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APR 29 1992

U.S. Nuclear Regulatory Commission
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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 NOS. 50-390/92-03 AND 50-391/92-03 - REPLY ON ASSOCIATED CORRECTIVE ACTIONS - MATERIALS IMPROVEMENT PROJECT (MIP)

TVA has conducted a detailed review of the subject inspection report which identified eight apparent violations and indicated that these apparent violations were being considered for possible enforcement action. As indicated in NRC's cover letter to the inspection report, these apparent violations may be categorized into two principal concerns; (1) that WBN degraded work controls, contrary to its commitment reflected in NRC's restart letter of November 26, 1991; and (2) that the number and nature of the apparent violations demonstrates a serious, programmatic breakdown in the MIP process. Based on its analysis of the circumstances surrounding the apparent violations, TVA has concluded the following:

- TVA did not make a significant change in a construction process without NRC notification.

- The number and nature of the deficiencies, upon further review are not indicative of a programmatic breakdown in the overall materials program at WBN. Nonetheless, TVA has taken or planned a number of actions to address the issues identified by NRC and enhance the MIP process.

- To date, the reviews of issued indeterminate material have resulted in the need for only one hardware correction.

- Overall the MIP program has been effective in preventing material of unknown quality from being installed in safety-related plant applications.

APR 29 1992

- The accomplishment of a number of resource intensive actions as part of MIP has greatly improved the overall effort to resolve materials concerns at WBN.

Therefore, TVA concludes that, while certain implementation corrective actions and enhancements are necessary to bolster the MIP process, the efforts to resolve materials issues at WBN, including MIP, remain effective in providing reasonable assurance that materials issued for construction and maintenance are adequate.

The enclosed response provides a detailed discussion of TVA's review of these matters. Should any questions arise during the staff's review, TVA would be pleased to provide additional information or meet with the staff if necessary to provide any needed clarification.

Sincerely,

John H. Garrity

Enclosures
cc: See page 3

APR 2 9 1992

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ENCLOSURE

RESPONSE OF TENNESSEE VALLEY AUTHORITY
TO NRC INSPECTION REPORT NO. 50-390/92-03 AND 50-391/92-03

I. INTRODUCTION

As requested in NRC Inspection Report No. 50-390/92-03 and 50-391/92-03, dated March 16, 1992, TVA provides the following response to the issues identified in the report. TVA will address the concerns and apparent violations identified by the staff and explain the actions taken or planned which support the continued release of materials for construction and maintenance.

TVA wishes to assure the staff that management recognizes the concerns identified with work controls in the materials area and has initiated improvements to resolve these concerns. Actions taken to date in response to the specific concerns include, among other things, training to emphasize the requirement for physical relocation of materials undergoing evaluation as part of the Materials Improvement Project (MIP) and process changes to modify the sequence for tagging of items in MIP. TVA also recognizes that past approved procedures have not clearly explained how the MIP process is performed and therefore has developed new procedural instructions to govern activities under MIP. TVA discussed the issue of new and revised procedures with the Region II staff and the senior resident inspector on April 16, 1992. The procedures were issued on April 17, 1992.

TVA also wishes to emphasize that it did not reduce the effectiveness of work controls in the materials area after construction restart, nor did it make a process change without following the established protocol for these changes. A new procedure, Quality Assurance Instruction (QAI)-10.03, "Material Sanitization QA Program," was put in place after construction restart, but only after a documented evaluation was performed in accordance with agreements reached with the staff pursuant to NRC's November 26, 1991 restart letter. TVA does not believe the new procedure significantly changed work practices or controls, although the procedure did lack clarity. QAI-10.03 has been revised to more clearly define the original intent.

TVA recognizes that the concerns identified in the inspection report indicate deficiencies in the implementation of the MIP process. TVA also recognizes that these deficiencies were in large part due to failure by responsible line managers to critically self-assess their program activities, and to ensure that sufficient management attention was brought to bear on issues requiring various organizations to be involved in problem resolution. However, TVA does not believe that the apparent violations indicate a programmatic breakdown in the overall materials control program. The NRC recognized that TVA has strengthened material controls significantly since construction was stopped in December 1990 (discussed in WBN Inspection Report 91-29). With the further actions taken or planned, TVA believes that the MIP effort will remain effective in providing reasonable assurance that materials issued for construction and maintenance are acceptable.

II. BACKGROUND ON MATERIALS IMPROVEMENT PROJECT

The Replacement Items Program (RIP) Corrective Action Program (CAP) Plan for Watts Bar was established to resolve potential deficiencies with the quality of safety-related replacement items installed in the plant before June 5, 1991. MIP is a separate effort which provides for the review and reverification of inventory materials procured and received before June 5, 1991, but not yet installed in the plant. The project was established as a corrective action for several deficiency reports (CAQRs/SCARs) initiated from 1987 to 1991 and an employee concern (CATD 40800-WBN-1), which raised questions about the quality of the existing materials inventory.

The purpose of MIP is to provide a systematic process, known as "sanitization," for reevaluating the safety classification, storage, tagging, file maintenance, and documentation of the subject materials, and for conducting "receipt inspections" to reverify material quality. The effective date of MIP was established as June 5, 1991, for quality assurance (QA) Level I and II items only. Items in inventory as of that date required a sanitization package or a quality release before they could be issued. (Items issued before June 5, 1991, are to be evaluated under the RIP CAP.) As discussed below, the inclusion of QA Level III (nonsafety-related, commercial grade) items in the MIP program was consciously planned to begin two weeks prior to construction restart. QA Level III items are defined in Site Standard Practice (SSP)-10.05, "Technical Evaluation for Procurement of Materials and Services," as:

> Those materials, components, and spare parts related to basic components that do not affect the safety-related function of the basic components. Also includes any materials, components, or spare parts of limited QA and quality-related items that have attributes that are specifically required to meet engineering or regulatory requirements which are not basic components.

MIP is a comprehensive effort to resolve documented concerns with inventory material. The project involves a 100 percent review of the subject items against procurement engineering requirements which are consistent with current nuclear industry procurement standards, as defined in Nuclear Power Standard 10.5, "Technical Evaluation for Procurement of Materials and Services." The project also includes confirmatory physical inspections of the material where necessary to verify acceptance.

In brief, the sanitization process involves essentially the following steps:

- Material selected for sanitization is physically relocated to a designated area for processing.

- The MIP engineering group develops a sanitization package for inventory stock items covered by MIP and reviews the existing documentation on the items, including the original quality control receipt inspection report, and develops any new documentation required.

- A quality engineer from the QA Department reviews each of the sanitization packages to ensure its adequacy and completeness. Among other things, the quality engineer specifies those attributes which require confirmatory inspection for acceptance of the item.

- Quality control inspectors perform the inspection required for acceptance. (At the time of the NRC inspection, this step followed material tagging.)

- Accepted material is tagged as acceptable and made available for issue to the plant.

Before construction restart, the NRC conducted a review of the materials control area at Watts Bar, including the MIP process. The NRC's inspection is documented in WBN Inspection Report 91-29. No violations or deviations from applicable standards were identified, although some minor deficiencies were noted.

III. RESPONSE TO GENERAL NRC CONCERNS

A. PERCEIVED REDUCTION IN WORK CONTROLS

The cover letter to the inspection report expresses a concern that work controls in the material inspection area were reduced significantly without notification of the staff, contrary to one of the commitments made before construction restart. The concern relates to TVA's adoption of QAI-10.03, "Material Sanitization QA Program," on January 17, 1992.

The NRC's November 26, 1991 letter approving construction restart states: "Changes that could significantly change the way work is done, alter the criteria for work, or reduce the effectiveness of work controls will be coordinated with the NRC before implementation." As set forth below, the changes made were not significant and the processing of these changes followed the agreed upon protocol.

PROCEDURE CHANGE EVALUATION

During the inspection of the materials control area before restart, and at the suggestion of the NRC inspector, TVA developed SSP-10.B, "Materials Improvement Project," to specifically address MIP and obtained NRC review of the procedure before the conclusion of Inspection 91-29. SSP-10.B does not, however, provide detailed

instructions on MIP, but rather invokes portions of the normal materials handling/procurement-related procedures SSP-10.01 through SSP-10.05 which govern new procurement, new receipt inspection, storage, issue of material, and generation of procurement engineering packages.

In particular, SSP-10.B invokes portions of SSP-10.02 "Materials Receipt and Inspection," which sets forth instructions on how to carry out receipt inspection for new procurements. However, quality engineer/quality control activities in MIP were not defined in detail by SSP-10.02, because MIP materials had previously been through the receiving/storage process. As a result, a special instruction, QAI-10.03, was developed for the MIP quality engineering/quality control activities and implemented on January 17, 1992.

TVA management established a checklist process in order to review proposed changes that could fall within the scope of the construction restart letter. The checklist requires an evaluation of whether there is a significant reduction in effectiveness of programs or the quality of the restart "baseline." TVA performed a checklist evaluation of QAI-10.03 and concluded that there was no significant reduction in work controls. The checklist was completed on January 15, 1992.

While TVA acknowledges that QAI-10.03 could have been written more clearly, it was not TVA's intent to relax any process controls, but rather to clarify and enhance the existing MIP program.

QUALITY CONTROL INSPECTION CONTROL

QAI-10.03 did not displace any of the existing procedures applicable to MIP; rather, it provided a specific procedure for quality engineering and quality control personnel to use in carrying out their functions under MIP. QAI-10.03 was not clearly written in certain areas. The lack of clarity apparently gives the impression that QAI-10.03 allows quality engineers to perform receipt inspections for safety-related items. However, this was not TVA's intent. TVA has revised the procedure to clarify this matter. TVA has also verified that only qualified quality control inspectors have been used for receipt inspection activities for safety-related items.

The principal purposes of QAI-10.03 was to proceduralize the respective activities of quality engineering and quality control personnel in the sanitization process. Quality engineers review the engineering output document (i.e., sanitization package) and develop the inspection plan to be implemented by quality control. The intent of QAI-10.03 was to provide guidance for accepting previous receipt inspection results if the documentation was adequate.

The quality engineers did not and do not perform quality control inspection activities for safety-related items, but rather perform

inspection planning. For example, if the original quality control receipt inspection verified certain critical characteristics for an item and the engineering evaluation determines that this verification was adequate, the quality engineer could indicate that confirmatory inspection of those critical characteristics was not needed. By use of a signed inspection attribute checklist, the quality engineer would also determine the necessity for quality control confirmatory inspection of QA Level III items (nonsafety-related, commercial-grade). For QA Level III items with no special technical or quality requirements this quality activity can be construed as an inspection in that these items were accepted by this process. However, only qualified quality control inspectors performed the confirmatory inspection functions for safety-related items and those QA Level III items for which the quality engineers determined that physical receipt inspection was required. QAI-10.03 was not intended to permit quality engineers to perform safety-related receipt inspection functions, nor did the quality engineers perform those functions. The inspection function remained the responsibility of quality control inspectors certified to ANSI N45.2.6.

TVA believes that its practice is acceptable and has not resulted in inadequate performance. This practice was utilized before construction restart. QAI-10.03 was not intended to reflect a change in work controls in this regard, but rather to better document the controls which were in-place and functioning.

TAGGING SEQUENCE

A flowchart attached to SSP-10.02, which is the general procedure for receipt inspection, indicates that material identification tagging is to occur sometime after quality control inspection. This flowchart, which was initiated after MIP began and illustrated the specific tagging and inspection sequence for the first time, was overlooked by MIP personnel. The following sequence of events illustrates how this deficiency occurred.

- When MIP was initiated, the existing materials procedures required receipt inspection and material tagging, but the procedures did not specify the tagging sequence.

- MIP management established a process to require the tagging of items before quality control inspection. This ensured that the quality control inspection would verify proper tagging of items before release. Items in the sanitization process were to be segregated in order to preclude the possibility of tagged items being prematurely released to the field in advance of quality control inspection. The MIP tagging sequence was inconsistent with the normal receipt inspection process onsite, but was not in violation of the existing procedures for receipt inspections and tagging which were silent on sequence.

- When Materials personnel developed the new procedure, SSP-10.02, "Material Receipt and Inspection," they included a flowchart illustrating for the first time the sequence of tagging in use in the normal receiving area and apparently did not recognize that the tagging sequence was different in MIP.

- The training provided to both MIP and other materials personnel on the new procedure SSP-10.02 indicated that no changes were being made to existing processes. Again this occurred because the developers of the training did not recognize the different sequence of tagging in MIP.

- The text of SSP-10.02 does not reference the flowchart, and the personnel involved in the sanitization process apparently did not recognize that the existing MIP tagging sequence was different from that indicated in the flowchart. Because of the repetitive nature of their activities, MIP personnel were not expected to refer continuously to the procedure. Accordingly, MIP personnel were unaware of the procedure inconsistency and therefore took no steps to modify either the flowchart or the process.

  However, as discussed in Section IV.G, deficiencies occurred with the segregation process in the Power Stores area that made the order of the tagging sequence critical. There was an exception clause in the requirement to segregate where size or configuration prohibited segregation. The MIP manager decided that it was impractical to physically segregate items in Power Stores and took advantage of the exception clause in the procedure. However, he did augment the tagging process to provide a visible indication of which items were in the sanitization process. He apparently felt this was equivalent to physical segregation. In retrospect this was not a good decision, but it was not contrary to the procedure.

  QAI-10.03 is silent on the tagging sequence, and thus did not change the existing practice concerning the sequence of tagging and quality control inspection in MIP. TVA nevertheless understands the significance of this issue and, as discussed below, has modified the MIP tagging process such that tagging occurs after quality control acceptance as indicated in the flowchart attached to SSP-10.02.

B. EFFECTIVENESS OF MIP

The NRC expressed concern that the nature and number of the violations may indicate that the MIP process has failed to achieve its purpose. NRC further indicated that the apparent violations indicate significant deficiencies in the implementation of the MIP process. TVA considers MIP to have accomplished significant improvements in the materials area and TVA believes that completion of the corrective actions outlined below will correct the noted implementation problems and maintain the overall effectiveness of the MIP process.

The deficiencies in the MIP process were largely identified to WBN senior management through the Concern's Resolution Program. (TVA understands that similar concerns have been identified to NRC.) When the employee concerns were brought to senior management attention, TVA promptly assembled a special team to investigate alleged deficiencies in the MIP program. Thus, the process for identification of issues was underway at the time of the NRC inspection, although the need for corrective measures may not have been recognized by the line organization as quickly and effectively as it should have been.

With respect to the apparent violations concerning lack of adequate measures to prevent indeterminate material from being installed in safety-related applications and the failure to identify critical characteristics of a commercial-grade item, TVA's evaluation to date indicates that these issues were isolated cases within the MIP process. Regarding the issuance of QA Level III items of indeterminate quality, these examples occurred due to a single management decision not to include such items in the MIP process before November 7, 1991, and have limited safety significance. Reviews that have been undertaken to assess the extent of these conditions are described below.

As for issues dealing with tagging/segregation of materials, TVA's evaluation indicates that most of the concerns were limited to commodity items (i.e., materials of small size that were housed in bins and cabinets) located in Power Stores. Power Stores has been permanently closed, and a single control point (Warehouse B) has been designated.

TVA is particularly concerned about the release of items of indeterminate quality. Those few items that were released to the plant for use in safety-related applications have been tracked to their end-use and have been dispositioned. However, only one hardware correction involving a bearing replacement was required.

It should also be noted that most of the examples concern the release of QA Level III materials (nonsafety-related, commercial grade). Such materials include items related to basic components, but with no

safety-related function within that basic component, as well as items with augmented technical and quality requirements unrelated to 10 CFR Part 50, Appendix B, requirements. Because QA Level III items are not used for safety-related applications, they have limited safety significance to plant operation. Nevertheless, QA Level III items have been included within the scope of MIP since construction restart, and QA Level III items released between June 5, 1991 and construction restart are being reviewed to ensure that no problems exist with the use of this material in the plant.

TVA has significantly enhanced the materials control program at Watts Bar since construction was stopped by TVA in December 1990. These enhancements include, among other things, a file maintenance lookback program, improved warehousing facilities, improved issue station with positive control, materials control of staging, the establishment of MIP sanitization program, and new quality control hold areas for nonconforming material.

NRC noted that TVA "strengthened the evaluation process used to determine the adequacy of stored material before being released to the field for installation" in Inspection Report 91-29. In sum, excluding consideration of the QA Level III items which have limited safety significance, the remaining number of apparent violations is reduced significantly. With the corrective steps outlined below, TVA believes that the MIP process is adequate to allow the release of materials for construction and maintenance.

IV. SPECIFIC RESPONSE TO APPARENT VIOLATIONS

A. APPARENT VIOLATION 1

Apparent Violation 1 indicates that TVA failed to establish adequate measures to prevent material of unknown quality from being installed in the plant. Various examples are cited, relating to certain bearings, Raychem splices, and QA Level III items. Details regarding these examples are provided below. As discussed below, most of the examples cited in apparent Violation 1 involved QA Level III materials (nonsafety-related, commercial grade) and arose as a result of a single action -- namely, the decision to exclude such items from the MIP process during the period from June 5, 1991 until two weeks prior to construction restart (November 7, 1991).

- In paragraphs 4.A.1.a through c, and g, the inspection report cites cases where ball bearings classified as QA Level II were released for installation to safety-related applications without being sanitized. These bearings, originally procured as QA Level III, were intended to be dedicated as QA Level II through a Procurement Engineering Group (PEG)-prepared generic dedication package in 1990. The Material Acquisition Management System (MAMS) data base subsequently listed the bearings as QA Level II,

consistent with the PEG dedication package. The dedication package also required that the bearings in inventory were to be placed on "hold" pending completion of receipt inspection for each bearing to be dedicated. However, the bearings were never placed on hold and thus remained in Power Stores labeled QA Level III. The bearings were considered by Materials clerks to be eligible for release without sanitization because at the time of their issuance in August 1991, MIP excluded QA Level III materials.

Of 1557 QA Level III issues before QA Level III material was included in the MIP program on November 7, 1991, 1278 have been reviewed to date and no other examples of deficiencies have been identified. This data indicates that the only QA Level III material misclassified was restricted to the commodity of ball bearings. Thus, TVA believes that this was an isolated event. Had QA Level III been included in the process initially, the bearings would not have been released without being sanitized.

- Paragraphs 4.A.1.d through f cite cases where Raychem splices were released for installation prior to sanitization. Although the documentation was not available for review at the time of inspection, the Raychem splices in question had been subjected to a "quality release" on June 13, 1991. The practice of performing quality releases was authorized by SSP-10.04, "Material Issue, Control, and Inspection," and was implemented in accordance with normal PEG practices as defined in SSP-10.05, "Technical Evaluation for Procurement of Materials and Services." Quality release was defined as a systematic series of events performed by PEG which ensured that technical and QA requirements have been accomplished which renders the item qualified for its safety-related purpose. This process was applied only when a portion of the material in stock was made available for issue.

  Raychem Kit TIIC No. ARG-415Q was issued by TVA Form 575, No. 277395 on June 28, 1991. The quality release (QR-91-0061) was dated June 13, 1991, and sent to Nuclear Stores with the TVA Form 575, and the correct Raychem sleeving was released. As a result of this quality release, five contracts were reviewed, the material found acceptable for installation, and tagged. Subsequent issues of the same Raychem material were made on TVA Form 575 Nos. 277692 dated July 24, 1991, and 277364 dated August 16, 1991. Although not proceduralized, it was the practice of issue personnel that if the material and contract being issued were noted on the original quality release form, further material of the same contract could be released without requesting an additional quality release. Even though TVA Form 575 Nos. 277692 and 277364 were issued without referencing quality release QR-91-0061, the material and contract number were in fact listed on the original quality release. Although the documentation was not readily available at the time of the inspection, the issued

Raychem splices were acceptable for installation because the engineering evaluation had been satisfactorily completed. Further review indicated that all of the original material associated with the contracts listed on the quality release were properly tagged.

- Paragraph 4.A.2 cites a number of examples of QA Level III items released between June 5, 1991 and December 17, 1991, which were not included in the sanitization process. All of the examples cited in the inspection report were issued to nonsafety-related applications. QA Level III items are nonsafety-related, commercial grade components that do not perform safety functions in safety-related installations (i.e., items that are not used as "basic components"). Items such as tie wraps, for example, are classified QA Level III.

  Because of its limited safety significance, QA Level III material was not included in the MIP process initially. TVA intended, however, that this material would be included in MIP beginning two weeks prior to construction restart. On November 7, 1991, MIP included QA Level III items. TVA believes that the priority of the MIP process was appropriate in initially focusing on safety-related components (QA Levels I and II). Based on TVA's review to date, QA Level III items released during the period of June 5, 1991 through November 7, 1991, do not affect the safety-related function of any basic component.

  NRC also suggests that, between November 7 and December 17, 1991, some QA Level III materials were issued without being sanitized. TVA's evaluation indicates that during this timeframe some quality-related materials were issued to nonquality-related applications (these instances included various QA levels). In addition, a single issuance of unsanitized material to a quality-related application occurred (subsequent sanitization shows this item to be acceptable). TVA initially identified these conditions and documented them in WBPER910483 (dated November 27, 1991). As discussed in Section H below, the first condition mentioned above reoccurred due to improper understanding of material issue procedures by stores personnel. Although these items were issued without a sanitization package, all QA Level III materials included in this population were covered by MIP, since such items were included as of November 7, 1991. Therefore, the reason why materials were issued unsanitized between November 7 and December 17, 1991, is unrelated to the decision to not include QA Level III materials in MIP prior to November 7, 1991.

REASON FOR THE CONDITION

TVA's evaluation indicates that the installation of items of indeterminate quality issued prior to November 7, 1991, and cited in paragraph 4.A.1 of the inspection report, occurred because QA Level III materials were consciously not covered by the MIP program during this period. Further, between November 7 and December 17, 1991, the failure by stores personnel to follow material issue procedures resulted in the issuance of unsanitized materials.

ACTIONS TAKEN OR PLANNED

The installation of items of indeterminate quality, cited in paragraphs 4.A.1.a through g of the inspection report, and the related weakness in work practices are of concern to TVA. Problems in these areas were identified in Problem Evaluation Reports (PERs) WBPER920003 initiated January 6, 1992, and WBPER910483 initiated November 27, 1991, as well as through the employee concern program and the NRC's inspection. TVA management is correcting the problems through the following actions:

- The bearing cited in paragraph 4.A.1.a has been replaced. The bearing cited in paragraph 4.A.1.b was found to have been procured as QA Level II and sanitized through a quality release, and is therefore considered acceptable. The bearings cited in paragraphs 4.A.1.c and g were issued, but not installed.

- Power Stores issue area was permanently closed on February 18, 1992, and materials have not been issued from this source since that time.

- Warehouse B was established as the control point for the release of material for installation in the plant.

- As an interim measure, a quality engineer was placed at the issue counter in Warehouse B to maintain control through a final review of released material.

- To ensure that material which was previously "Q" stamped during sanitization will not enter "available for issue" stock without completing the sanitization process, in-process material was located and removed to the MIP segregated sanitization area. The practice of utilizing "Q" stamps to signify materials which have completed the sanitization process has been stopped. Thus, in-process material which is stamped with a red "Q" is required to be retagged before completing the sanitization process. The "Q" stamps have been collected and destroyed. Material is now labeled with a pink tag after completing the sanitization process. "Q" stamped material which had previously and successfully passed through the MIP program will remain acceptable.

- Materials and Procurement personnel have been trained on the above actions.

The actions specified above have been verified by Materials management and an independent QA assessment as being adequate measures to prevent materials of indeterminate quality from being issued to the field. In addition to the above measures, MIP will review those QA Level III issues which were made from June 5, 1991 to November 7, 1991, which is the implementation date for SSP-10.4, Revision 3. Of 1557 issues made during this period, TVA has reviewed 1278 issues with no problems identified.

B. APPARENT VIOLATION 2

Apparent Violation 2 concerns inadequate records for documenting material installed in the plant (paragraphs 4.A.1.a through c). In brief, the apparent violation involves inadequate maintenance records to document traceability of the bearings (a TVA Form 575 was not referenced in the work packages). TVA's evaluation, discussed below, indicates that this was an isolated maintenance deficiency and not a concern with the functioning of the MIP process.

REASON FOR THE CONDITION

Failure to follow maintenance procedures and a lack of attention to detail by personnel involved.

ACTIONS TAKEN OR PLANNED

- The problem was documented by PER WBPER920032 initiated on February 14, 1992. A sample of approximately 120 maintenance requests (MRs) were reviewed to determine the extent of the condition. All of these MRs were determined to be acceptable. Two work documents did not comply with administrative requirements; however, material traceability was confirmed as part of the corrective action. The two work documents and associated deficiencies are as follows:

  WO 91-07908-00 - TVA form 575 attached but not referenced.

  WO 91-05750-00 - TVA form 575 was referenced but not attached.

  The deficiencies listed have been corrected.

- Before commencement of maintenance work on February 18, 1992, a briefing was held with Maintenance personnel to make certain that all material used in conjunction with a work document is properly procured and the TVA forms 575 are referenced on the work document and attached to the package. In addition, expectations were established for completed work documents to clearly identify material usage.

C. APPARENT VIOLATION 3

Apparent Violation 3 concerns the failure to verify the critical characteristics of a commercial-grade item as required by the associated dedication package (paragraph 4.A.3). As the inspection report recognizes, the critical characteristics for the item were properly identified in the engineering (dedication) package.

REASON FOR THE CONDITION

Inspection attributes were not provided to the quality control inspector. This was due to lack of attention to detail to the requirements of the generic PEG package for the dedication of bearings. In reviewing the MIP sanitization package and preparing the inspection plan, the quality engineer did not specify the critical characteristics for verification during the MIP inspection. As discussed below, TVA's evaluation indicates that this was an isolated oversight by the responsible quality engineer.

ACTIONS TAKEN OR PLANNED

- Quality engineers responsible for providing inspection attributes to the receipt inspectors have been informed of the nature of the deficiency which brought about the apparent violation and the importance of attention to detail.

- The engineering sanitization package was reviewed and corrected (i.e., critical characteristics were inspected) on the day the inspector identified the condition while the item was in the receipt inspection process.

- TVA has reviewed the previous dedication packages generated by MIP to determine if similar problems exist. A total of 698 QA Level II TIICs were evaluated with only minor deficiencies identified. Specifically, eight of the QA II TIICs had the critical characteristics documented as acceptable on the inspection report and not on the critical characteristics form as required by the engineering package. The sanitization packages for the eight TIICs are being revised and the previously acceptable inspection results will be documented on the appropriate form, which will be appended to the inspection reports.

- Quality engineers have been retrained in the materials dedication processes and procedures.

D. APPARENT VIOLATION 4

Apparent Violation 4 concerns the failure to identify the applicable inspection procedure and revision for ASME Code materials on the form used for MIP sanitization receipt inspections.

REASON FOR THE CONDITION

The form utilized by quality control inspectors did not reference the applicable procedure and revision. This occurred because the master form did not include this information, and it was also used to generate the working copies. This omission was not caught during administrative reviews.

ACTIONS TAKEN OR PLANNED

- The master form has been revised to include the missing reference information.
- Procedure QAI-10.03 has been revised to include the new form.
- Personnel have been provided with the new form.
- Receipt inspection checklists for ASME materials which have been generated by MIP personnel will be reviewed and the applicable procedure and revision numbers to which the inspections were conducted will be added.

E. APPARENT VIOLATION 5

In apparent Violation 5, the NRC indicates that the flowchart attached to SSP-10.02 specifies that tagging is to be completed after quality control acceptance.

The NRC found, by field inspection, that the tagging sequence specified by the flowchart contained in SSP-10.02 was not being followed in that tags were being applied prior to quality control inspection and acceptance. The NRC further stated that this resulted in a lack of control in the material tagging area and was a significant change in the program approved by the NRC on November 26, 1991.

As outlined in Section III A of this enclosure, the development of the flowchart in SSP-10.02 did not recognize or take into consideration the existing MIP sequence of tagging. MIP management wanted the tags to be placed before quality control inspection, so quality control could include the adequacy of the tag and its application as part of their acceptance inspection. With MIP, the practice of tagging prior to quality control inspection was acceptable because the process was to take place in a segregated area specifically designated for that function.

When SSP-10.02 was issued, the sequence of tagging specified in the flowchart was different from the intended practice for MIP. This change was not caught during MIP management's review of the procedure. The text in the new procedure did not address the tagging sequence. The training provided to both MIP and materials personnel,

upon issue of the new procedure, stressed that no process changes were made by the new procedure from that originally defined in Administrative Instruction (AI)-5.2 which was silent on the relative sequence of tagging and inspection.

TVA has addressed above and in Section III A the reasons why the new procedure did not reflect a change in the work practices in MIP with regard to the tagging sequence. TVA nevertheless recognizes the concerns identified with the use of tagging before quality control inspection. TVA has modified the tagging practice such that quality control inspectors will affix the proper tags, or witness tagging, after acceptance. Both SSP-10.B and QAI-10.03 have been revised to reflect this tagging practice.

REASON FOR THE CONDITION

- MIP management was unaware of the flowchart in new procedure SSP-10.02 which indicated a tagging process different from that used in MIP and thus made no effort to adjust either the flowchart or the existing process. A contributing factor was that the text of SSP-10.02 made no reference to the flowchart.

- MIP personnel were also unaware of the changes to the defined process because training on the new procedure (SSP-10.02) stressed that no processes were changed from the previous procedure (AI-5.2) which did not address the sequence of tag application.

ACTIONS TAKEN OR PLANNED

- The tagging sequence has been modified to require that quality control inspectors will either affix tags or witness the application of tags by others after acceptance of the material.

F. APPARENT VIOLATION 6

Apparent Violation 6 involves potential inadequacies in the MIP receipt inspection process. From paragraphs 4.B.1 and 4.B.4 of the inspection report, it appears that the staff was concerned with the potential that QAI-10.03 could allow quality engineers, who are not certified to the requirements of ANSI N45.2.6, to perform quality control inspections. From paragraph 4.B.4, it appears that the staff was also concerned with the apparent contradiction within QAI-10.03 regarding the acceptance of previous quality control inspection results.

QUALITY ENGINEERING INSPECTION PLANNING

It was not the intent of QAI-10.03 to allow quality engineers to perform quality control inspection functions for safety-related material. The MIP process allows quality engineers to perform

inspection planning, i.e., to direct which attributes are important and require verification.

This planning is accomplished for safety-related items (QA Levels I and II) through the review of the sanitization package, which includes previous receipt inspection records, and the generation of an inspection plan identifying the attributes which require confirmatory inspection by quality control. In addition, by use of a signed inspection attribute checklist, the quality engineer would determine the necessity for quality control confirmatory inspection of QA Level III items. This activity essentially resulted in inspection of QA Level III (nonsafety-related, commercial grade) items by quality engineers for those items for which the quality engineer determined that no receipt inspection by quality control was required. However, only qualified quality control inspectors performed the confirmatory inspection functions for safety-related items and those QA Level III items for which the quality engineer did determine that physical receipt inspection was required.

USE OF PREVIOUS RECEIPT INSPECTION RESULTS

TVA considers it acceptable in QAI-10.03 to utilize the results of previous receipt inspections when determining which attributes require confirmatory inspection during the MIP process. QAI-10.03 guides quality engineers in making engineering evaluations as to whether or not credit can be taken for prior quality control receipt inspections results. Whether the results can be credited is determined by the engineering evaluations as stated in QAI-10.03. MIP recognizes the validity of previous quality control inspection results if the receipt inspection reports are adequate and complete.

One purpose of MIP was to resolve problems with previous procurement/receiving/handling practices such as those identified in SCAR WBP880542SCA. A review of the underlying conditions addressed in the SCAR does not indicate problems with quality control receipt inspections. Thus, TVA feels confident in utilizing the results of specific prior receipt inspections.

TVA is confident that the receipt inspection practices performed in support of MIP activities provide results consistent with the objectives of the MIP program. However, TVA recognizes that QAI-10.03 did not clearly describe the actual practices. Therefore, QAI-10.03 has been revised to provide clear guidance, practices, and responsibilities for QA personnel involved in MIP activities.

REASON FOR THE CONDITION

There was a lack of QA management attention in approving the procedure as written.

ACTIONS TAKEN OR PLANNED

QAI-10.03 has been revised to remove ambiguous wording concerning utilization of the results of previous inspections and to include clear directions that all MIP receipt inspections for acceptance are to be performed by quality control inspectors qualified to ANSI N45.2.6.

G. APPARENT VIOLATION 7

NRC identified this apparent violation as a failure to follow procedures for physical segregation of material undergoing sanitization.

The nature of the material in Power Stores (i.e., approximately 30,000 TIICs which consists of many small items) made control of material difficult during relocation. The MIP manager believed that the nature of the many small materials made physical relocation impractical. Other materials requiring special storage facilities (i.e., flammable materials, chemical toxins, and radioactive sources) were also considered impractical for relocation.

Section 2.1.2 of SSP-10.B states that, "...once materials have been selected for the evaluation process, they are to be physically relocated (unless size or configuration prohibits) to a segregated storage location." The MIP manager decided that the exception clause above gave him the flexibility to implement a process that did not rely on physical relocation of materials where circumstances warranted. Accordingly, the MIP manager developed and implemented a flagging process to achieve segregation and prevent issue. In Power Stores, the process was not effective, because some of the flagging became displaced. In retrospect, the flagging process was not a good decision in that this form of control made the tagging sequence critical. Since tagging occurred before the final quality control approval, some in-process materials appeared to be ready for issue. TVA recognizes that the Power Stores practices did not achieve adequate segregation of materials and has taken steps to correct these practices through adoption of a revision to SSP-10.B to further restrict exceptions to the requirements for physical relocation. Further, MIP personnel have been trained on the need for physical relocation as detailed in procedure SSP-10B.

REASON FOR THE CONDITION

As identified in the subject inspection report, there was a failure to fully achieve the segregation of materials in the sanitization process in the Power Stores area.

The causes of this apparent violation are as follows:

- A management decision was made to accomplish segregation by means other than relocation.

- Although the responsible manager believed that this practice would enable him to better meet the project schedule without impacting the quality of the overall program, he did not recognize that failure to physically relocate in-process material made the order of the tagging sequence critical.

ACTIONS TAKEN OR PLANNED

- In-process sanitization materials from the Power Stores warehouse have been removed and relocated to the segregated MIP warehouse areas.

- The practice of storing unsanitized and sanitized materials together in designated issue area has ceased, including material requiring special storage facilities.

- For materials requiring special storage facilities (i.e., flammable materials), physical separation has been provided within the special storage facilities.

- Power Stores has been closed as an issue station.

- Warehouse B has been established as the control point for the release of materials for installation in the plant.

- Meetings with MIP personnel have been conducted by the MIP manager to stress verbatim compliance to the procedures and to emphasize the need for physical segregation of in-process material.

- SSP-10.B has been revised to state that physical relocation is required unless specifically approved by the Materials and Procurement manager.

H. APPARENT VIOLATION 8

The inspection report identified one apparent violation involving failure of the site's corrective action program, in that corrective action for PERs WBPER910483 and WBPER920003 was apparently ineffective.

With respect to WBPER910483, this PER identified that unsanitized material had been issued for non-QA uses. Corrective action (training for materials personnel and a memorandum issued by the Nuclear Stores manager on December 5, 1991) was completed on December 9, 1991, and yet unsanitized material was released for non-QA uses after that date. The recurrence of this practice was due to inadequate management communication of the corrective actions and because the responsible manager did not follow-up to ensure that remedial actions were being properly implemented. However, because all releases were to nonquality-related applications, there was no safety significance from the release of such materials.

With respect to WBPER920003, the PER was initiated on January 6, 1992. This PER identified that there were inadequate administrative controls over MIP materials, which could allow unsanitized materials to be issued for installation in the plant. Specifically, the PER stated that material was being tagged as "ready for issue" before it had completed the receipt inspection portion of the MIP sanitization process. The PER further identified that material in Power Stores identified for sanitization had not been segregated in accordance with SSP-10.B, paragraph 2.1.2, in effect at the time the PER was written.

At the time of the NRC inspection, corrective actions were in process to make procedure changes and post signs on the material to indicate that material was still undergoing sanitization to correct the conditions reported on the PER.

During this time, NRC inspectors conducted a review of the Power Stores area to determine the effectiveness of the corrective actions concerning PER WBPER920003, and concluded that little action had been taken to segregate material in this area as required by SSP-10.B. As indicated in other apparent violations, the inspectors found material undergoing the sanitization process which had not been physically segregated from other materials. Material was found tagged "ready for issue" in this area which was, in fact, not ready for issue since quality control inspection was not complete.

REASON FOR THE CONDITION

Materials and Procurement management failed to implement and verify the effectiveness of corrective actions which had been put into place for WBPER910483. As noted above, management inadequately communicated the corrective actions for this PER, and furthermore, the responsible manager did not follow-up to ensure implementation of the corrective actions. Also, Materials and Procurement management failed to take timely corrective action for WBPER920003. The significance of the PER was not appreciated initially, and little action was taken on the PER for approximately 30 days. After discussions with the inspector, the report was elevated to a SCAR and interim corrective actions were put into place. TVA agrees that there was a lack of aggressiveness and timeliness in addressing the issues noted in WBPER920003.

TVA has evaluated the management implications of its actions on the two PERs and concludes that responsible managers failed to ensure that adequate attention was given to these matters. Specifically, at the time WBPER920003 was initiated, a question was raised by QA management as to whether this PER was a duplicate of WBPER910483. The involved managers debated the issue, but failed to promptly resolve their differences. Although discussions and investigations were ongoing, the result was a stagnation in the process of correcting concerns raised in WBPER920003.

The process of monitoring the quality of the MIP process in its early stages was most reasonably the responsibility of the materials management. However, monitoring and follow-up on employee-identified issues were ineffective in dispositioning the emerging concerns that were identified in the two PERs and which later were among the concerns identified by NRC inspectors. Thus, TVA concludes that had greater scrutiny of early MIP implementations been applied, these concerns likely would have been resolved in a timely manner.

ACTIONS TAKEN OR PLANNED

- Management has performed follow-up assessments to ensure that the original corrective actions for WBPER910483 have now been effectively implemented.

- Materials and Procurement management and personnel have been notified of the failure concerning material's implementation of the corrective action program.

- Materials managers and other key personnel have been trained by the WBN corrective action coordinator on the corrective action program.

- Each Materials and Procurement manager will conduct corrective action program training sessions for employees in their sections,

including TVA contractors emphasizing appropriate thresholds for problem identification.

- Enhancements in the management structure within the QA and Materials organizations have been implemented.

- QA has established a new trending program which is focused on management controls and attentiveness to repetitive problems.

V. CONCLUSION

The above discussion provides an analysis of the apparent violations identified in NRC's inspection report. In sum, TVA believes that the principal cause of the deficiencies in the MIP process derived from the failure to provide a formal and detailed definition of the program at its inception. This lack of formal definition resulted in inconsistent, and in some instances, inaccurate interpretation of program requirements. Several factors compounded this result, such as instances of ineffective self-assessment and follow-up by line management, and adherence to detail in the implementation of procedural requirements by materials and QA personnel involved in MIP.

Each of the specific implementation deficiencies is of concern to TVA. However, based on an analysis of the apparent violations and development of specific corrective actions, TVA concludes that the deficiencies do not represent a breakdown in the overall materials program at WBN. Further, and as previously discussed, no significant reduction in work controls occurred. Therefore, with the implementation of the specific corrective actions stated above, TVA concludes that the MIP effort will remain effective in providing reasonable assurance that materials issued for construction and maintenance are adequate.

TVA's conclusions are supported by two principal factors. First, the combined safety significance of the apparent violations is limited. As discussed above, the matter concerning issuance of material of indeterminate quality to safety-related applications was isolated to a single commodity line, i.e., ball bearings. Further, while one issue has required the removal of a bearing, the large majority of the materials released without sanitization involved QA Level III items that by definition have no safety-related applications. In addition, among the eight apparent violations, several arose from the same set of facts and thus are overlapping in nature. Several others (notably the maintenance matter, the failure to specify critical characteristics for one item, and the ASME/form matter) were isolated minor deficiencies resulting from administrative or personnel errors. Thus, while TVA is concerned with these implementation problems, the apparent violations when considered together do not demonstrate a programmatic breakdown in the materials program at WBN.

Second, TVA has taken a close look at the MIP process and has determined that certain corrective actions and enhancements are needed. The details of these actions were discussed above. Among the more notable actions described are the comprehensive "extent-of-condition" reviews that have been performed, training (particularly regarding utilization of the existing corrective action program at WBN and stricter adherence to the details of program requirements), and procedural changes to further define and clarify the MIP process. TVA believes that the specific corrective actions and enhancements described in this response represent a significant improvement to the MIP process.

In addition, while these specific actions in response to the apparent violations are important, it is also essential to recognize the significant efforts that have already been accomplished through the MIP process as part of the overall program to resolve materials concerns at WBN. Of particular note, these actions include: (1) significant materials facilities improvements; (2) the file maintenance lookback effort (i.e., review of about 12,000 PEG packages); (3) reduction of the previous backlog of PEG packages (i.e., 3,000 down to about 300 line items); (4) resolution of materials issues related to electrical cable storage; (5) close out of open materials "quality deficiencies" (CAQRs, employee concerns, etc.). These resource-intensive efforts have moved resolution of materials concerns at WBN ahead and will serve as the base upon which TVA can build an even stronger program.

Therefore, based on the above considerations, TVA believes that, while certain corrective measures and enhancements are necessary to the MIP process, the program design remains adequate, and the corrective actions and enhancements taken and planned will help ensure adequate implementation of the program.