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JAN 28 1991

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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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 NO. 390, 391/90-22 -
REPLY TO VIOLATIONS 390/90-22-05 AND 390/90-22-09

TVA has reviewed the subject inspection report and provides the enclosed responses. Enclosures 1 and 2 provide TVA's responses to violations 390/90-22-05, Failure to Perform Quality Control Inspections, and 390/90-22-09, Improper Storage and Handling, respectively. Corrective actions taken by TVA to resolve violation 390/90-22-05 have been completed. Enclosure 3 contains the commitments to resolve violation 390/90-22-09.

TVA discussed the delay in submitting a final report on these violations with the Region II staff on December 20, 1990, January 4, 1991, and January 10, 1991.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

Mark O. Medford

Enclosures
cc: See page 2

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U.S. Nuclear Regulatory Commission

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ENCLOSURE 1

RESPONSE TO NRC NOTICE OF
VIOLATION 390/90-22-051.0 DESCRIPTION OF VIOLATION 390/90-22-05

Part 50 of Title 10 of the Code of Federal Regulations, Appendix B, Criterion X, "Inspection," is implemented in part by the Nuclear Quality Assurance Plan (NQAP), paragraph 9.1.2.C, which endorses ANSI N45.2-1971, and states that inspections shall be performed by NQA, or other qualified individuals approved by NQA, utilizing graded approach criteria in accordance with controlled plans or instructions which specify attributes to be verified in accordance with requirements and acceptance criteria. The licensee's procedure Administrative Instruction (AI)-1.8, "Plant Housekeeping," Revision 16, requires that Nuclear Stores Manager perform an inspection no less than once a year.

Contrary to the above, on August 28, 1990, the inspector found that the inspection frequency of Nuclear Stores Hut 22 was not in accordance with AI-1.8, Revision 16, and Inspection Plan U02-0001-001, because the required inspection in 1989 was not conducted, and the required inspection in 1990 was conducted approximately five months late.

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

2.0 ADMISSION OR DENIAL OF VIOLATION

TVA admits the violation.

3.0 REASON FOR VIOLATION

WBN procedure AI-1.8, "Plant Housekeeping," requires the responsible person to inspect their area once a month using the Appendix B checklist, and to document the inspection in accordance with the Appendix C checklist. By memorandum dated August 14, 1990, the acting manager of Nuclear Stores assumed and assigned subordinate responsibility for housekeeping inspections of storage huts in accordance with AI-1.8. That memorandum required a housekeeping inspection for Hut 22 on the 15th of each month. These inspections are intended to focus on housekeeping and occupational safety attributes.

As identified by the NRC inspector in the subject inspection report, the inspection frequency of Nuclear Stores Hut 22 was not in accordance with AI-1.8, in that there were no records for inspections conducted in 1989 and only one record of inspection for 1990.

ENCLOSURE 1

RESPONSE TO NRC NOTICE OF
VIOLATION 390/90-22-05

In investigating this matter, TVA found that Nuclear Stores personnel were conducting housekeeping inspections of the storage areas including Hut 22 at the frequency required by AI-1.8. However, copies of the inspection records were not being retained as required by AI-1.8. This procedure requires that documentation of housekeeping inspections for each plant storage area be maintained as quality assurance (QA) records. However, Nuclear Stores personnel were discarding the preceding inspection records each month. This was based on an unresolved conflict between the Document Control group and Nuclear Stores on what storage records constituted QA records.

In addition to the failure to retain AI-1.8 Nuclear Stores inspection records, it was discovered that Site Quality Assurance (SQA) Materials inspectors failed to complete required storage inspections. WBN procedure AI-5.6, "Material Storage," requires QC personnel to perform and document periodic inspection of storage areas. These inspections are to be completed at least once a year. To implement this requirement, QC had initiated Quality Control Inspection Plan U02-0001-001, "Storage Inspections," requiring a quarterly quality control inspection of the storage areas. However, the SQA Materials inspectors were concentrating on completing other inspections and failed to complete the subject inspections. Two factors contributed to this:

1. WBN SQA Material Unit was in the process of supporting an increased workload, and scheduling of storage inspection activities was inadvertently overlooked. WBN failed to initiate a Condition Adverse to Quality (CAQ) to document late inspections.
2. These inspections were not scheduled in any WBN tracking program that would alert management to take appropriate action.

4.0 CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

Nuclear Stores personnel involved with generating AI-1.8 inspection reports have been instructed to turn them into their supervisor upon completion. These records are then to be transmitted to Document Control Records Management (DCRM) unit for retention as QA records. As a follow up to this instruction, Nuclear Stores personnel were retrained in the requirements of AI-1.8. To document this failure by Nuclear Stores to maintain inspection records as QA records, WBN initiated Problem Reporting Document (PRD) WBN 900408P.

ENCLOSURE 1

RESPONSE TO NRC NOTICE OF
VIOLATION 390/90-22-05

To ensure that SQA Materials personnel conduct inspections with the frequency required by TVA procedures, the SQA Material unit has added additional personnel to meet work loads. With these additional inspectors, the SQA Materials unit has performed and documented storage inspections of those Nuclear Stores identified storage areas in accordance with Inspection Plan U02-0001-001. These inspections have established a baseline from which SQA inspectors have developed a quarterly inspection program. The frequency requirements for inspections have been incorporated into a scheduling program that will provide inspector and management attention to any upcoming or late inspections. To document this failure of SQA to complete the required inspection identified in the subject violation, WBN initiated PRD WBN 900398P.

The Site Quality Manager has issued a directive to the SQA Materials unit emphasizing the requirement to complete procedure scheduled inspections on time. This directive also requires missed/late inspections to be documented in accordance with the corrective action program.

5.0 CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATIONS

Nuclear Stores personnel are continuing to perform monthly inspections in accordance with AI-1.8. These completed inspection reports are being transmitted to DCRM for retention in accordance with AI-1.8 requirements for record management. Copies of the inspection records completed since the subject inspection were retrieved to ensure the records were being maintained for retrievability as required.

To ensure attention to scheduled SQA Materials unit inspections is provided, a computerized notification program (TROI) is now being utilized for SQA storage inspection. This program is structured to provide 30-day advanced notification of any required periodic inspection and to track the inspection to completion. The Nuclear Stores storage area inspections conducted by SQA material inspectors were previously not included in this tracking program. This program now assures site QA management overview of scheduled activities including inspections. Scheduled inspections that approach their due date now receive management attention.

6.0 DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

TVA is in full compliance with procedure requirements.

ENCLOSURE 1

RESPONSE TO NRC NOTICE OF
VIOLATION 390/90-22-057.0 SUPPLEMENT INFORMATION

During the investigation of the subject violation, TVA found that material storage inspections were not being completed by Nuclear Stores personnel at the frequency required by AI-5.6. To document the failure by Nuclear Stores to complete these inspections, WBN initiated corrective action report PRD WBN 900426P.

TVA transferred storeroom responsibility from Operations Support in Chattanooga to the WBN site director's organization in 1988. At this same time TVA also restructured the then Nuclear Quality Assurance Manual (NQAM) to reassign periodic storage inspection requirements from Nuclear Stores to the WBN QC organization. Nuclear Stores was aware of this change that no longer required Nuclear Stores inspections, but failed to revise implementing procedure AI-5.6 to reflect the transfer of inspection responsibility to QC.

As part of the corrective action for PRD WBN 900426P to prevent recurrence Nuclear Stores personnel were trained to AI-5.6 inspection frequency and Appendix C inspection criteria requirements. Quarterly inspections are now being performed by Nuclear Stores personnel at the specified frequency. This was verified by a review of inspection records.

ENCLOSURE 2

RESPONSE TO NRC NOTICE OF
VIOLATION 390/90-22-091.0 DESCRIPTION OF VIOLATION 390/90-22-09

Part 50 of Title 10 of the Code of Federal Regulations, Appendix B, Criterion XIII, "Handling, Storage, and Shipping," is implemented in part by the Nuclear Quality Assurance Plan (NQAP), paragraph 9.6, which endorses ANSI N45.2.2-1972 and requires that measures shall be established such that items, including consumables, under the scope of the quality assurance (QA) program are handled, stored, and shipped by qualified individuals in a manner to prevent deterioration, contamination, damage, or loss of identification in accordance with approved engineering and procurement documents.

The licensee's procedure Administrative Instruction (AI)-5.6, "Material Storage, Handling, and Shipping Requirements for Watts Bar Nuclear Plant," Revision 17, requires that all items be plainly marked so they are easily identified without excessive handling or unnecessary opening of crates and boxes, and physical mixing of items identified as QA Level I or II and QA Level III is prohibited.

Contrary to the above, on August 28, 1990, the inspector identified items stored in Nuclear Stores Storage Hut 22 in a manner that failed to comply with AI-5.6 in that some items had no identification label and some QA Level I or II items were not physically separated from QA Level III items.

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

2.0 ADMISSION OR DENIAL OF VIOLATION

TVA admits the violation.

3.0 REASON FOR THE VIOLATION

As identified in the subject inspection report, some of the items inspected failed to comply with the storage requirements of AI-5.6. AI-5.6 requires that all items be plainly marked so they are easily identified without excessive handling or unnecessary opening of crates and boxes, and physical mixing of items identified as QA Level I or II and QA Level III is prohibited.

ENCLOSURE 2

RESPONSE TO NRC NOTICE OF
VIOLATION 390/90-22-09

The causes of this violation are as follows:

- There was lack of attention to detail by Nuclear Stores to ensure that an adequate and ongoing material marking/tagging program was being maintained in compliance with AI-5.6 requirements. Marking/tagging requirements were evolutionary; depending upon the vintage of the material and the program which was in place to provide procurement document tagging instructions, different degrees of identification and marking/tagging were acceptable. Differing visual aids, i.e., bin tags of various colors, box markings with contract number and receipt date, item ID tags of metal and paper, were employed in order to make material easily identifiable to Nuclear Stores personnel without excessive handling or unnecessary opening of crates and boxes.
- AI-5.6, Revision 17, paragraph 3.2.1.A.8, prohibits physical mixing of differing QA levels (1-3) and specifies that physical separation of items by use of bins, trays, drawers, and for larger items, storage racks and open floor areas can be used. Nuclear Stores misinterpreted this requirement to limit its application to prohibiting bulk or loose materials, such as bolts, nuts, from sharing the same container, i.e., box, crate, bag; but did not interpret it as meaning that different QA levels of items could not share the same bay, shelf, etc., when wrapped, boxed, crated, and identified in an individual fashion. The material tag or item marking was being used as the primary method of physical separation. While the manner in which the materials were separated was consistent with ANSI 45.2.2, it was not in strict compliance with AI-5.6 which required more stringent separation requirements for packaging, shipping, receiving, storage, and handling of items.

4.0 CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

WBN has addressed the nonconformances identified in the NRC notice of violation. Each nonconformance and the corrective actions taken to address them are discussed in the attachment to this enclosure.

A training session on AI-5.6 storage control requirements was performed by the Nuclear Stores Manager on October 22, 1990. Included in the training program was a discussion of the requirements violated and the future expectations concerning materials control, tagging, separation, etc.

In addition to the quarterly inspection required by AI-5.6, to provide additional assurance, Nuclear Stores is performing a more detailed materials storage inspection of all Nuclear Stores storage locations. This activity is scheduled for completion by April 19, 1991. Any identified discrepancies will be corrected by December 31, 1991. Immediate actions will be taken to mitigate any discrepancies with safety related equipment.

ENCLOSURE 2

RESPONSE TO NRC NOTICE OF
VIOLATION 390/90-22-09

At the direction of the Site Quality Manager, a multidisciplined task team performed an overview of selected site storage areas to determine the general implication of NRC's findings on WBN's material control program. The task team identified instances similar to those identified in the subject violation. The majority of the instances identified were inconsistencies in the storage, handling, and identification of material. Differences were observed in material control, types of tags being used, and identification practices because current procedures do not reflect the way past material and components were stored and handled.

While the task team summarized that the general condition of the material storage areas and the overall material program were in compliance with TVA's commitments and standards, inconsistencies, e.g. tagging do, in fact, exist. Recommendations were made to enhance the program by establishing a consistent level of marking and tagging, and to revise the storage procedures to clearly define current requirements and past practices related to tagging, marking, and storage. WBN is developing an improved warehouse storage plan which will address those recommendations which apply to Nuclear Stores.

5.0 CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

A training session on AI-5.6 storage control requirements was performed by the Nuclear Stores Manager on October 22, 1990. Included in the training program was a discussion of the requirements and the future expectations concerning material control, tagging, separation, etc.

The SQA Materials unit has strengthened its storage inspection program and tracking process to ensure compliance with procedures, commitments, and completion of inspections in a timely manner. This was also addressed in our response to 390/90-22-05.

A standard change notice (SCN) to TVA Standard 5.3.8, Revision 0, "Handling, Storing, and Shipping," was issued for multisite review on November 8, 1990, and was incorporated into AI-5.6 by IC 90-724. This clarified physical mixing of items identified as QA Levels 1, 2, or 3 as follows:

"Separate items by use of bins, trays, drawers, tags, wrappings, etc., and use storage racks and open floor areas for larger items. Segregate bulk items (i.e., store them in boxes, crates, bags) in a manner which ensures traceability to receipt documentation.

NOTE: Items with different QA levels may be stored in the same location, bin, bay, etc., but may not share the same container."

This is now consistent with the requirements of ANSI N45.2.2.

ENCLOSURE 2

RESPONSE TO NRC NOTICE OF
VIOLATION 390/90-22-09

6.0 DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

A reinspection has been performed by TVA to ensure the Hut 22 storage area is now acceptable or nonconforming conditions identified.

SCN request to Standard 5.3.8, Revision 0, has been incorporated into AI-5.6 by IC 90-724.

The boiler feed pump rotor is scheduled to be included in a preventive maintenance program by February 28, 1991.

In addition to the quarterly inspection required by AI-5.6, to provide additional assurance, Nuclear Stores is performing a more detailed materials storage inspection of all Nuclear Stores storage locations. This activity is scheduled for completion by April 19, 1991. Any identified discrepancies will be corrected by December 31, 1991. Immediate actions will be taken to mitigate any discrepancies with safety related equipment.

The improved warehouse storage plan being developed by Nuclear Stores addressing the task team recommendations is scheduled for completion by December 31, 1991.

RESPONSE TO SPECIFIC NRC CONCERNS
IN VIOLATION 390/90-22-09

WBN has addressed the nonconformance identified by the NRC inspector. Actions are described as follows:

- ISSUE - Large wooden crate, open at top, nearly full of assorted bolts and nuts and other items; this crate and its contents were not marked for identification.

NOTE: At the time of the inspection, a surplus sale was in progress, and the crate had been temporarily located to the front side of Hut 22 until the surplus sale was completed.

CORRECTIVE ACTION - These items were relocated to the surplus area, all tags and markings were removed, and the material has been sold. Pallets containing surplus material are required to be marked/tagged with identification.

NOTE: In accordance with AI-5.4 requirements, nontraceable material cannot be issued for quality-related applications.

- ISSUE - Coil of 6-inch diameter hose was stored directly on the floor and was not marked for identification.

CORRECTIVE ACTION - The hose was subsequently inspected by Nuclear Stores for physical damage and accepted. It was then placed on a pallet. Nuclear Stores' review determined that the material was properly marked with a tag containing the contract number, and identified as non-QA material.

- ISSUE - Large springs were stored uncovered and identified only as Contract No. 69490B, Part No. 10408; these springs showed surface rust film and were carelessly stored across the top of an apparently unrelated carton. The licensee subsequently identified these springs to be replacement parts for Birch Stud tensioners.

CORRECTIVE ACTION - Nuclear Stores' review identified that the springs were non-QA and to be acceptably marked for non-QA material with contract number, date received, TVA Item Identification Code (TIIC), and bin location. These were subsequently individually wrapped. The storage level for springs, ANSI Level "C," was identified at receipt. The surface rust was deemed acceptable by Nuclear Stores receiving personnel. The springs were removed from the nonrelated carton and properly located. There was no noted damage to the nonrelated carton.

RESPONSE TO SPECIFIC NRC CONCERNS
IN VIOLATION 390/90-22-09

- ISSUE - Several unidentified loose parts were found near Bay 8.

CORRECTIVE ACTION - Nuclear Stores was unable to reconstruct or locate the subject material. There was a box of valve parts identified by a credit Form TVA 575N in the general area specified. Any loose or unidentified material may have been relocated.

NOTE: Nuclear Stores cannot issue nontraceable quality related material per AI-5.4.

- ISSUE - Carton of small clamps, marked RD-103769, was found open at the top and was not properly sealed and marked for identification.

CORRECTIVE ACTION - Nuclear Stores determined after further review that the subject clamps were properly marked in accordance with AI-5.6 requirements, in that the carton was marked. The practice for containers which have less than a complete box remaining for issue was that the issue person would remove or open the top of the box in such a fashion to alert another issue person of an incomplete container. Nuclear Stores personnel are now closing containers and inserting material ID tags/stickers beneath or atop the container in a conspicuous way so that subsequent issues from the box can be made. (Broken Container Concept)

- ISSUE - Pallet load of 50 lb bags of Acid-R grout was not marked for identification.

CORRECTIVE ACTION - This material was non-QA and had been brought to Nuclear Stores for surplus actions. Because of overcrowding in the surplus area of Hut 22 (rear) Nuclear Stores personnel had temporarily located it in the front section of the hut, but without proper surplus identification. Nuclear Stores properly flagged it as surplus material and relocated it to the surplus side of the hut. Subsequently, the Chemistry Section initiated a credit Form TVA 575N to retain the material and return it to stock.

- ISSUE - Springs were found wrapped in plastic, but with deteriorated tape sealing end openings, and were not marked for identification; an adjacent QA II replacement part spring for ITT Grinnell air-operated diaphragm valve was marked as contract number 260378.

CORRECTIVE ACTION - Nuclear Stores removed the deteriorated tape and retaped the end openings. Both springs were QA Level II and were found to have correct markings, i.e, contract number and receipt date. Nuclear Stores' practice is to place one bin tag per defined area to identify the TIIC descriptive content, then each item is individually marked for traceability with the particulars, i.e., contract number, receipt date, associated work document, as applicable.

RESPONSE TO SPECIFIC NRC CONCERNS
IN VIOLATION 390/90-22-09

- **ISSUE** - Boiler feed pump rotor marked skid No. 51870, showed no evidence of recent preventive maintenance (licensee had identified in IR90-3729).

CORRECTIVE ACTION - This item is a non-QA item and was being stored as a spindle, which caused it not to be picked up in the Preventative Maintenance (PM) Program. Problem Reporting Document (PRD) WBP900479P was written to review this condition. Maintenance engineers have contacted Westinghouse to determine what preventive maintenance actions are required.

- **ISSUE** - Bearings for main generator showed no evidence of recent preventive maintenance (licensee identified IR90-3729).

CORRECTIVE ACTION - No corrective action was required. Nuclear Stores' review indicated that this item does not require a PM per AI-5.6. Any maintenance necessary is performed at installation in accordance with Westinghouse recommendations.

NOTE: This action was previously identified by quality engineering (QE) materials inspector before the NRC visit.

- **ISSUE** - Bay 5 contained a box marked QA II GE#6517965G4, 2000 amp interlock assembly that was next to a box marked QA III GE#6517965G5, 1200 amp interlock assembly.

CORRECTIVE ACTION - The items were separately controlled by packaging and had markings which clearly established their individual traceability. Nuclear Stores requested a revision to TVA Standard 5.3.8 to clarify the requirement for the segregation of QA material. This revision clarified that items may be located in areas together as long as they are uniquely identified and do not share the same container. The subsequent change to AI-5.6 was completed by issuance of Instruction Change (IC) 90-724.

- **ISSUE** - Bay 6 contained two boxes (non-QA) marked AWD968B and AWD67D that were on top of a box marked 316329 that contained a QA I air cooler.

CORRECTIVE ACTION - Nuclear Stores' review indicated that the items were properly marked for individual traceability. Revision request to TVA Standard 5.3.8 and changes to AI-5.6 clarified individual traceability and segregation as previously noted.

RESPONSE TO SPECIFIC NRC CONCERNS
IN VIOLATION 390/90-22-09

- **ISSUE** - Bay 8 contained items stored on four pallets; three had non-QA check valves, the fourth had a QA I stainless steel butterfly valve disc marked 260410 and two boxes of non-QA gate valves.

CORRECTIVE ACTION - Each of these items was clearly identified for individual traceability. Revision request to TVA Standard 5.3.8 and changes to AI-5.6 clarified individual traceability and segregation as previously noted.

- **ISSUE** - Identification tags were not tightly adhering and entirely legible in all cases; many tags were paper inserts in a metal holder wired to the item; due to aging, some information on the paper tag was difficult to read; some tags were in plastic bags that were not tightly affixed to the carton containing the item.

CORRECTIVE ACTION - Nuclear Stores has identified the bin tags that were illegible and/or loose and has corrected them.

NOTE: There were no instances found where QA material was not properly identified to the item or its container.

- **ISSUE** - Items stored on the mezzanine level were not readily accessible for identification and inspection; a ladder was available, but the mezzanine level had no handrails and walkways for personnel access.

CORRECTIVE ACTION - Nuclear Stores has relocated materials in this area to provide a walk space on the mezzanine. WBN has completed the installation of the required handrails.

ENCLOSURE 3

LIST OF COMMITMENTS

A preventive maintenance program is scheduled to be in place by February 28, 1991, to include the boiler feed pump rotor.

In addition to the quarterly inspection required by AI-5.6, to provide additional assurance, will perform a more detailed materials storage inspection of all Nuclear Stores storage locations by April 19, 1991. Any identified discrepancies will be corrected by December 31, 1991. Immediate actions will be taken to mitigate any discrepancies with safety related equipment.

The improved warehouse storage plan being developed by Nuclear Stores is scheduled for completion by December 31, 1991.