

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

6N 38A Lookout Place

AUG 06 1990

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

Gentlemen:

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

WATTS BAR NUCLEAR PLANT (WBN) - NRC INSPECTION REPORT NO. 390, 391/90-09 -
REPLY TO NOTICE OF VIOLATION AND NOTICE OF DEVIATION

TVA has reviewed the subject inspection report and notices of violation and deviation and provides the enclosed responses. Enclosure 1 provides our response to the notice of violation. Enclosure 2 provides our response to the notice of deviation. Enclosure 3 lists the commitments made in this submittal.

The delay in submitting this response was discussed with Ken Barr on July 23, 1990. If there are any questions, please telephone P. L. Pace at (615) 365-8527.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



Mark O. Medford, Vice President
Nuclear Technology and Licensing

Enclosures
cc: See page 2

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U.S. Nuclear Regulatory Commission

AUG 06 1990

cc (Enclosures):

Ms. S. C. Black, Deputy Director
Project Directorate II-4
U.S. Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852

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

ENCLOSURE 1

RESPONSE TO NRC NOTICE OF
VIOLATION 390/90-09-03

1.0 Description of Violation

During the Nuclear Regulatory Commission (NRC) inspection conducted from March 17 through April 20, 1990, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix (1990), the violation is issued below:

Part 50 of Title 10 of the Code of Federal Regulations, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," is implemented in part by the Nuclear Quality Assurance Manual (NQAM), Part 1, Section 2.5, Revision 2, which states 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. The Quality Assurance Topical Report, TVA-TR75-1, Revision 10, further implements 10 CFR 50, Appendix B, and commits to ANSI N18.7-1976, which, in part, prescribes design change and configuration control requirements. Volume 4, Section V, paragraph 2.8.3, of the Watts Bar Nuclear Performance Plan [NPP] requires that design changes be accomplished using the package concept and requires that plant modifications be complete and accepted by Quality Control prior to modifying the affected drawings and documents. ASME Section III, articles NB-6113 and ND-6110, are the applicable code requirements for hydrostatic testing and require fabricated piping to be hydrostatically tested prior to operation.

Contrary to the above, Administrative Instruction [AI]-8.8, "Design Control" [sic, this AI is actually entitled "Control of Modification Work After Transfer"], was not appropriate in that it allowed plant drawings and procedures to be updated prior to completion of hardware modifications in the plant. As a result, on February 23, 1990, configuration controlled control room drawings showed an incomplete Essential Raw Cooling [Water] System anti-cavitation modification to the "C" component cooling water heat exchanger as being complete, and yet the system was in operation without having been hydrostatically tested, with questionable structural supports, and with the electrical portion of the modification incomplete. In addition, relief valve 1-67-1025D was pressurized and in use prior to any hydrostatic testing having been performed on the modified piping installation.

This is a Severity Level IV Violation (Supplement II) and applies to Unit 1.

2.0 Admission or Denial of Violation

TVA admits the violation occurred regarding the effectiveness of implementation of the commitments in the NPP, Volume 4, Section V, paragraph 2.8.3. However, TVA considers the WBN method for hydrostatic testing to be in compliance with the ASME Code. A discussion of the TVA position on hydrostatic testing is provided as Attachment 1.

3.0 Reason for Violation

The process described in AI-8.8 for completion of modifications has not always been effective for ensuring a controlled and coordinated turnover¹ of equipment from the construction organization to operations subsequent to or during modification activities. Although the notice of violation is accurate in describing the requirements imposed by NPP Volume 4, Section V, paragraph 2.8.3 for design change control, this process does not preclude the use of discipline-based (mechanical, civil, electrical, etc.) workplans and the practice of releasing completed work covered under these workplans prior to completion of the entire modification. The philosophy of the WBN program is that the portion of work released to operations is complete. That is, the physical work has been performed and verified, control room drawings have been updated, and the operating instructions are in place as necessary. In the cited example, the mechanical portion of the modification was complete and available for full flow conditions even though the balance of the modification was incomplete (e.g., the hydrostatic test had not been performed, temporary supports were in place, and the electrical portion was incomplete).

The reason for the violation was that TVA had not fully anticipated the complications involved with maintaining operational configurational control of the plant concurrent with implementation of large numbers of bulk modifications. The unique controls needed for this situation can be difficult to administer and have not been well defined and implemented in all cases.

The result has been a process that is not always effective for turnover of modified equipment to operations upon completion of modifications. The weaknesses in the turnover process consisted of (1) insufficient procedural clarity relative to the sequence and logic associated both with removal of clearances (hold orders) on modified equipment and with marking up control room drawings and operations procedures upon completion of the modification, (2) inconsistent marking of control room drawings (i.e., different color, depiction of temporary alterations, and modifications shown outside drawing boundaries), and (3) difficulty with interpretation of control room drawing markups.

1. Turnover in this response refers to releasing modified equipment to operations and should not be confused with the turnover process described in AI-6.15 for system completion prior to prestart testing.

Additionally, inconsistencies between the as-built plant and configuration control drawings (CCDs)² have been identified on the CCDs issued as part of the Design Baseline and Verification Program (DBVP). These CCD errors are considered minor and consist primarily of drawing discrepancies.

4.0 Corrective Steps Taken and Results Achieved

Corrective actions taken and described below include improved processes for statusing control room drawings and correction of CCD problems. Also described below is an explanation of use of temporary supports.

Inconsistent Marking of Control Room Drawings

To address the problem associated with updating control room drawings after completion of modifications, condition adverse to quality report (CAQR) WBP900114 documented this condition, and AI-8.19, "Marking Control Room and Shift Operation Supervisor's Primary Drawings," has been issued. This procedure changes the responsibility for control room drawing updating to the design organization. Detailed requirements for consistent marking of drawings are provided. In addition, guidance is given to the operators on the use of the drawings. The procedure outlines the way the marked-up drawings are to be used to determine the plant configuration for interim operation.

Improved CCDs

Errors identified in CCDs issued as part of the DBVP have been corrected as drawing deviations in the WBN Corrective Action Program. TVA has revised the procedure on CCD development to provide more details to help eliminate the problem. Problems with the CCDs are expected to be minimized as personnel become more adept with implementing the new CCD production process.

Temporary Supports

Regarding placement of temporary supports, TVA has design output covering their placement. TVA considers the use of temporary supports to be acceptable during the transitional phase program. This practice results in minimal risk to equipment and personnel.

2. The majority of main control room drawings are CCDs

5.0 Steps Taken to Avoid Further Violation

Turnover Controls

TVA had intended for the turnover process described in AI-8.8 to meet the philosophy described in Section 3.0 that portions of work released to operations are complete with physical work performed and verified, control room drawings updated, and operating instructions in place. The turnover process in the field has been strengthened, however, increased procedural controls are still warranted. Therefore, TVA will review the current turnover process to ensure that appropriate elements (sequencing and logic of instruction steps, communication, etc.) are included in AI-8.8.

TVA plans to continue to return modified equipment to service based on partial completion of design changes using discipline-based workplans. The formal document update and issue will continue to be based on design package completion. The control room drawing markup is an interim measure designed to give the operators the most up-to-date information. This program is similar to the program at TVA's operating plants.

Training on CCDs

To address a problem identified by the operators regarding interpretation of the CCDs, the design organization will develop a training module to better explain to operators the new CCDs.

6.0 Date When Full Compliance Will Be Achieved

All corrective actions will be complete by September 30, 1990.

ATTACHMENT 1

HYDROSTATIC TESTING POLICY

In ASME Section III jurisdiction, NX-6111 requires pressure testing of "components, appurtenances, and completed systems." During the course of Section III construction, pressure testing is normally the last action taken prior to certification and stamping of the item. The system pressure test is required to be performed prior to "initial system operation." Section III does not define the term "initial system operation," nor are there any interpretations or code cases published by ASME which provide guidance.

Guidance for defining the term "prior to initial system operation" is found in ANS 3.9-1982, "Administrative Controls and Quality Assurance for the Operational Phase of a Nuclear Power Plant." This reference defines the term "Operational Phase" as ". . . that period of time during which the principal activity is associated with the normal operation of the plant. This phase of plant life is considered to begin formally with the commencement of fuel loading and ends with decommissioning."

Therefore, TVA considers that hydrostatic testing performed prior to fuel load is in compliance with ASME Section III.

ENCLOSURE 2

RESPONSE TO NOTICE OF DEVIATION
NRC INSPECTION REPORT NUMBERS
50-390/90-09 AND 50-391/90-09

DEVIATION 390/90-09-01

Description

During the Nuclear Regulatory Commission (NRC) inspection conducted from March 17 through April 20, 1990, a deviation from NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (1990) the deviation is listed below:

The licensee committed, in Revision 2 of the Corrective Action Program for the Design Baseline and Verification Program (DBVP), paragraph 3.4, to develop system logic diagrams as part of the configuration control drawings update for the control room.

Contrary to the above, based on a review of control room drawings and the control room drawing list, as of April 20, 1990, the licensee had not included all of those systems covered by the DBVP in the development of system logic diagrams.

Reason for the Deviation

The cited commitment, in Section 3.4 of the CAP Plan, states "CCDs will be developed for the following categories of safety-related control room drawings: . . . Logic Diagrams."

NRC's interpretation of the commitment differed somewhat from TVA's intent. The difference appears to result from the understanding of the term "control room drawings." It is TVA's intent that these words identify those safety-related drawings for which the control room is on controlled distribution. This is the control room drawing list. TVA is therefore in compliance with its commitment.

Additional correspondence which indicates that this was TVA's intent includes section 4.0 of the DBVP CAP, "Description of Program Activities." Subsection 4.4, "Configuration Control," states "A single series of baseline drawings called CCDs will be developed that combine the former 'as-designed' (AD) and 'as-constructed' (AC) drawings for the control room drawings. The primary safety-related portions of the CCDs will be verified to match plant configuration and will have remaining plant modifications identified against them."

The Nuclear Performance Plan (NPP) Volume 4 interprets the TVA commitment regarding the configuration control activity in DBVP as follows: "The configuration control activity has been developed to ensure that plant functional configuration is in agreement with plant design for systems that mitigate design basis events. To provide this confirmation, selected control room drawings for the affected systems are to be verified through plant walkdowns and/or tests to functionally match the installed plant configuration."

TVA did not intend to imply that all the drawings within the types listed in Section 3.0 would be upgraded for each system. The scope for logic diagrams is the same as the scope for flow diagrams, control diagrams, schematic diagrams, and electrical single line drawings.

TVA is in compliance with commitments made in the DBVP CAP. The logic diagrams on the WBN control room drawing list are included in the scope of DBVP.

TVA recognizes the NRC concern regarding the completeness of the control room drawing list. This was identified in Unresolved Item (URI) 390/90-09-02. Response to this URI will address both the adequacy of the control room drawing list and control of additions and deletions to the list. Preliminary review of the list in response to this URI indicates that a number of additional drawings, including logic diagrams, will be recommended for inclusion in the control room.

Corrective Steps Which Have Been Taken and Results Achieved

TVA has initiated a review of the control room drawing list in response to URI 390/90-09-02, and has identified that some drawings will need to be added to the list.

Corrective Steps Which Will Be Taken to Avoid Further Deviations

Resolve URI 390/90-09-02.

Date When Corrective Action Will Be Completed

The closure package for URI 390/90-09-02 will be provided to the Resident Inspectors' Office by September 30, 1990.

ENCLOSURE 3

LIST OF COMMITMENTS

Deviation 390/90-09-01

1. The closure package for unresolved item (URI) 390/90-09-02 will be provided to the resident inspectors' office by September 30, 1990.

Violation 390/90-09-03

2. TVA will review the current process to ensure that appropriate elements (sequencing and timing of instruction steps, communication, etc.) are included in Administrative Instruction (AI)-8.8 by September 30, 1990.
3. To address a problem identified by the operators regarding interpretation of the CCDs, the design organization will develop a training module by September 30, 1990, to better explain to operators the new CCDs.