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William J. Museler
Site Vice President, Watts Bar Nuclear Plant

AUG 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, 391/93-43 - REPLIES TO NOTICES OF VIOLATIONS AND NOTICE OF DEVIATION

The purpose of this letter is to respond to Inspection Report 390, 391/93-43 dated July 23, 1993, which identified two violations and one deviation related to NRC's review of Preoperational Test Instruction (PTI-32-01, Compressed Air System). Violation A related to a failure to include adequate air quality sampling in the PTI. Violation B related to a failure to translate all requirements of Regulatory Guide 1.68.3 in design output documents. The deviation related to failure to implement testing commitments within Test Scoping Documents.

TVA recognizes the importance of properly identifying and implementing test program requirements and commitments and notes that a number of initiatives are being developed to this end, some of which are discussed herein. We are taking additional measures to assess and strengthen the overall program performance as recently discussed with you in response to the July 1993 inspection. We would appreciate an opportunity to discuss these matters in the near future.

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

Very truly yours,

D E Moody for

William J. Museler
Enclosures

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AUG 23 1993

cc (Enclosures):
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ENCLOSURE 1
WATTS BAR NUCLEAR PLANT
REPLY TO NRC'S JULY 23, 1993 LETTER TO TVA
VIOLATIONS 390, 391/93-43-01 AND 390, 391/93-43-02
AND DEVIATION 390, 391/93-43-03

Violation A, 50-390, 391/93-43-01:

10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," as implemented by TVA Nuclear Quality Assurance (NQA) Plan, TVA-NQA-PLN89-A (Revision 3), in Section 6.1, 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. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

Startup Manual Procedure 8.0 (Revision 8, dated May 21, 1993), "Administration of Preoperational Test Procedures," in Section 2.1.E requires that the following attribute will be verified by preoperational test instruction performance: FSAR Chapter 14 test summary criteria specific to a design feature or function."

The stated objective of FSAR Chapter 14, Table 14.2-1, "Compressed Air System Test Summary," is to demonstrate the capability of the Compressed Air System to provide regulated air that is clean, dry, and oil free to instrumentation and control loads during normal plant operation and to vital equipment required for safe shutdown under design basis event conditions.

Preoperational Test Scoping Document TVA-27, "Control Air System," (Revision 3, Change Number 2, dated May 12, 1993) in Section 8.0 and Table 9-5 provides the acceptance criteria for the air cleanliness and oil free requirements of the Compressed Air System.

Contrary to the above, Preoperational Test Instruction 32-01 (Revision 0, dated May 17, 1993), "Control and Auxiliary Air System," did not contain test methods, test conditions and acceptance criteria to verify that the Control and Auxiliary Control air system design features are capable of providing regulated air that is clean and oil free.

Reason For Violation

The omission was caused by a misinterpretation of Startup Manual Procedure (SMP) 8.0 test content requirements on the part of preparers and reviewers of PTI 032-01. These personnel considered that only the requirements contained in the Methods and Acceptance Criteria sections of the Test Summary required specific verification by test steps, especially since air sample testing would occur during generic testing activities for System 32. The test objective item for air sampling was not addressed.

Corrective Steps Taken And Results Achieved

PTI 032-01 has been changed to include requirements for testing the system capabilities for providing air that is clean, dry, and oil free.

Corrective Steps Taken To Avoid Further Violations

WBN will perform a review of FSAR Chapter 14 Test Summaries and develop a cross-reference of the Test Summary Objectives, Methods, and Acceptance Criteria with the implementing PTIs by September 30, 1993 to verify that the test commitments are implemented.

Date When Full Compliance Will Be Achieved

With respect to the identified discrepancies, WBN is in compliance.

Violation B, 50-390,391/93-43-02:

10 CFR 50 Appendix B, Criterion III, "Design Control," as implemented by TVA Nuclear Quality Assurance (NQA) Plan, TVA-NQA-PLN 89-A (Revision 3), in Section 7.2, requires that measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2 and as specified in the license application, for those structures, systems, and components to which Appendix B applies are correctly translated into specifications, drawings, procedures, and instructions. These measures shall include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled.

Engineering Administrative Instructions EAI-5.02 (Revision 3 dated September 10, 1992), "Preoperational and Acceptance Testing," in Appendix B, "Test Scoping Document Format and Content," and Appendix C, "Test Scoping Document Sources of Information," requires that Nuclear Engineering prepare design output documents (i.e., Test Scoping Documents) for structures, systems and components important to safety and that they are tested under the Watts Bar Preoperational Test Program to verify they can accomplish their intended functions. The test scoping document is used by the Startup and Test Group in the preparation of detailed preoperational test instructions.

Test Scoping Documents TVA-27 (Revision 3, Change 2, dated May 12, 1993), "Control Air System," and TVA-26 (Revision 2, Change 2, dated May 12, 1993), "Control and Auxiliary Control Air System," identify the tests for these compressed air systems. In Section 14.2.7 of its FSAR, the licensee committed to develop and conduct a test program in accordance with Regulatory Guide (RG) 1.68.3, "Preoperational Testing of Instrument and Control Air System," with certain exceptions.

Contrary to the above, on June 30, 1993, design controls and design output documents TVA-27, "Control Air System," and TVA-26, "Control and Auxiliary Control Air System," were determined to be inadequate in that the following tests of Section C to Regulatory Guide 1.68.3 (dated April 1982), "Preoperational Testing of Control Air Systems," had not been translated into design output documents.

C.5 Establish by appropriate measurements or observations that the total air demand at normal steady state conditions, including leakage from the system, is in accordance with design.

C.7 Verify by test that redundant components and air supplies are provided in the facility design to meet the single failure criterion. (In this case the pneumatic air supply is the mechanical part of C.7 which is not being tested for single failure criterion.)

C.8 Testing should verify that the backup supplies for the protected loads supplied by the system (e.g., accumulators) will maintain sufficient air pressure to permit these loads to perform their design function.

Reason For Violation

The violation resulted from a lack of adequate design review. During late 1992 and early 1993, TVA was finalizing proposed changes to FSAR Chapter 14 to address NRC questions on Amendment 69. These proposed changes included delineation that the Compressed Air System would be tested in accordance with the more current Regulatory Guide (RG)-1.68.3 instead of RG-1.80. Prior to Amendment 69, WBN's FSAR Chapter 14 invoked RG-1.80 for testing requirements for the Compressed Air Systems. Although WBN's FSAR Chapter 14 was revised and issued to reflect the decision to implement RG-1.68.3, the testing documents and other design output documents were not reviewed and revised accordingly to ensure the testing requirements of RG-1.68.3 were appropriately implemented in the test program.

Corrective Steps Taken and Result Achieved

WBN is initiating revisions to Engineering Test Scoping Documents (TSDs) to include appropriate preoperational testing requirements for RG-1.68.3, Regulatory Positions C.5, C.7, and C.8. This task is expected to be complete by September 20, 1993.

A review of regulatory guides applicable to WBN determined that RG-1.80 is the only regulatory guide specific to testing that has been superseded. However, a review of the regulatory guides listed in FSAR Chapter 14, Section 14.2.7, "Conformance of Test Program with Regulatory Guidance," is underway to assure that regulatory guides invoked for testing have been appropriately implemented within WBN TSDs, unless otherwise exempted as described in

Chapter 14, Section 14.2.7. This action will be completed in accordance with the compliance schedule given below.

Corrective Steps To Be Taken To Avoid Further Violations

As a result of recent similar test commitment concerns identified by NRC (Inspection Report 50-390, 391/93-53), the following actions will be performed to ensure TVA's testing commitments as described in the FSAR, test scoping documents, and NRC correspondence are identified and consistently implemented:

1) For test instructions not yet authorized to begin testing, TVA will perform a review to ensure the current Chapter 14 test abstract objectives, prerequisites, methods, and acceptance criteria are addressed consistently within TSDs.

2) For test instructions not yet authorized to begin testing, TVA will ensure that preoperational testing requirements contained in other FSAR chapters are consistent with Chapter 14 abstracts and appropriately implemented within TSDs.

3) Additionally, to ensure TSDs remain current, TVA will review (and modify as necessary) WBN's process for incorporating revised Chapter 14 abstracts into test scoping documents by September 20, 1993.

4) By September 27, 1993, TVA will review historical commitments made in formal correspondence to NRC which relate to preoperational testing to assure items are addressed by the current test program or are properly dispositioned.

Date When Full Compliance Will Be Achieved

For PTIs currently under NRC review or approved by JTG before September 11, 1993, actions 1 and 2 will be complete prior to test authorization for the PTI. For PTIs approved by JTG on or after September 11, 1993, actions 1 and 2 will be complete prior to JTG approval of the associated Preop test.

Deviation 50-390,391/93-43-03:

Licensee FSAR (Amendment 74) Chapter 14.0, in Section 14.2.7 (paragraph 7) documents the commitment to Regulatory Guide (RG) 1.68.3 (dated April 1982), "Preoperational Testing of Instrument and Control Air Systems."

RG-1.68.3 in Regulatory Position C.3 specifies that air dryer units be tested for proper functioning and the appropriate differential pressure be verified.

In a revised response dated July 12, 1990, to NRC Generic Letter 88-14 (dated August 8, 1988), "Instrument Air Supply System Problems Affecting Safety Related Equipment," TVA committed to perform both a rapid and gradual loss of air test for safety-related valves supplied by the Compressed Air System.

Contrary to the above, test scoping document, TVA-27 (Revision 3, Change 1, dated April 8, 1993), "Control Air System," deleted the commitment to perform differential pressure testing across the air dryer units as specified by Regulatory Position C.3 to RG-1.68.3.

In addition the rapid loss of air test committed to in the TVA, Watts Bar letter of July 12, 1990, has not been translated into a test scoping document for System 32, Compressed Air System.

Reason For Deviation

The deviation occurred as a result of inadequate design review and attention to detail associated with changing TVA's testing commitments made to NRC. In TVA's July 12, 1990 response to Generic Letter 88-14, WBN committed to perform a fast and a slow loss of air test. However, in January 1993, TVA provided NRC with proposed changes to FSAR Chapter 14 (in response to NRC questions) which exempted testing for a sudden loss of air test based on an earlier (1984) apparent acceptance by NRC of such an exception. At the same time, WBN issued a revised Test Scoping Document for the Compressed Air System consistent with this test exemption for a sudden loss of air test. TVA failed to realize this change affected commitments made under Generic Letter 88-14 and therefore required discussion with the staff. In addition, as a result of inattention to detail, WBN deleted requirements to perform differential pressure testing of air dryers and afterfilters from Test Scoping Document TVA-27 without notifying NRC of this exception from RG-1.68.3.

Corrective Steps Taken And Results Achieved

TVA has revised Scoping Documents TVA-27 and PTI 32-01 to perform pressure drop testing of the air dryers and afterfilters for both the Control Air System and the Auxiliary Control Air System.

Corrective Steps Taken To Avoid Further Deviations

TVA will perform Unit 1 preoperational air loss tests in full compliance with RG-1.68.3, Regulatory Position C8. This decision will be reflected by appropriate revisions to the FSAR and test scoping documents by September 10, 1993.

Additional actions are being taken to ensure that preoperational test program commitments are identified and properly implemented as discussed in TVA's response to Violation 390, 391/93-43-02.

Date When Corrective Action Will Be Complete

Corrective action will be completed by September 10, 1993.

ENCLOSURE 2
LIST OF COMMITMENTS

The following commitments were made in this submittal:

Violation 390, 391/93-43-01

1. WBN will perform a review of FSAR Chapter 14 Test Summaries and develop a cross-reference of the Test Summary Objectives, Methods, and Acceptance Criteria with the implementing PTIs by September 30, 1993.

Violation 390, 391/93-43-02

1. WBN is initiating revisions to Engineering Test Scoping Documents to include appropriate preoperational testing requirements for RG-1.68.3, Regulatory Positions C.5, C.7, and C.8. This task is expected to be complete by September 20, 1993.

2. A review of the regulatory guides listed in FSAR Chapter 14, Section 14.2.7, is underway to assure that regulatory guides invoked for testing have been appropriately implemented within WBN Test Scoping Documents, unless otherwise exempted as described Chapter 14, Section 14.2.7.

3. For test instructions not yet authorized to begin testing, TVA will perform a review to ensure the current Chapter 14 test abstract objectives, prerequisites, methods, and acceptance criteria are addressed consistently within TSDs.

4. For test instructions not yet authorized to begin testing, TVA will ensure that preoperational testing requirements contained in other FSAR chapters are consistent with Chapter 14 abstracts and appropriately implemented within TSDs.

5. To ensure TSDs remain current, TVA will review (and modify as necessary) WBN's process for incorporating revised Chapter 14 abstracts into test scoping documents by September 20, 1993.

6. By September 27, 1993, TVA will review historical commitments made in formal correspondence to NRC which relate to preoperational testing to assure items are addressed by the current test program or are properly dispositioned.

   Schedule for Items No. 2, 3, and 4

   For PTIs currently under NRC review or approved by JTG before September 11, 1993, these actions will be complete prior to test authorization for the PTI. For PTIs approved by JTG on or after September 11, 1993, these actions will be complete prior to JTG approval of the associated Preop test.

Deviation 390, 391/93-43-03

1. TVA will perform Unit 1 preoperational air loss tests in full compliance with RG-1.68.3, Regulatory Position C8. This decision will be reflected by appropriate revisions to the FSAR and test scoping documents by September 10, 1993.