Report WBPER 910356 was generated to document this concern. Corrective actions have been completed and the PER subsequently closed.

CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATION

The engineering personnel involved with this issue were retrained to the requirements of AI-9.4.2, "Controlling Welding, Brazing, and Soldering (WBS) Processes," with additional emphasis on the importance of attention to detail for verification of accurate weld inspections.

Additionally, activities required to support restart of construction include the retraining of the Modifications personnel. Specifically, this training includes Site Standard Procedure (SSP)-7.50, "Controlling WBS Processes", which supersedes AI-9.4.2.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

TVA is currently in full compliance.

ENCLOSURE 1

REPLY TO NOTICE OF VIOLATION
VIOLATION NO. 50-390/91-13-01

TVA RESPONSE EXAMPLE 2 (c)

REASON FOR VIOLATION EXAMPLE

A megger test for low voltage power cables is required to (1) verify that no gross damage was inflicted during the installation process and (2) verify, as a safety precaution, that the cable was accurately routed to prevent energizing equipment that is not properly protected. TVA has attributed the lack of performance of the megger tests for cables 0-4PL-030-2298 and 0-4PL-030-2775 to a lack of attention to detail by the Construction personnel involved with the implementation and closure of this workplan.

Specifically, the responsible engineer (RE) failed to identify the requirement to perform the megger test for these cables and did not identify the missing documentation for the required megger test during the closure process as specified by AI-8.8, "Control of Modification Work After Transfer." Although the "Cable Termination Sheets" were incorrectly annotated by the RE, the craftsman is responsible to follow the requirements of CPI-8.1.8-E-100A, "Termination, Splicing, and Repair of Low and Medium Voltage Cables," in that it specifies that "Prior to terminating cables, continuity, megger or high potential testing shall be performed by the craftsman and verified by the QC inspector." The QC inspector was not notified by craft that this inspection was required for these cables; therefore, no QC inspection for the megger test was documented.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

Cables 0-4PL-030-2298 and 0-4PL-030-2775 were energized and tested during performance of the Post Modification Test (PMT) for Workplan K-M09615. Cables 0-4PL-030-2298 and 0-4Pl-030-2775 are not safety-related and the service voltage of the subject cables is approximately equal to the required test voltage. The current magnitude under load, however, would be greater than that of the applied test voltage. During initial energization of the cables, no fault occurred and phase rotation of the motor was verified as correctly implemented. This test indicated that there was no compromise in cable integrity for these cables during the installation or termination process. Therefore, an additional megger test is not required.

The available individuals involved with this work were counseled on the importance of strict adherence to work instructions.

ENCLOSURE 1

REPLY TO NOTICE OF VIOLATION
VIOLATION NO. 50-390/91-13-01

CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATION

Additionally, the extent of this condition will be determined during the Safety Net Review (SNR) process, as documented in Significant Corrective Action Report (SCAR) WBN 900602SCA. The SNR is an ongoing effort that has as its objective, the discovery and correction of document deficiencies in open work documents before they are reflected in permanent plant installations.

Findings identified through the SNR process are tabulated, trended, categorized as to their significance, and dispositioned as part of the SNR. Corrective actions for this specific concern will be established, as necessary, and tracked with the closure of WBN 900602SCA.

As part of the activities required to support restart of construction, WBN Modifications employees (engineering and craft) are required to complete the "Construction Employee General Training" course which provides overall TVA expectations related to job performance. This training covers areas such as employee responsibilities, verbatim compliance with procedures, quality orientation, and prevention of equipment damage; and specific task training (electrical, concrete anchors etc.).

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

TVA will be in full compliance as tracked by the closure of WBN 900602SCA.

ENCLOSURE 2

LIST OF COMMITMENTS

1. Required corrective actions to address the identified deficiencies regarding the incorrect vendor information will be completed following restart of construction activities in support of site system turnover dates.

2. The extent of condition as well as the required corrective actions for Example 2 (c), lack of megger tests, will be implemented following completion of the Safety Net Review process as tracked by the closure of WBN 900602SCA.

3. Construction restart activities planned to ensure successful implementation of construction work processes at WBN include training of Modifications personnel with particular emphasis placed on the importance of strict adherence to procedures. A matrix has been developed to delineate Modifications' employees procedure training requirements. While this training is an ongoing process, TVA will complete the initial training prior to restart of construction activities.