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

JAN 0 4 1995

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. 50-390, 391/94-73 - REPLIES TO NOTICE OF VIOLATIONS AND NOTICE OF DEVIATION

The purpose of this letter is to provide a reply to Notice of Violations 390/94-73-01 and 390/94-73-02 and Deviation 390/94-73-03 cited in the subject inspection report. Violation 390/94-73-01 identifies inadequate reviews resulting in technical errors in Preoperational Test Instructions (PTI)-70-02, PTI-32-02, Temporary Operating Plan (TOP)-70-01, and TOP-82-02. Violation 390/94-73-02 identifies a failure to follow clearance procedures. The deviation involved a commitment to revise plant procedures in order to prevent or mitigate inadvertent dilution while shut down.

Enclosure 1 to this letter addresses the violations and deviation as described in the inspection report and the corrective actions taken by TVA. Enclosure 2 contains a summary of commitments made in this letter.

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

Sincerely,

Dwight E. Nunn
Vice President
New Plant Completion
Watts Bar Nuclear Plant

Enclosures
cc: See page 2

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ENCLOSURE 1

WATTS BAR NUCLEAR PLANT UNIT 1
RESPONSE TO NRC'S DECEMBER 5, 1994, LETTER TO TVA
NRC VIOLATIONS 390/94-73-01, 390/94-73-02
AND DEVIATION 390/94-73-03

DESCRIPTION OF VIOLATION, 390/94-73-01

"10 CFR 50, Appendix B, Criterion V, as implemented by Tennessee Valley Authority Nuclear Quality Assurance (NQA) Plan, TVA-NQA-PLN 89-A, Revision 4, Section 6.1, requires that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstance and shall be accomplished in accordance with these instructions, procedures, or drawings.

Startup Manual Procedure (SMP) 3.0, Joint Test Group (JTG) Charter, Revision 8, Section 2.2, JTG Responsibilities, specifies primary responsibilities to its members for verifying that test objectives, acceptance criteria, testing methodology, and calculations comply with approved design output documents, licensee commitments, and the Final Safety Analysis Report (FSAR) and have been adequately included in the test instructions.

Contrary to the above, as of November 4, 1994, the JTG failed to implement their responsibilities fully, in that the NRC identified the following deficiencies in approved Preoperational Test Instructions (PTIs) and Temporary Procedures used to support testing.

Example 1:

1. Procedure PTI-070-02, Component Cooling Water Flow Balance, Revision 0, allowed operation of the component cooling water system (CCS) to flow rates as high as 9000 gallons per minute (gpm). System Description Document (SDD) N3-70-4002, Component Cooling System, stated that the CCS pumps are limited to a maximum of 6800 gpm per pump. Furthermore, test methods for flow balancing and throttling did not establish limits to ensure that maximum design flow rates for individual components were not exceeded during testing. Additionally, engineering document QDCN-32131-A dated August 8, 1994, advised Startup (SUT) that the test must use test equipment, rather than installed instrumentation, to demonstrate that flow requirements were met. This method was not incorporated in the approved PTI."

ADMISSION OF VIOLATION - EXAMPLE 1

TVA agrees with the violation example as stated.

REASON FOR THE VIOLATION - EXAMPLE 1

The violation example resulted from inattention to detail on the part of the author and reviewers of PTI-70-02.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED - EXAMPLE 1

The author of the PTI-70-02 is no longer on site. The person currently responsible for PTI-70-02 has been made aware of the violation, the types of discrepancies identified, and has been involved with their resolution.

The specific issues cited in the violation will be addressed in a revision of PTI-70-02. In addition, the revision to PTI-70-02 will address the uncited inspection report comments and the findings of TVA's independent review of the test procedure. The independent review had been conducted during the time frame of the violation to identify whether other problems similar to the NRC findings existed. The discrepancies and the changes that will be incorporated do not affect the acceptance criteria of the test.

With the exception of Examples 2 and 3 of the violation, TVA considers this violation example to be limited to PTI-70-02. This conclusion is based on the results of the preoperational test procedure improvement initiatives since completion of hot functional testing in June 1994. These initiatives have significantly improved the quality of the preoperational test procedures. The improved tests were beneficial to successful completion of the Integrated Test Sequence in November 1994.

CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATION - EXAMPLE 1

This violation was discussed with the involved personnel including members of the Joint Test Group to emphasize the importance of attention to detail during preparation of test procedures.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED - EXAMPLE 1

With respect to this violation example, TVA will be in compliance when PTI-70-02 has been revised. PTI-70-02 will be revised by January 31, 1995.

Example 2:

2. "Procedure PTI-032-02, Loss of Air Test, was stated to accomplish testing of the safety-related auxiliary control air system to demonstrate redundancy, capacity, train independence, and other attributes specified in Regulatory Guide (RG) 1.68.3, Preoperational Testing of Instrument and Control Air Systems, April 1982. The applicant committed to perform these tests in the FSAR, Section 14.2.7.

   Procedure PTI-032-02, approved August 31, 1994, failed to test adequately for attributes C.7, C.8, C.9, and C.10 of RG 1.68.3. These attributes were single failure criteria, response of all safety-related valves to gradual and partial reductions in air pressure, independence from other air supplies, and transient response."

ADMISSION OF VIOLATION - EXAMPLE 2

TVA agrees with the violation example as stated.

REASON FOR THE VIOLATION - EXAMPLE 2

The violation resulted from misinterpretation of the cited requirements of Regulatory Guide 1.68.3 by the author of PTI-32-02, and inattention to detail by reviewers of the test to assure that specific test commitments and regulatory guidance specified in FSAR Chapter 14 were adequately addressed by the test. The failure to pursue clarification on ambiguous wording in the regulatory guide contributed to the violation.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED - EXAMPLE 2

TVA has corrected the cited test procedure deficiencies. These corrections have been reviewed with onsite NRC personnel.

TVA considers the violation example to be limited to PTI-32-02. The author of the test has carefully re-reviewed the regulatory guides (or portions thereof) referenced in other PTIs he has authored and concluded that any ambiguous requirements were adequately resolved.

CORRECTIVE STEPS TO BE TAKEN TO AVOID FURTHER VIOLATION - EXAMPLE 2

To prevent recurrence in any new preoperational test procedures, or changes thereto, this violation has been communicated to the involved personnel including members of the Joint Test Group to re-emphasize the importance of verifying that FSAR Chapter 14 test commitments are adequately addressed within the test procedure, or challenged if unclear or ambiguous.

To prevent recurrence in preoperational test procedures that have already been performed, SMP-15.0, "Test Commitment Matrix", requires a post-test review of completed test procedures/instructions to confirm that the FSAR Chapter 14 test commitments have been satisfied. The Startup management expectations for careful review of commitments (discussed above) have also been communicated to Startup and Joint Test Group personnel involved with preparation, review, and approval of these completed test packages.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED - EXAMPLE 2

With respect to this violation example, TVA is full compliance.

Example 3:

3. "Procedure SMP-12, Temporary Operating Plan, Revision 5, was established to provide instructions for creation of Temporary Operating Plans (TOPs) to align components for PTIs. Procedure SMP-12 failed to provide adequate guidance to ensure that resulting TOPs were complete and accurate. Procedure TOP-70-01, Component Cooling System, Revision 4, failed to include valves 1-ISV-70-798 through 1-ISV-70-801, controlling CCS flow to the centrifugal charging pump (CCP) gear oil coolers. Procedure TOP-82-02, Diesel Generator 1B-B, Revision 2, failed to include two instrument root valves, 1-ISIV-82-5071B and 1-ISIV-5070B. Additionally, TOP 82-02 provided ambiguous direction for aligning start air motor isolation valves 1-ISV-82-520A-B, 1-ISV-528A-B, 1-ISV-554B-B, and 1-ISV-562B-B, excess flow check valves 1-CKV-82-755B, 1-ISV-756B, 1-ISV-753A, and 1-ISV-754A, and air dryer purge adjust valve N."

ADMISSION OF VIOLATION - EXAMPLE 3

TVA agrees with the violation example as stated.

REASON FOR THE VIOLATION - EXAMPLE 3

The Temporary Operating Plans submitted for use by Operations had not been reviewed in sufficient detail to identify the types of discrepancies cited in the violation. Procedure SMP-12.0, "Temporary Operating Plans", did not require reviews (e.g., walkdowns) to the level of detail necessary to identify these types of discrepancies.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED - EXAMPLE 3

The discrepancies listed in the inspection report were corrected by issuing change notices for the affected Temporary Operating Plans.

CORRECTIVE STEPS TO BE TAKEN TO AVOID FURTHER VIOLATION - EXAMPLE 3

The Temporary Operating Plans used to perform and support the Integrated Test Sequence were walked down to identify and resolve discrepancies similar to those listed in the inspection report.

In addition, procedure SMP-12.0 has been revised to require similar walkdowns of new Temporary Operating Plans, and revisions to existing Temporary Operating Plans. This revision also ensures that if an existing safety-related Temporary Operating Plan is to be used for future system alignment in support of testing, it will be walked down prior to performing the alignment. Use of Temporary Operating Plans is being phased out as systems are turned over for plant ownership.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED - EXAMPLE 3

With respect to this violation example, TVA is currently in full compliance.

DESCRIPTION OF VIOLATION, 390/94-73-02

"10 CFR 50, Appendix B, Criterion V, as implemented by Tennessee Valley Authority Nuclear Quality Assurance (NQA) Plan, TVA-NQA-PLN 89-A, Revision 4, Section 6.1, requires that activities effecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstance and shall be accomplished in accordance with these instructions, procedures, or drawings.

Site Standard Practice (SSP) 12.03, Equipment Clearance Program, establishes the requirements for the establishment, modification, and releases of equipment clearances.

Step 2.3.g.4 of Procedure SSP-12.03 states that the on-shift shift operations supervisor SOS ensures a review is performed of requests to modify existing clearances, to ensure adequacy of clearance boundaries using appropriate references. Step 2.5.B of Procedure SSP-12.03 states that components tagged as clearance boundaries should not be released for testing until work is complete or equipment is placed in a safe condition.

Contrary to this requirement:

> On October 17, 1994, Work Order (WO) 941279600 was added to Clearance Order 0-94-1182 without an adequate clearance boundary review. NRC identified that the clearance was written for the B-B electrical board room chiller rather than the A-A chiller requested by the WO.
>
> On October 18, 1994, the NRC observed that the clearance 0-94-932 was released on valve 0-ISV-32-3003 without work being completed. When the valve was opened, compressed air was released, revealing that downstream components had not been reconnected."

ADMISSION OF VIOLATION

TVA agrees with the violation as stated.

REASON FOR THE VIOLATION

The reason for the violation was personnel error. Operations personnel exhibited inferior judgement in failing to adequately review and verify information available during implementation of the clearance process. Inadequate communications between Startup Support personnel and Operations personnel resulted in an inappropriate release of a clearance.

Example 1:

> A foreman submitted information to the Work Control Group (WCG) such that a clearance request was prepared and processed which contained a work order (WO) number (94-12796-00) for Train A and a recommended clearance boundary hold order [HO] number [0-94-1182] for Train B. The work description was correct for the identified WO. The Operations work control representative reviewed the requested work for impact on operational requirements and

recommended its removal from service. The tagging office Assistant Shift Operations Supervisor (ASOS) failed to review the descriptive information contained on the clearance request form and erroneously added the work document to the inappropriate HO.

Example 2:

Inadequate communications between two foremen and the Shift Operations Supervisor (SOS) permitted the temporary release of a HO without the work being complete. The foremen did not reach a common understanding of the scope of work requiring the release and the SOS failed to determine the status of the work prior to the release.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

Example 1:

On discovery of the error in processing the clearance, the work was released from HO #0-94-1182 (EBR chiller B-B) and added to HO #0-94-0412 (EBR chiller A-A) before any actual work had commenced.

The ASOS involved was appropriately disciplined in accordance with standard disciplinary practice and counselled regarding his responsibilities relative to the clearance boundary reviews. The incident was discussed with the foreman involved and he was instructed to be more attentive to the details of his actions.

Example 2:

The isolation valve (0-ISV-32-3003) was immediately closed and the HO reinstated. The incident was discussed with the SOS involved. Although not specifically required by procedure, the SOS should have made an effort to ensure the equipment was acceptable to return to service before releasing the clearance. The foreman releasing the HO received appropriate disciplinary action for failure to fulfill his obligations and was counselled on his responsibilities regarding the clearance process and the potential consequences of inappropriate action.

TVA previously identified other clearance related incidents at Watts Bar and initiated Significant Corrective Action Report WBSCA930217 to evaluate, investigate and correct any common causes, and evaluate the adequacy of previous corrective actions concerning the clearance program or its implementation. These two incidents have been included as additional examples of HO related incidents which are being evaluated in WBSCA930217. In addition, Operations conducted standdown meetings with the groups involved in the processing of clearances to review the responsibilities and expectations of the clearance process. Details of these two examples of the violation were also discussed in the shift briefings with personnel being instructed to be more attentive to the details of their activities.

CORRECTIVE STEPS TO BE TAKEN TO AVOID FURTHER VIOLATION

Personnel authorized to work as tagging ASOS will be counselled on the importance of verifying clearance request information against existing HOs. This will be complete by January 31, 1995.

SSP-12.03 will be changed to require verification by Operations of work completion prior to release of the HO and require a second verification of clearance boundary adequacy. The procedure change will be effective by February 15, 1995.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

With respect to the specific violation, TVA will be in full compliance by February 15, 1995.

DESCRIPTION OF DEVIATION, 390/94-73-03

"In the enclosure to 10 CFR 50.55(e) Final Report WBN NEB 8010, Possible Inadvertent Boron Dilution, dated June 9, 1982, TVA stated that they had reviewed the Westinghouse recommended operating procedures to prevent or mitigate an inadvertent boron dilution at shutdown and committed to revise the appropriate Watts Bar operating instructions by January 2, 1983, to incorporate the procedures.

In deviation from the above, as of November 4, 1994, Watts Bar Abnormal Operating Instruction (AOI) 34, Immediate Boration, had not been revised to incorporate the Westinghouse operating procedures."

ADMISSION OF DEVIATION

TVA agrees with the deviation as stated.

REASON FOR THE DEVIATION

The reason for the deviation was that prior to December 1991, WBN did not have a program to ensure programmatic commitments were effectively maintained in site documents.

The commitment made to implement the actions and methodology recommended by Westinghouse to minimize the effect of an inadvertent boron dilution event was incorporated into the appropriate instructions. Subsequent Westinghouse guidelines have also been implemented. NRC's review of the implementation of initial Westinghouse recommendations and the subsequent closure of CDR 390, 391/80-80 is documented in Inspection Report 390, 391/83-08.

The condition which is addressed in Notice of Deviation 390/94-73-03 is the difference between the July 8, 1980, Westinghouse recommendations and the operator actions currently defined for response to an identified dilution event. Specifically, the actions include boration using the normal boration flow path and/or the emergency boration flow path prior to utilizing the Refueling Water Storage Tank (RWST) flow path as described in the July 8, 1980, letter. The basis for implementing these actions prior to implementing the recommended Westinghouse action is that there is a higher concentration of Boric Acid available to be injected to the charging pump suction through these flow paths. Initiation of this action was also considered appropriate due to the time available for the operator to respond to the event, approximately 15 minutes. This sequence of response actions has been endorsed by Westinghouse in a letter dated November 3, 1994.

Although the initial Westinghouse recommendations were implemented, the commitment made to implement them was programmatic in nature. TVA should have supplemented the final report to CDR 390, 391/80-80 to define the additional Operator actions which TVA incorporated to address this event.

CORRECTIVE STEPS TO BE TAKEN TO AVOID FURTHER DEVIATION

The need to ensure continuing conformance to programmatic commitments has been previously documented and was included as an element of the Design Baseline and Verification Program (DBVP) Corrective Action Plan (CAP). Specifically, the verification and control of commitments is addressed in the Licensing Verification area of the CAP. Revision 4 of the DBVP CAP addressed a series of changes in the Licensing Verification area and documented how the commitment verification process of the Program for Assurance of Completion and Assurance of Quality (PAC/AQ) would be used to meet the objectives of the DBVP CAP.

The element of ensuring continuing conformance with programmatic commitments was addressed in the CAP revision. Specifically, it stated that the programmatic commitments cataloged in the PAC/AQ program would be source noted in the site document which implements the commitment. This process would tie the requirement statement in the site document to the document which was submitted to NRC committing to the action.

The back-fitting of source notes in site documents is tracked as a unique commitment required for closure of the DBVP CAP. The implementation of the source noting process tied the implementing documents to the site organization responsible for the document. A listing of commitments was submitted to each organization with instructions to establish that each commitment was currently implemented and to take action to place the source note in the implementing document. If it is found that the commitment is not being implemented as stated, the responsible organization is to provide to Site Licensing input for development of an updated report to NRC. Currently, this activity is approximately 50 percent complete.

The commitment regarding inadvertent boron dilution made in the Final Report for WBN NEB 8010, was captured by the PAC/AQ program and cataloged as commitment 55E-0156. At the time the cited condition was discovered, commitment 55E-0156 was tied to the Operations organization and was tracked as an item that remained to be dispositioned.

The corrective measures defined in the DBVP CAP were developed to address issues such as the cited deviation and to ensure that adequate controls are in place to ensure ongoing conformance to programmatic commitments. Therefore, no additional corrective actions are required based on this Notice of Deviation.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

With respect to the deviation example, full compliance was achieved with Revision 4 of the DBVP CAP and the defining of the control process for programmatic commitments.

ENCLOSURE 2

SUMMARY OF COMMITMENTS

VIOLATION 390/94-73-01

1. The specific issues cited in the violation will be addressed in a revision of PTI-70-02. In addition, the revision to PTI-70-02 will address the uncited inspection report comments and the findings of TVA's independent review of the test procedure. This revision will be completed by January 31, 1995.

VIOLATION 390/94-73-02

1. Personnel authorized to work as tagging ASOS will be counselled on the importance of verifying clearance request information against existing HOs. This will be complete by January 31, 1995.

2. SSP-12.03 will be changed to require verification by Operations of work completion prior to release of the HO and require a second verification of clearance boundary adequacy. The procedure change will be effective by February 15, 1995.