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OCT 09 1991

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)

WATTS BAR NUCLEAR PLANT (WBN) - NRC INSPECTION REPORT NO. 390, 391/90-27 - REPLY TO NOTICE OF VIOLATION

This letter responds to the report 390, 391/90-27 dated December 20, 1990, which identified one Severity Level IV violation containing multiple examples of inadequacies in the WBN corrective action program. In addition, this letter serves as a follow-up response to TVA's January 3, 1991 initial response to NRC Notice of Violation 390/90-15-03 as it pertained to WBN's enhanced corrective action program.

Enclosure 1 to this letter addresses the programmatic corrective action improvements initiated by TVA. These improvements are being monitored by TVA through verfication activities performed by the quality assurance (QA) organization. QA has recently determined that WBN performance is still at a level less than expected to completely meet management objectives and that further improvement is needed to support restart. However, QA concluded that, in general the corrective action program is working to correct past problems. In addition, QA determined that sufficient controls appear to be in place to ensure that problems will be found and corrected in a timely manner. A QA report on the corrective action program will be issued to TVA management by October 30, 1991. Positive results will be required prior to restart of construction.

Enclosure 2 to this letter addresses the specific examples of corrective action program inadequacies described in the subject inspection report and the actions taken by WBN to correct these inadequacies.

Enclosure 3 lists the commmitments made in this submittal.

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

Sincerely,

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John H. Garrity

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

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Many of the historical problems associated with WBN's corrective action program were the result of management's failure to devote sufficient attention to the corrective action process. Because there was a lack of emphasis placed upon the prompt and effective identification and resolution of problems, line organizations fell into a practice of conducting lengthy investigations with inadequate analysis. With insufficient emphasis placed upon the adequacy and completion of corrective action plans and the adequacy of closure of corrective action documents, some problems were allowed to remain uncorrected for an unacceptable length of time.

To correct these problems WBN has implemented wide ranging improvements that include the following:

In order to focus upper management attention on the corrective action process, the management review committee charter has been revised to include members of senior management from site organizations. This committee is made up of senior managers and alternates approved by the Site Vice President that are required to review significant corrective action documents. The committee charter places specific emphasis on technical aspects of corrective action such as adequacy of corrective action, 10 CFR 50.55(e) reportability, adequacy of preventive actions, and effects on nuclear safety and operation of the plant and plant equipment. The Senior Management Review Committee (SMRC) will continue at this level of oversite until it is confident the WBN corrective action program consistently meets management expectations.

In addition, to promote senior management attention, the corrective action procedure, Site Standard Practice (SSP)-3.04, "Corrective Action Program," requires that a senior manager, reporting directly to the Site Vice President, sign Significant Corrective Action Reports (SCARs) for approval of the developed corrective action. These SCARs identify significant adverse conditions according to corrective action procedure, SSP-3.04. This provides additional problem solving experience and management attention for corrective actions and the corrective action process.

The Quality Assurance (QA) organization is currently performing reviews of SCARs after initiation and also before closure. QA review provides feedback on the adequacy of the proposed corrective action and of the completed corrective action before closure. Comments from both of these reviews are fed back to the responsible organizations. QA will continue the initiation review until WBN management is confident that the program is working effectively.

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To allow the senior site management to better monitor the corrective action program, process work off curves and timeliness performance goals have been established for each organization. These are reviewed by the Site Vice President on a monthly basis.

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• QA has implemented a "12-6-3 review" of SCARs and Problem Evaluation Reports (PERs) on approximately a monthly basis. PERs describe discrepancies or problems which are outside the scope of any other administrative control program (ACP). An employee would use a PER, when not sure about how to document the problem. The 12-6-3 review examines 12 SCARs/PERs from a horizontal perspective (one QA program element); 6 SCARs/PERs are reviewed from a vertical perspective (entire process), seeking root causes, and to determine adequacy of corrective action; and 3 closed SCARs/PERs are selected and reviewed to assess the effectiveness of the corrective action in preventing recurrence of the identified problem. The frequency of these reviews will be adjusted to be commensurate with the level of performance being achieved.

In addition to these improvements, TVA has implemented enhanced requirements in Nuclear Power Standard (STD)-3.4, "Corrective Action." This standard represents a program which was presented to NRC on December 12, 1990, at the Region II headquarters in Atlanta, Georgia. This revised program has several improvements over previous programs, in that it will address NRC's concerns about the implementation of WBN's corrective action program and should prevent recurrence of past deficiencies.

With implementation of Nuclear Power Standard STD-3.4, the corrective action process has been simplified and strengthened in the following ways:

 Problem Reporting Documents (PRDs) and nonsignificant Conditions Adverse to Quality Reports (CAQRs) have been eliminated and replaced by the PER. The PER form is easier to generate than the PRD and addresses reportability, operability, generic review, and extent of condition, providing assurance that significant conditions will not be overlooked. The new program also requires that when the employee is not sure in which program to document the problem, it shall be documented on a PER to initiate timely attention to operability, reportability, and corrective action.

By differentiating problems according to their significance, management attention is more focused to ensure prompt correction of important issues.

- Four existing Conditions Adverse to Quality procedures (Administrative Instruction [AI]-2.8.3, AI-2.8.5, AI-2.8.14, and AI-2.8.15) were initially consolidated into AI-2.8.15, significantly reducing the complexity of the corrective action program. AI-2.8.15 was replaced by SSP-3.04 as part of TVA's recent procedures upgrade program.
- The types of problems that can be dispositioned by the ACPs have been standardized for TVA sites. The ACPs include those programs that can identify adverse conditions that do not meet the significance level of a SCAR (e.g., drawing deficiencies, maintenance requests, QC inspection reports).

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- The current ACP program ensures that key elements of the corrective action program are incorporated within each ACP when required. These key elements include a review for potential reportability, generic applicability, and trending. In addition, by standardizing the ACPs, TVA ensures a total integration of corrective action program elements into a cohesive and comprehensive program.
- Instruction on the revised program was developed and presented to appropriate WBN employees. Expanded instruction also has been given to supervisors and managers, with emphasis on timeliness of reporting problems, appropriate corrective actions, extent-of-condition review, and adequate verification of closure. Indoctrination of new personnel to the program is provided through the General Employee Training program.

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DESCRIPTION OF VIOLATION

Part 50 of Title 10 of the Code of Federal Regulations, Appendix B, Criterion XVI, "Corrective Action," is implemented in part by the Nuclear Quality Assurance Plan (NQAP), paragraph 10.4, which endorses ANSI N45.2-1971 (Section 16) and requires that measures be established to assure that conditions adverse to quality (CAQs), such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

Paragraphs 1.1, 1.4, 5.10, and 6.4.1 of site procedure AI-2.8.14, Revision 2, (effective May 19, 1989 through June 18, 1990), "Corrective Action," state that CAQs are to be promptly identified. Paragraph 6.2 states that in case of doubt, a Condition Adverse to Quality Report (CAQR) should be initiated. Paragraph 6.11.4.B.6 states that the corrective action shall include any generic implications of the CAQ within the responsible organizations division or site and shall not be limited to merely addressing the specific CAQ that was identified.

Section 3.0 of AI-2.8.15 Revision 0, "Corrective Action," states that it is the responsibility of all individuals to promptly identify and report all discovered CAQs. Section 3.3.1 H establishes that a determination be made of the specific actions to be taken to correct the CAQ and prevent its recurrence. Section 3.3.3 A establishes that the implementing organization is to implement and/or monitor implementation of approved corrective action.

Contrary to the above, CAQs were not promptly documented or corrected in accordance with the site procedure AI-2.8.14 or AI-2.8.15.

DESCRIPTION OF VIOLATION EXAMPLES 1, 2, AND 3

EXAMPLE 1

Numerous errors noted in completed Unit 1 American Society of Mechanical Engineers (ASME) Code N-5 data packages and informally documented in log books and in an uncontrolled personal computer data base from February 23, 1989 through August 31, 1989, were not documented in CAQR WBP 900145 until March 29, 1990. The date these CAQs were discovered was listed on the CAQR as March 28, 1990. This CAQR was issued (approved) on June 15, 1990.

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EXAMPLE 2

The absence of the required quality engineer review signatures from completed Maintenance Requests (MRs) A-585770, A-528446, and A-406051 (vault filed and microfilmed) was informally recorded in log books and a personal computer data base on April 25 and July 27, 1989, respectively, but not formally documented on Problem Reporting Document (PRD) WBP 890508 until September 29, 1989. The date these CAQs were discovered was listed on the CAQR as September 28, 1989.

EXAMPLE 3

The lack of Authorized Nuclear Inspector (ANI) review and involvement for welding activities related to three valves and a pipe flange on Workplan 4148, as required by Section III of the ASME Code, was informally documented on May 5, 1989, in a log book and a personal computer data base, but not documented in the corrective action program as of October 25, 1990.

TVA RESPONSE - EXAMPLES 1, 2, AND 3

Admission or Denial of the Violation Examples

TVA admits the violation examples.

Reason For The Violation

Violation Examples 1, 2, and 3 occurred as a result of failure by personnel to follow applicable procedures. In this regard, log books and a personal computer were used to record items that should have been tracked in a PRD. The PRD should have been used because additional information was required to resolve apparent discrepancies once it was realized that a CAQ determination could not be made without further information or a more in-depth review. Most discrepancies were resolved when additional information was received. However, procedures in effect at the time required that the initiator determine (in so far as practical) whether the condition meets the requirements of a CAQ, and if so, promptly document the condition on a CAQR form. For violation Examples 1, 2, and 3, prompt documentation of the conditions did not occur. Specific details for each example are provided below.

EXAMPLE 1: Discussions with the ANI on implementation of ASME Interpretation III-1-83-175 for revising the original N-5 package were underway for some time before an agreement was reached that corrections to original N-5s could be treated by a procedure revision rather than a CAQR. However, this decision was reversed on March 27, 1990, and CAQR WBP 900145 was generated on March 29, 1990, to document the problem as a CAQ.

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EXAMPLE 2: Personnel inappropriately tracked the MRs in a log before obtaining copies of the applicable procedure to determine if the quality engineering (QE) signature was required for the timeframe in which the MR was written. In addition, personnel were not timely in requesting a copy of the MR procedure revision to determine if a CAQ condition existed. Once the procedure revisions were obtained and the review was performed, the CAQ condition was determined and documented in a timely manner.

EXAMPLE 3: This example involved the lack of ANI involvement on Workplan 4148. The subject workplan was initially written for completing work to meet the ASME Section XI program. The workplan was subsequently upgraded to meet ASME Section III requirements. The ASME XI to ASME III upgrade effort directs that work generating documents which require but do not have the ANI review be forwarded to the ANI. While being reviewed to determine if the workplan met the ASME III hydrostatic test requirements, missing ANI signatures were found. This process had progressed to the point of resolving the first set of ANI comments when the NRC inspector identified the CAQ condition. The missing ANI signature violated the procedure requirement for ASME Section III, but met the original Section XI requirements. Personnel involved in this upgrade program failed to recognize this as a CAQ condition.

Corrective Steps Taken and Results Achieved

TVA has taken the following corrective action in order to resolve the conditions listed in Examples 1, 2, and 3.

- 1. The use of the subject log book and a personal computer data base for tracking problems has been discontinued. (This action was completed October 5, 1989.)
- 2. The log book and personal computer data base being used were reviewed to identify any additional potential problems. Unresolved problems were documented on CAQs WBP 910126, WBPER 910034, WBP 910125, and WBP 910129. (This action has been completed and verified by QA, February 22, 1991, WBN 900606SCA.)
- 3. Personnel involved in the N-5 review were reinstructed December 10, 1990 in the corrective action program and on February 15, 1991 on the use of Problem Evaluation Report (PERs). Site personnel have been instructed to issue a Significant Corrective Action Report (SCAR) or a PER in accordance with Site Standard Practice (SSP)-3.04, or SSP-3.06 for those instances involving a violation of a procedure or upper-tier requirement. In addition, prompt identification is required by procedure of all adverse conditions or potential conditions which meet SCAR or ACP criteria.

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EXAMPLE 1: Errors identified by the N-5 supplement group have been included in SCAR WBP 900145SCA, which was initiated to document and review the original N-5 errors. Errors being tracked in log books and personal computer data base have been included in the description section of this CAQR. The procedures being used for the N-5 data report review require that if any errors are identified they should be evaluated in accordance with SSP-3.04 requirements and, if applicable, documented in the appropriate corrective action document.

<u>EXAMPLE 2</u>: The required signoffs and dates were added to MRs A-406051, A-528446, and A-585770. These errors were documented on PER WBP 870059PER. These three MRs have been resubmitted to the vault.

EXAMPLE 3: Workplan 4148 did not reflect any ANI involvement as required by Section III of the ASME code. The ANI approval/signature will be obtained to update the workplan to Section III requirements. To document this deficiency, Workplan 4148 was added to PER WBP 870059PER which listed additional work generating documents that have similar problems.

Line organization managers were instructed to verify that their organizations were not utilizing log books or personal computers to document potential CAQs. This action has been completed.

Corrective Steps Which Will Be Taken To Avoid Further Violation

The corrective steps to avoid further violation have been completed.

Date When Full Compliance Will Be Achieved

TVA is in full compliance.

EXAMPLE 4

PRD WBP 900131P, Revision 0, was dispositioned with erroneous information which resulted in inadequate corrective action for this CAQ. CAQR WBP 900131, Revision 1, was independently verified and closed on August 24, 1990, with missing and inadequate documentation of corrective action. In addition, the corrective action section of this CAQR was not revised to perform additional evaluations after the initial review identified numerous discrepancies in incorporation of new engineering criteria into work documents.

TVA RESPONSE - EXAMPLE 4

Admission or Denial of the Violation Example

TVA admits the violation example.

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Reason for the Violation

The failure to properly close these CAQs resulted from the failure to follow the procedure by personnel closing CAQs and personnel reviewing CAQs for closure. PRD WBP 900131P was initially dispositioned with erroneous information. Revision 1 was issued to correct these inadequacies. Revision 1 was then verified and closed without the corrective action being complete and with missing documentation, in that (a) a listing of workplans reviewed, which were affected by the condition identified in WBP 900131, was misplaced from the closure package, (b) copies of a memorandum issued to address actions to prevent recurrence were missing, and (c) a copy of the description of specification change evaluation was not included in the closure package. The methods used to disposition and close the CAQ did not ensure sufficient information was available to support the decisions made, nor was the effectiveness of the methods monitored and assessed. The administrative control program (ACP) procedures previously in place and currently in place provide specific criteria for report closure. Failure to follow these closure guidelines is a result of lack of attention by the responsible individuals.

Corrective Steps Taken and Results Achieved

To correct the missing and inadequate documentation of the evaluation of electrical specification changes, WBP 900131 has been reopened as SCAR WBP 900131SCA. The extent of condition has been revised to include additional examples of late incorporation of design requirements into site procedures and to evaluate their impact on installed plant components or features. TVA's response to violation 390, 391/91-04-03, submitted June 7, 1991, and supplemented on July 31, 1991, describes the corrective steps taken to identify and evaluate cases of untimely implementation of upper-tier requirements and their impact on work performed.

Enclosure 1 describes the enhancements TVA has implemented in the revised corrective action program. This revised program provides stricter guidelines for all aspects of the corrective action program, including closure. Expanded instruction has also been given to supervisors, managers, and engineers with emphasis on prompt reporting of CAQs, effective corrective action, extent of condition review, and adequate verification of closure.

Corrective Steps Which Will Be Taken to Avoid Further Violation

The TVA Quality Assurance organization is required by procedure to perform verification of all SCARs for adequacy of corrective action completion and sufficient documentation. Acceptance/rejection performance of each organization is being tabulated and reported to the senior site management. In addition, TVA has also implemented a sampling program, i.e., "12-6-3 program." See discussion on page 2 of Enclosure 1 for program details. This review will continue until WBN management is confident that positive trends are firmly established.

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Corrective Steps Which Will Be Taken to Avoid Further Violation (Continued)

TVA is also performing a statistical sample of closed corrective action reports (60 CAQRs and 60 PRDs) using various attributes in an effort to identify issues similar to those identified by NRC in their inspections. The scope of this review included those reports closed between March 1987 and February 1991. The results of this review, to date, has identified additional examples of problems in the closure of CAQ reports. However, further evaluation determined that none of the examples identified would have an impact on the safety of the plant and did not represent uncompleted corrective actions. The examples were largely associated with missing documentation. Actions are being taken by the Quality Assurance (QA) organization to reflect this review in the associated corrective action documents. Corrective actions to resolve the problems identified will be in place by October 30, 1991.

The recurrence control for the late implementation of new engineering criteria into site construction procedures is addressed in TVA's response to violation 390, 391/91-04-03 dated June 7, 1991.

Date When Full Compliance Will Be Achieved

Corrective actions to resolve the problems identified in the QA review will be in place by October 30, 1991. Associated hardware activities resulting from the workplan review will be corrected by group system turnover.

EXAMPLE 5

The corrective action for PRD WBN 890316P did not address the statement of the CAQ or provide adequate justification for the resolution. The CAQ was stated as a misclassification of a procedure as nonsafety related and nonquality related. The corrective action was to revise the procedure to designate the records produced by that instruction as non-QA. The corrective action did not address the nonsafety-related classification or provide justification that a procedure is non-QA related because no procedure specific QA documents are produced. The corrective action did not provide any justification for changing the QA output of the procedure corrective action program from QA documents to non-QA documents. The corrective action did not identify other TVA procedures, such as AI-12.2, "Protection of Safeguards Information," and Nuclear Power Standard 5.6.5, "Protecting Safeguards Information," that are incorrectly classified as nonquality related.

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TVA RESPONSE - EXAMPLE 5

Admission of Denial of the Violation Example

TVA admits the violation example.

Reason For The Violation

The reason for the violation was a failure to fully consider and provide adequate justification for the manner in which the PRD was closed. Closure was achieved by correcting a misstatement in procedure AI-11.2 "Preparation, Review, and Approval of Corrective Action Programs," but the closure package failed to provide justification for why AI-11.2 did not required designation as safety related and/or QA related.

The description of the condition stated that AI-11.2 was misclassified as nonsafety/non-QA related. This was thought to be the case because the output document of the procedure, the corrective action program (CAP) reports, were described in the procedure as QA records. The CAPs as described by AI-11.2 are documented plans that outline the approach WBN uses to identify and resolve related categories of similar issues that impact licensing of the plant. These plans are management tools which describe, at a summary level, how TVA is approaching resolution of open issues. While the CAPs themselves are not QA documents, the implementing level program procedures are quality-related and do generate QA records. However, because AI-11.2 incorrectly designated the CAPs as quality records, corrective action was taken to address this error. Because this corrective action essentially resolved the original problem, the corrective action was considered adequate. However, there was a failure to provide justification about how the corrective action resolved the original deficiency.

In addition, the corrective action program defined by AI-2.8.14 (in effect at the time) did not require that a documented "extent of condition review" be performed for CAQs categorized as PRDs. An "extent of condition" review would have determined if the scope of the condition described was an isolated occurence.

Corrective Steps Taken and Results Achieved

A continuation sheet has been added to the PRD which provides appropriate justification to address its initiation and dispositioning. This will assist future reviewers in understanding the method in which this PRD was dispositioned.

The revised corrective action procedure established for processing and evaluating problems identified on PERs (formerly PRDs) requires that an extent of condition review be completed. This review provides reasonable assurance that the action(s) to be taken are adequate relative to the importance to safety and a determination of whether the problem is an isolated case or a wide spread condition. In addition, the methodology for determining the extent of condition is to be documented in the corrective action document.

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Corrective Steps Taken and Results Achieved (Continued)

Determination of the QA classification of site procedures is listed in the Masters Site Procedure List. Monthly revisions are reviewed and approved by quality assurance and the plant operations review committee. QA approval per SSP-2.03, "Administration of Site Procedures," verifies that the quality-related classification is correct. This list is then made available to the line organizations.

As previously noted, the new corrective action program, implemented February 1991, requires an extent-of-condition review be performed for the condition described on the adverse condition document. This provides reasonable assurance that the action(s) to be taken are adequate relative to the importance to safety and if the condition is an isolated occurrence.

Corrective Steps Which Will Be Taken To Avoid Further Violation

TVA completed their review of site procedures on May 7, 1991, to determine if any other procedures were misclassified as non-quality related or whether they may have improperly generated QA records. A list was compiled identifying the procedures classified as non-quality related. This list identifies some procedures that were misclassified as non-quality related as well as some which improperly generate QA records. The corrective actions to correct the procedures and/or QA records and to evaluate the effect of misclassified procedures are scheduled for completion by December 1, 1991. PRD WBN 890316P was revised and reclassified as a SCAR (WBN 890316SCA) to document these actions.

Date When Full Compliance Will Be Achieved

The evaluation of the procedures that may have been misclassified or that generate QA records was completed on May 7, 1991. The actions to correct the procedures and/or QA records are scheduled for completion by December 1, 1991.

LIST OF COMMITMENTS

- 1. A final Quality Assurance report will be issued by October 30, 1991, pending a Quality Assurance follow-up of the open issues.
- 2. Actions are being taken by the QA organization to reflect the results of a (statistical sample) of associated corrective action documents. Corrective actions to resolve the problems identified will be in place by October 30, 1991.
- 3. To correct the missing and inadequate documentation of the evaluation of electrical specification changes, WBP 900131 has been reopened as SCAR WBP 900131SCA. The extent of condition has been revised to include additional examples of late incorporation of design requirements into site procedures and to evaluate their impact on installed plant components or features.
- 4. The actions to correct misclassified procedures and/or associated QA records and evaluate the effect of misclassified procedures are scheduled for completion by December 1, 1991.