

Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

Mark O. Medford Vice President, Nuclear Assurance, Licensing and Fuels

### MAY 15 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 ) 50-391

WATTS BAR NUCLEAR PLANT (WBN) - UNITS 1 AND 2 - NRC INSPECTION REPORT NOS. 50-390/91-03 AND 50-391/91-03 - NOTICE OF VIOLATIONS 50-390/91-03-05 AND 50-390/91-03-06

TVA has reviewed the subject inspection report and provides the enclosed response. This reply to the subject notice of violations addresses the specific examples, as well as the programmatic aspects. The programmatic aspects will be further addressed in TVA's response to violations 390/90-27-01 and 390, 391/90-31-01.

Enclosures 1 and 2 provide TVA's response to violations 390/91-03-05, "Inadequate Corrective Action," and 390/91-03-06, "Inadequate Procedures." Enclosure 3 contains the remaining commitments to resolve these violations.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

Mark Di Mulparell

Mark O. Medford

Enclosures cc: See page 2

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U.S. Nuclear Regulatory Commission

### MAY 15 1991

cc (Enclosures):

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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, paragraph 10.2.2.A, which endorses ANSI N45.2-1971 (Section 16) and requires that TVA Nuclear Power organizations promptly identify and correct adverse conditions.

Contrary to the above, three examples of a lack of prompt identification and correction of conditions adverse to quality were identified.

This is a Severity Level IV Violation (Supplement II) and applies to Units 1 and 2.

#### DESCRIPTION OF VIOLATION EXAMPLE 1

On June 2, 1987, Condition Adverse to Quality Report (CAQR) WBP870420 was issued documenting damage to and improper storage of Class 1E electrical cable. Interim engineering requirements were issued on October 30, 1987, as drawing 47A100-2-0 which specified in part that cable reels must be covered for protection from sunlight, weather, and dust; and that cable stored in Level D outdoor storage must be under a roof. On June 29, 1990, Problem Reporting Document (PRD) WBP900291P was issued documenting that Class 1E cable was being stored outside without a roof for protection.

On February 26, 1991, numerous reels of Class 1E electrical cable were being stored outdoors near Storage Hut No. 32 without a roof and without covering from sunlight, weather, and dust. In addition, numerous Class 1E cable reels stored inside Storage Hut No. 32 did not have any protective coverings as required.

#### TVA RESPONSE - EXAMPLE 1

#### ADMISSION OR DENIAL OF THE VIOLATION EXAMPLE

TVA admits that the violation example occurred.

#### REASON FOR THE VIOLATION

This violation occurred because of a failure by WBN management responsible for cable storage to promptly correct identified nonconforming conditions. Quality control inspections documented damaged and improper storage conditions for Class 1E electrical cable numerous times since 1987. The scope of the quality control material nonconformance and subsequent inspection reports included several hundred cable reels. Rather than implementing the required corrective actions or seeking an approved option, management elected to inspect for compliance at the time cable was transferred to Unit 1 for subsequent issue. Personnel responsible for modified Level D storage interpreted the Drawing 47A100-2-0 series requirement for storage under roof and covered storage as optional until June 1990, when PRD WBP900291P was written which identified this as an incorrect interpretation. Corrective action associated for this PRD was not scheduled for completion until July 1991.

#### CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

The subject cable reels have been relocated under roof. The cable reels identified as being unacceptable have been segregated and/or tagged to prevent their issuance until appropriate corrective actions have been completed. Drawing 47A100-2-0 series has been revised to clarify the mandatory nature of the storage requirements. Implementing Administrative Instructions (AIs)-5.2, "Receiving Inspection," and -5.6, "Material Storage," will also be revised by May 31, 1991, to clarify the cable storage requirements.

A training session on the drawing requirements and revised administrative instructions will be conducted by May 31, 1991. Included in the training program will be a discussion of the requirements violated and the importance of taking prompt corrective action to correct deficient conditions.

### CORRECTIVE ACTION WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

To ensure prompt attention is given to materials inspected and identified as unacceptable, TVA's nuclear stores organization has implemented a computerized notification program. This program is structured to provide periodic notification to nuclear stores management of unsatisfactory storage inspection reports. This will assure a management involvement in scheduling activities for completion of required corrective actions.

Additional actions to improve the corrective action program, including timeliness, will be included in TVA's response to violation 390/90-27-01, "Inadequate Corrective Action Program," and violation 390, 391/90-31-01, "Failure to Establish and Implement an Adequate Corrective Action Program."

#### DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

TVA is currently in full compliance.

#### DESCRIPTION OF VIOLATION EXAMPLE 2

Workplan N6536-1 provided for the inspection and rework (as required) of 23 6.9kV Class 1E cable splices. Although over 40 percent of the crimped splice connectors inspected by that workplan were determined to be improperly installed, no action was taken to expand the workplan or to address the potential for similar deficiencies in other completed splices and terminations. In addition, inspection and rework documentation for 4 of the 23 splices completed by the workplan could not be found.

#### TVA RESPONSE - EXAMPLE 2

#### ADMISSION OR DENIAL OF THE VIOLATION EXAMPLE

TVA admits that the violation example occurred, but would like to provide the following clarification. In some applications, individual conductor splices for a single three-phase cable may be located in 2 different manholes. This condition may have existed for the 4 splices that were not specifically addressed in the workplan.

In addition, TVA wishes to clarify that there were 18 rather than 19 cables addressed by Nonconformance Report (NCR) 6536 (1 cable was listed twice). Of these cables, 2 rather than 3 were replaced before performance of the workplan. The referenced significant condition report remains open since it is also applicable to Unit 2.

#### REASON FOR THE VIOLATION

NCR 6536 was issued in December 1985, documenting an instance in which site procedures specified that T&B 54500-series cable splice connectors rated at 600 volts be used on 6.9kV rated cable. Corrective actions included determining where 6.9kV splices were installed in cable that was essential to safe operation or shutdown of the plant. TVA was to inspect for subject splice connectors and rework as required. The NCR provided a population of 18 cables (2 of these cables were replaced before this work), with 23 possible splice/repair locations to be addressed, the acceptance criteria for the connectors, and the procedure to be followed to make them acceptable.

The workplan required inspecting 1 of the 3 conductors on each cable and inspecting the remaining 2 conductors only if the first was found deficient. When the insulation was removed from the sample of splices, it was found that none of the splices had been made using the connector in question. However, according to the documentation, some of the conductor crimps were questionable and some splices had either excessive conductor exposed or less than the required conductor exposed. The responsible engineer elected to replace these splices and crimps while the components were out of service.

At the time the subject workplan was implemented, the engineer responsible for performing the inspection did not interpret the applicable procedure as requiring the identification of these conditions separately from the NCR. Work was being completed under AI-2.8.3, Revision 12, and was interpreted by the engineer to mean that if work was in progress when a related condition was discovered, an additional adverse condition report was not necessary. The administrative instruction in place at the time for identifying and correcting adverse conditions stated that:

"The following areas do not necessarily constitute a WBN initiated NCR: 5.1.1.1 A deficiency identified as part of an in-process inspection or test or work performed as a modification or addition (report per AI-8.5 or AI-8.8)."

The "sample" was not expanded to include the remaining splices because the NCR specified certain criteria regarding the connectors and the method and number of splices to be addressed. The responsible engineer believed that he had exceeded the minimum requirement of the NCR for the number to be examined when he replaced the questionable crimps since the NCR required him to inspect the remaining 2 splices for a particular cable only if a T&B 54500-series connector was found. The "sample" was not expanded to include the remaining splices because the engineer believed that no recognized adverse condition was identified. The engineer believed the crimps were questionable and a field change request was already in place to address conductor exposure. The subsequent rework and inspections were performed to existing procedures with appropriate quality control verifications.

Past procedures and programs for identifying adverse conditions provided a limited range of alternatives for the individual identification of conditions adverse to quality. Due to the nature of the example identified, the population should have been expanded to include other cables of this configuration. A revision was made to the workplan to make provisions for the replacement of any improper splices; however, the engineer failed to adequately revise the work instructions to clarify the reason for the revision or to take additional corrective actions after determination of deficiencies.

#### CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

TVA has instituted a new Significant Corrective Action Report (SCAR)/Administrative Control Program (ACP), AI-2.8.15, "Corrective Action," and AI-2.32, "Problem Evaluation Reports," which, among other things, provide a wide range of avenues for identifying adverse conditions. This new program enhances personnel awareness of adverse conditions and provides various methods for identification. In addition, it allows individuals to document any questionable condition as a Problem Evaluation Report (PER) and provides for feedback to the initiator regarding the status of the adverse condition. These revised instructions became effective February 11, 1991. Training of engineers and managers to this program was completed February 1, 1991.

#### CORRECTIVE STEPS TO AVOID FURTHER VIOLATIONS

TVA will complete the following corrective actions in order to resolve the specific concerns identified in this violation.

- The 4 splices not addressed by the documentation in Workplan N6536-1 for NCR 6536 may not exist at the locations indicated by the NCR due to cable rework. A walkdown of the subject cables will be performed to verify the existence or absence of the 4 splices. If the 4 splices do exist, they will be addressed and reworked as necessary based on the acceptance criteria of NCR 6536.
- TVA will inspect Workplan N6536-1 splices not previously inspected for acceptable crimping and conductor exposure. This will include the splices not inspected when the first splice was found acceptable. These splices will be inspected and evaluated as soon as possible, but no later than applicable system group completion.
- SCAR WBSCA910173 was initiated by TVA to document the failure to identify improper crimps on 6.9kV splices and failure to expand the inspection population. Reference to this report will be made on Workplan N6536-1 by June 10, 1991.
- Field investigations performed as a part of the corrective action for SCA WBSCA910173 will provide the basis for any further actions. Corrective actions will be completed as soon as possible, but no later than system group completion.

Work control processes at WBN are currently undergoing a complete restructuring to align the procedures, both administrative and technical, with the procedures and processes used at TVA's Browns Ferry Nuclear Plant. These procedures and processes have proven to be successful in the restart activities for that site. The new processes will ensure a minimum of 3 checks for field installations, as the field engineer, the craft foreman, and the quality control inspector will be required to verify adherence to procedures and adequate craft skills.

Personnel will receive training on these procedures, with emphasis on personnel responsibilities and requirements, before resumption of construction activities.

#### DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Applicable work control process procedures are scheduled to be in place by May 31, 1991. Personnel will be receiving training on these procedures before resumption of construction activities.

#### DESCRIPTION OF VIOLATION EXAMPLE 3

Adverse conditions documented on CAQRs WBP880274, WBP880541, WBP880022, and Significant Condition Report (SCR) WBN6479-S were placed in Unit 2 hold status without determination that the condition either did not apply to Unit 1 or was already formally documented for Unit 1 and that a delay in completing actions to prevent recurrence would have no adverse effect on Unit 1 activities or hardware.

#### TVA RESPONSE - EXAMPLE 3

#### ADMISSION OR DENIAL OF THE VIOLATION EXAMPLE

TVA admits that the violation example occurred, but would like to provide the following clarification. A review of CAQR WBP880022 has determined that it was appropriately placed in Unit 2 hold status. The report documented an isolated case of employee error and was determined to be neither reportable or programmatic in nature.

#### REASON FOR THE VIOLATION

TVA has reviewed the examples identified in the violation that were inappropriately placed in Unit 2 hold status. TVA has determined that the reason can be attributed to the improper interpretation of the procedure regarding what constitutes a programmatic issue.

Site Director Procedure AI-7.11 provides the instructions for reviewing, identifying, documenting, and placing in "hold" status those items strictly pertaining to Unit 2 fuel load. The scope of the procedure applies to common and Unit 2 conditions adverse to quality and licensing issues, including both programmatic and hardware-related conditions.

Conditions adverse to quality associated with programmatic issues are to be evaluated and those with potential effect on Unit 1 licensing are to remain active. Programmatic issues are defined as items where corrective actions are nonunitized and where implementation of the corrective action will result in compliance for both units and common equipment. The procedure does not require the development of the corrective action, extent of condition (unless it is programmatic), or the causes before placing an item on Unit 2 hold. Establishment of Unit 2 hold is based on an individual's interpretation of applicability to Unit 1 following the guidelines of the procedure. The procedure provides inadequate guidance for making the determination for programmatic-related items.

#### CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

TVA reviewed the examples identified in the violation and has taken CAQRs WBP880274, WBP880541, and SCR WBN6479-S out of Unit 2 hold status.

### CORRECTIVE ACTIONS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

Conditions adverse to quality in Unit 2 hold status are being reviewed by a team to determine the appropriateness of the hold status. This is being done as part of the corrective action for SCAR WBSCA910169. This review is scheduled for completion by July 30, 1991. Items that are found to be inappropriately placed in hold status will be removed and the tracking system updated.

In addition, Site Director Procedure AI-7.11 is being revised to provide better guidance to what constitutes a programmatic issue to further define appropriate Unit 2 hold items. A comprehensive checklist will require completion before a determination can be completed to ensure that appropriate information is considered before placing an item in Unit 2 hold status. This action is scheduled for completion by July 30, 1991. An interim change to the procedure is scheduled to be issued by May 31, 1991.

#### DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

TVA will be in full compliance by July 30, 1991.

## WATTS BAR NUCLEAR PLANT (WBN) RESPONSE TO NRC NOTICE OF VIOLATION 390/91-03-06

#### DESCRIPTION OF VIOLATION

Part 50 of Title 10 of the Code of Federal Regulations, Appendix B, Criterion V, "Instructions, Procedures and Drawings, and Criterion VI, "Document Control," are implemented in part by the TVA Nuclear Quality Assurance Plan, paragraph 6.0, which endorses ANSI N45.2-1971 and states that quality-related activities shall be prescribed by documented procedures and instructions and shall be performed in accordance with approved and controlled instructions, procedures, and drawings.

Paragraph 6.1.2.A.3 states that, procedures and instructions shall include or reference appropriate technical requirements, including those in design output documents.

Contrary to the above, one example of an inadequate procedure and one example of failure to follow procedures were identified. This is a Severity Level IV Violation (Supplement II) and applies to Units 1 and 2.

#### DESCRIPTION OF VIOLATION EXAMPLE 1

There were no documented procedures or instructions to prescribe the internal document control and records management audit process required by Administration Instruction (AI)-4.3, "Controlling Drawings," and AI-4.8, "Controlled Manuals." Audits of controlled drawing status performed in February 1990 of the Mechanical Engineering and Procedure Upgrade Project were inadequately documented, and there was no objective evidence that discrepancies identified were corrected.

#### TVA RESPONSE EXAMPLE 1

#### ADMISSION OR DENIAL OF VIOLATION, EXAMPLE 1

TVA admits the violation example occurred as stated.

#### REASON FOR VIOLATION

The cause for this violation was the lack of a document control and records management internal instruction to provide audit personnel the means to perform accurate and consistent audits, to properly document them, and to report any deficiencies found to the appropriate management after they are completed. The requirement for an audit in the controlled drawing and controlled manual areas were left to the individual/organization performing the audit on how to perform and document the results. This condition resulted in inconsistent and improper documentation.

## WATTS BAR NUCLEAR PLANT (WBN) RESPONSE TO NRC NOTICE OF VIOLATION 390/91-03-06

#### CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

Instruction WBN DCRM-I-001, "Assessment Program," has been written to proceduralize the internal audit activities. Specifically, this instruction provides details on the performance of audits of controlled documents and drawings. This instruction also provides a means to document any discrepancies including error codes so that the type of problem identified can be trended as a means to resolve recurring discrepancies. Employees who perform these audits have been trained to the new instruction.

#### CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

TVA has established an audit group responsible for performing audits. Standardized documentation identified in the internal instruction is required to be completed and maintained by the document control records management personnel performing the audits. A periodic report will be prepared from the documentation and forwarded to the document control records management manager for evaluation of any adverse conditions.

#### DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

The actions identified above have been completed.

#### DESCRIPTION OF VIOLATION EXAMPLE 2

Revision 4 to Workplan FY000A-Z improperly deleted the specific reference to the inspection requirement for a roof over cable reels stored in outdoor Level D storage areas as required by the design output drawing 47A100-2-0. Additionally, a pen and ink change to Workplan FY000A-Z on February 1, 1989, improperly revised the engineering requirement of drawing 47A100-2-0 (paragraph 3.4.1.4) to make it optional to cover cable stored indoors.

#### TVA RESPONSE EXAMPLE 2

#### ADMISSION OR DENIAL OF VIOLATION, EXAMPLE 2

TVA admits the violation example occurred in part. TVA denies the portion of the violation stated in the second sentence of example 2. The second sentence states, "Additionally, a pen and ink change to Workplan FY000A-Z on February 1, 1989, improperly revised the engineering requirement of drawing 47A100-2-0 (paragraph 3.4.1.4) to make it optional to cover cable stored

## WATTS BAR NUCLEAR PLANT (WBN) RESPONSE TO NRC NOTICE OF VIOLATION 390/91-03-06

indoors." The requirement of Drawing 47A100-2-0 series stated, "If the cable reels are stored in Level C, a clear plastic storage cover can be used for dust protection," where Workplan FY000A-Z, step 13.D stated, "Cables stored in Level C shall be covered with clear plastic." The pen and ink change corrected "shall" to "can" in the workplan step on February 1, 1989. This change was made in accordance with Section 6.12.4, "Supplements," of instruction WBN-CEP-1.60, "Work Control." This section allows supplemental information to be added to the workplan as long as this information does not change the scope of the workplan. Since the workplan step was in conflict with this engineering requirement, the change was made only to correct a misstatement of the engineering requirement in workplan step 13.D.

#### REASON FOR THE VIOLATION

The cause for this violation was a misinterpretation of Drawing 47A100-2-0 series cable storage requirements for Unit 2 cable storage by personnel responsible for implementing Workplan FY000A-Z. Drawing 47A100-2-0 series was written by Nuclear Engineering to provide details on proper storage and handling of cable as a corrective action to Condition Adverse to Quality Report (CAQR) WBP870420. The workplan was written to provide the instructions to address and disposition deficiencies on individual cables and cable reels. Proper completion of the workplan provided a means for conforming cable and cable reels to acceptable standards or dispositioning those found unacceptable. Personnel responsible for cable storage and handling interpreted "Level D storage under roof" as an option. Nuclear Construction believed that storage under roof was to provide protection against deterioration of the cable reels before the cable was to be used. Contact with the vendor confirmed that the reels would deteriorate after being exposed outdoors for 2 years. This was discussed between Nuclear Stores, Nuclear Construction, and Nuclear Engineering. Nuclear Construction thought that the cable would be used within the 2-year timeframe eliminating any concern for the deterioration of the reel. This led to Revision 4 of Workplan FY000A-Z deleting the specific reference to the inspection requirement for a roof over cable reels stored in outdoor Level D storage areas.

#### CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

All cables reels have been moved under roof.

The Drawing 47A100-2-0 series has been revised to clarify cable storage requirements. Specifically, a Level D (modified) category and definition have been added and defined as, "The requirement in ANSI N45.2.2-1972 with the additional requirement to be under roof or a, NE approved, shelter." Also the Level D requirement statement has been changed from "Level D items may be stored outdoors under roof..." to "Level D (Mod) items may be stored outdoors, if under roof or a, NE approved, shelter..."

## WATTS BAR NUCLEAR PLANT (WBN) RESPONSE TO NRC NOTICE OF VIOLATION 390/91-03-06

### CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

Workplan FY000A-Z will be revised to include clarified requirements of 47A100-2-0 series by August 1, 1991.

#### DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

TVA will be in full compliance by August 1, 1991.

### ENCLOSURE 3 LIST OF COMMITMENTS

#### VIOLATION 390/91-03-05

#### EXAMPLE 1

- Actions to improve the corrective action program including timeliness will be included in our response to violation 390/90-27-01, "Inadequate Corrective Action Program," and violation 390, 391/90-31-01, "Failure to Establish and Implement an Adequate Corrective Action Program."
- Implementing Administrative Instructions (AIs)-5.2, "Receiving Inspection," and -5.6, "Material Storage," will be revised by May 31, 1991, to clarify the cable storage requirements.
- A training session on the drawing requirements and revised administrative instructions will be conducted by May 31, 1991. Included in the training program will be a discussion of the requirements violated and the importance of taking prompt corrective action to correct deficient conditions.

#### EXAMPLE 2

- The four splices not addressed by the documentation in the Workplan N6536-1 for NCR 6536 may not exist at the locations indicated by the NCR due to cable rework. A walkdown of the subject cables will be performed to verify the existence or absence of the four splices. If the four splices do exist, they will be addressed and reworked as necessary based on the acceptance criteria of NCR 6536.
- TVA will inspect Workplan N6536-l splices not previously inspected for acceptable crimping and conductor exposure. This will include the splices not inspected when the first splice was found acceptable. These splices will be inspected and evaluated as soon as possible, but no later than applicable system group completion.
- SCAR WBSCA910173 was initiated by TVA to document the failure to identify improper crimps on 6.9kV splices and failure to expand the inspection population. Reference to this report will be made on Workplan N6536-1 by June 10, 1991.
- Applicable work control process procedures are scheduled to be in place May 31, 1991. Personnel will be receiving training on these procedures before resumption of construction activities.

### ENCLOSURE 3 LIST OF COMMITMENTS

#### EXAMPLE 3

- Conditions adverse to quality in Unit 2 hold status are being reviewed by a team to determine the appropriateness of the hold status. This is being done as part of the corrective action of SCAR WBSCA 910169. This review is scheduled for completion by July 30, 1991.
- Site Director Procedure AI-7.11 is being revised to enhance the definition of what is a programmatic issue along with the form to further define appropriate Unit 2 hold items. A comprehensive checklist will require completion before determination can be completed to ensure that the appropriate information is considered before placing an item in Unit 2 hold status. This action is scheduled for completion by July 30, 1991. An interim change to the procedure is scheduled to be issued by May 31, 1991.

#### VIOLATION 390/91-03-06

#### EXAMPLE 2

Workplan FY000A-Z will be revised to include the clarified requirements of Drawing 47A100-2-0 series by August 1, 1991.