



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

Report Nos.: 50-390/95-67 and 50-391/95-67

Licensee: Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Docket Nos.: 50-390 and 50-391

Construction Permit Nos.:
CPPR-91 and CPPR-92

Facility Name: Watts Bar Nuclear Plant, Units 1 and 2

Inspection Conducted: September 25 - October 13, 1995

Inspector: M. Thomas
M. Thomas, Reactor Inspector

11-13-95
Date Signed

Accompanying Inspector: G. Harris, McGuire Resident
Inspector

Approved by: P. Fredrickson
P. Fredrickson, Chief
TVA Construction Branch
Division of Reactor Projects

11/13/95
Date Signed

SUMMARY

Scope:

This routine, announced inspection was conducted to review the overall progress and completion status of the Vendor Information (VI) Corrective Action Program (CAP), follow up on previous NRC inspection findings, and follow up on Generic Safety Issues.

Results:

In the areas inspected, violations or deviations were not identified.

The CAP was essentially complete with the exception of some punchlist items still remaining. The overall conclusion was that the issues which led to implementation of the VI CAP have been addressed and that the CAP had been adequately implemented.

Enclosure

Followup and status of previous NRC inspection findings:

- (Open) VIO 390/87-05-01, Hydrogen Analyzer Design (Example 1 of this VIO, which involved the VI CAP, has been reviewed and will be closed in this inspection report. Example 2 of this VIO is being reviewed for closure and will be addressed in inspection report 50-390, 391/95-77)
- (Closed) VIO 390/93-27-01, Use of Unapproved Vendor Information
- (Closed) IFI 390/93-27-04, Resolution of Field Verification Walkdown Discrepancies
- (Closed) VIO 390/95-10-01, Failure to Initiate a SCAR for Recurring Deficiencies Involving Vendor Information
- (Closed) VIO 390/95-51-01, Failure to Follow Procedures in Reviewing Vendor Information

Followup and status of Generic Safety Issues (GSI)

- (Closed) GSI 75 (B077) Item 2.1, Equipment Classification and Vendor Interface Reactor Trip System Components
- (Closed) GSI 75 (B086) Item 2.2.1, Equipment Classification for Safety-Related Components
- (Closed) GSI 75 (L002) Item 2.2.2, Vendor Interface for Safety-Related Components

REPORT DETAILS

1.0 Persons Contacted

1.1 Applicant Employees:

- *R. Baron, Acting Manager, Nuclear Assurance and Licensing
- P. Biljak, Engineer, Vendor Information Program
- *W. Elliott, Nuclear Engineering Manager
- R. Johnson, Engineering Support Manager, Nuclear Engineering
- *D. Kehoe, Site Quality Manager
- *W. Lewellyn, Compliance Licensing Engineer
- D. Malone, Audits and Assessments Manager, Nuclear Assurance
- *R. McCollom, Planning and Technical Superintendent, Maintenance
- J. Norris, CAP/SP Manager, Nuclear Assurance
- *P. Pace, Compliance Licensing Manager
- *V. Patuzzi, Quality Assurance Specialist, Nuclear Assurance
- *J. Rupert, Site Engineering and Materials Manager
- *J. Scalice, Site Vice President
- *B. Schofield, Site Licensing Manager
- *J. Seeley, Vendor Program Manager, Nuclear Engineering
- *W. Skiba, Trending Manager, Nuclear Assurance
- *O. Zeringue, Senior Vice President Operations

Other applicant employees contacted included operators, engineers, QA personnel, craftsmen, and administrative personnel.

1.2 NRC Employees:

- *S. Cahill, Operations Resident Inspector
- P. Fredrickson, TVA Construction Branch Chief, Region II
- J. Lara, Construction Resident Inspector
- P. VanDoorn, Operations Senior Resident Inspector
- *G. Walton, Construction Senior Resident Inspector

*Attended exit meeting

Acronyms and initialisms used throughout this report are listed in the last paragraph.

2.0 Vendor Information Corrective Action Program

2.1 Background

TVA had identified a number of problems with their VIP at WBN through various CAQRs, employee concerns, TVA audit findings, and NRC inspection findings. Specific problems identified included: (1) vendor information that was inadequately evaluated for implementation; (2) vendor information that did not match the plant configuration; (3) vendor information that was inconsistent with related TVA developed design input/output documents; (4) incorrect or

out-of-date vendor documents; (5) inadequate vendor document control program; (6) lost or uncontrolled vendor manuals; and (7) installations that were not approved by TVA Engineering.

TVA identified the root causes of these problems to be: (1) vendor documents were not considered as documents requiring configuration control; (2) inadequate procedural requirements to govern the receipt, review, distribution, filing, control, maintenance, and use of information; and (3) a lack of attention to detail.

The VI CAP was established to resolve and prevent recurrence of deficiencies with vendor information at WBN and to provide reasonable assurance that VTDs for safety-related equipment at WBN would be current, complete, and appropriately updated for the life of the plant. The VI CAP was also intended to address NRC concerns identified in Generic Letter 83-28 relative to the control of vendor information.

The NRC performed an inspection (50-390, 391/93-27) to examine TVA's activities and controls implemented for the VI CAP at the 75 percent completion milestone. The inspection was performed to ensure that CAP elements were completed or properly focused and to sample installed equipment for proper installation and configuration. The inspection concluded that the VIP was adequate in identifying and incorporating vendor information into VTM. The inspection also identified several findings which indicated weaknesses in the VIP at the 75 percent completion milestone. The NRC performed subsequent inspections (50-390, 391/95-10 and 50-390, 391/95-51) to review the completion status of the VI CAP and the applicant's corrective actions to address previous NRC findings. The NRC continued to identify examples involving the improper use vendor information and the NRC documented a concern that TVA had not provided an adequate justification to support the VI CAP objective of reasonable assurance that the installed hardware configurations were in accordance with vendor requirements. As a result of the NRC questions and concerns, the applicant's Nuclear Assurance organization initiated a special assessment (NA-WB-95-0146) to evaluate the extent and significance of vendor information related findings over the last year.

2.2 VIP Completion Status

The inspectors reviewed various activities and related documentation performed by TVA to address the issues associated with the VI CAP. This included performing field verification of installed equipment, reviewing the status of various program elements such as VI CAP scope, vendor manual update, confirmation of plant adequacy, and recurrence controls. The inspectors reviewed closure packages for selected CAQRs related to the VI CAP. Nuclear Assurance assessment reports and associated actions to address the assessment findings were reviewed also. Some of the program elements were reviewed in conjunction with closure of previous NRC findings which are discussed in paragraph 4 of this report.

After reviewing activities for the various VI CAP program elements and related documentation, the inspectors determined that the VI CAP was essentially complete. There were still a few items on the punchlist which were not

closed, but the applicant was working toward completing the remaining items. The inspectors concluded that the issues which led to development of the VI CAP had been addressed by the applicant.

3.0 Performance Review of Vendor Manual Information

The inspectors reviewed the VTMs for selected safety related components. Controlled copies of the manuals were reviewed to identify vendor recommended attributes to be verified in the plant by field walkdowns. Pertinent documentation was reviewed to determine if vendor information had been properly applied and if the information in design output documents, work implementing documents, and VTMs/VTDs was consistent and accurate. The inspectors determined that the VTMs reviewed were accurate and up-to-date. Approximately 40-45 components were inspected in the field. The inspectors did not identify any discrepancies associated with vendor information and the VI Program. Following are the results of the walkdown inspections involving vendor information.

3.1 Molded Case Circuit Breaker Replacement

The applicant implemented a program to replace MCCBs supplied by ITE (frame types EF3 and FJ3) that were no longer available. The breaker types were used in Class 1E motor control centers. The replacement MCCBs for ITE frame types EF3 and FJ3 were ITE/Siemens ED63 and FXD63, respectively. The MCCBs were replaced in accordance with Engineering Specification N3G-933, Generic Substitution Application. The replacement breakers were electrically interchangeable but required retrofit installation brackets (ED63 RETRO, FXD63 RETRO) to make the new MCCBs mechanically interchangeable. The inspectors reviewed vendor technical manual WBN-VTM-AS04-0010, Vendor Technical Manual for ITE Motor Control Centers, Revision 18, and selected various attributes to be verified during field inspections. Attributes selected for review included mounting of the retrofit kit, type of installation and mounting hardware used, electrical terminations, and torque requirements.

The inspectors reviewed WO packages and related installation documentation for approximately 40-50 MCCBs and performed field inspections of 25 installed MCCBs. In addition to reviewing the VTMs, the inspectors reviewed the following procedures and instructions which specified installation requirements for the MCCBs:

- MAI-3.3, Cable Terminating, Splicing, and Testing for Cables Rated up to 15,000 Volts
- MAI-3.8, Installation of Electrical Components
- DS-E4.5.2, Mounting Small Electrical Components
- MI-57.27, Initial Testing of Molded Case Circuit Breakers
- MI-57.103, Torque Values for Electrical Terminations

- General Engineering Specification G-38, Installation, Modification, and Maintenance of Insulated Cables Rated up to 15,000 Volts
- General Engineering Specification G-53, ASME Section III and Non-ASME Section III (Including AISC, ANSI/ASME B31.1, and ANSI B31.5) Bolting Material

During the field inspections and review of the various WO packages which documented the installation of the MCCBs, the inspectors noted that the mounting hardware specified in the VTM (vendor technical document WBN-VTD-FA05-0020) was different from that used in the field. The VTM specified using 1/4-20 by 3/4-inch bolts (1/4-inch diameter, 20 threads per inch, and 3/4-inch length) and lock washers to install the retrofit kit that was supplied with the new MCCBs. The VTM specified torquing the bolts to 80-inch pounds. The inspectors noted that self-tapping hex washer head screws were used to mount the retrofit kit and the screws were tightened using the applicant's "snug tight" requirement (as specified in MAI-3.8 and DS-E4.5.2) rather than the torque value that was specified in the VTM. The inspectors questioned the difference in installation hardware and torquing requirement used, since the VTM contained information which indicated that the seismic qualification testing for installation of the retrofit kit was based on the kit being installed using 1/4-20 by 3/4-inch fasteners, lock washers, and torqued to 80-inch pounds. During further review of the VTM, the inspectors noted that the vendor had evaluated the applicant's snug tight requirement and determined that snug tight met or exceeded the 80-inch pounds torque value. After questions were raised by the inspectors, the applicant evaluated use of the hex washer head screws for mounting the retrofit kit and concluded that the installations met seismic qualification requirements because the fasteners used were the same diameter and equivalent material. The inspectors reviewed the evaluation of the retrofit kit installation and determined that the applicant's conclusion was acceptable.

During further review of the installed MCCBs, the inspectors noted that 1/4-28 by 1/2-inch slotted head machine screws were used to attach the compression connectors to the circuit breaker terminals. The inspectors further noted that lock washers were used on some of the terminal connections, but the majority of the terminal connections did not have lock washers. The VTM specified using 1/4-28 by 1/2-inch socket head cap screws with conical washers, and torquing the screws to 50-inch pounds. The inspectors noted that the applicant used the snug tight requirement (as specified in MAI-3.3 and MI-57.103) for tightening the terminal connections. The inspectors questioned the applicant with regard to the terminal connections not being in accordance with the VTM. Based on the inspectors' questions, the applicant performed an evaluation of the MCCB terminal connections. The inspectors reviewed the evaluation which stated that the MCCB installations were in accordance with Section D2.0 of MAI-3.3 and were acceptable. Section D2.0 specified tightening requirements for connections at MCCBs and other equipment having slotted screw terminals. The MAI specified a snug tight connection and did not require a conical washer or a lock washer. The MAI defined snug as tightened until either the lug is in full contact with the terminal point or the lock washer is fully compressed. The inspectors determined that the

applicant's evaluation of the MCCB terminal connections was acceptable. The inspectors performed field inspections of the following MCCBs:

1-BKR-001-0017-A	1-BKR-003-0033-A
1-BKR-018-0055/1-A	1-BKR-018-0054/1
1-BKR-030-0004E-B	1-BKR-030-0037H-B
1-BKR-030-0461	1-BKR-030-0474-B
1-BKR-031-0288	1-BKR-061-0051-A
1-BKR-062-0091-B	1-BKR-063-0001A-A
1-BKR-067-0009B-A	1-BKR-067-0010A
1-BKR-067-0095-A	1-BKR-068-0084-A
1-BKR-068-0332-B	1-BKR-072-0021-B
1-BKR-074-0021B	1-BKR-074-0035-B
1-BKR-082-A1/1-A	1-BKR-082-0100-A
1-BKR-082-0181	1-BKR-083-0001-A
1-BKR-214-B001/5B-B	

After reviewing the WO packages, inspecting installed MCCBs, and questioning engineering personnel regarding the installations, the inspectors concluded that the MCCBs were installed adequately and in accordance with procedures.

3.2 Component Inspections

In addition to inspecting the MCCBs listed above, the inspectors performed field inspections of other installed components to verify that vendor attributes were addressed. Components inspected included the following:

0-MTR-078-0019-A	0-MTR-078-0020-B
1-MTR-067-0431-A	1-MTR-067-0440-B
1-MTR-082-0181	1-MTR-082-0210
1-MTR-082-0211	0-FAN-031-0011
0-FLTR-031-0087	0-MTR-031-0011
1-ISV-070-0798	1-MTR-062-0104-B
1-PMP-062-0104-B	1-STN-062-0244
1-TE-062-0104K	1-FCV-003-0048
1-FCV-003-0090	1-FCV-003-0103

The inspectors reviewed field installation of the above components and concluded that the attributes selected for review were appropriately addressed. The inspectors did not have any questions regarding installation of the above components.

4.0 Followup on Previous Inspection Findings

4.1 (Open) VIO 390/87-05-01, Hydrogen Analyzer Design

This violation involved two examples where design and regulatory requirements were not correctly translated into design specifications, drawings, and procedures. The first example involved critical vendor installation requirements for the hydrogen analyzer sample lines were not considered or included by specification, drawing, procedure, or instruction. The second

example involved classes of cleanness that were not prescribed in specifications or drawings for equipment in an "in-place" storage status.

The applicant responded to this violation in a series of letters dated between June 18, 1987, and March 8, 1994. These responses described the corrective actions that were being developed and implemented to address the two violation examples. Corrective actions included implementation of the VI CAP and the DBVP CAP to address the programmatic aspects of violation Example 1, which involved the hydrogen analyzer; and implementation of the ANSI Verification Program to address the programmatic aspects of violation Example 2, which involved the classes of cleanness for equipment storage.

With regard to violation example 1, the applicant's actions to correct the specific deficiencies related to installation of the hydrogen analyzers were consolidated into CAQR WBP900397SCA. These actions included the installation of isolation valves inside and outside of containment to meet the isolation requirements of Design Criteria WB-DC-40-34, installation of vacuum trap assemblies to address the slope related issues, and the elimination of the air supply from the station air compressor by replacing it with bottled air supplies. The NRC has reviewed CAQR WBP900397SCA and the associated corrective actions and verified that they have been completed. In addition to verifying completion of the corrective actions in the CAQR, the inspectors also reviewed the completed preoperational test results and verified that the hydrogen analyzers operated in accordance with design and vendor requirements during testing.

The applicant issued CAQR WBP870701 to track the generic deficiency regarding inadequacy in the implementation of vendor requirements. One of the objectives of the VI CAP was to address the deficiencies in the use and control of vendor information. The inspectors noted that this CAQR was included in Attachment 1 to the VI CAP as a basis document for the CAP. The inspector further noted that VIO 390/87-05-01 was also included in Attachment 1 to the VI CAP as a basis document for the CAP. This applies more specifically to Example 1 of the violation. Thus, the inspector reviewed the corrective actions for this CAQR and this violation example in conjunction with other activities related to completion of the VI CAP.

Based on the above reviews, the inspector concluded that the corrective actions taken by the applicant have addressed Example 1 of VIO 390/87-05-01. Example 2 of this violation will be reviewed and addressed in IR 50-390/95-77.

4.2 (Closed) VIO 390/93-27-01, Use of Unapproved Vendor Information

This VIO involved two examples where site procedural requirements for control and use of vendor information were not followed. In the first example, the applicant issued a WO authorizing work in accordance with a WTB prior to NE review, approval, and incorporation into the approved VTM as required by Procedures SSP-6.02, Maintenance Management System, and SSP-2.10, Vendor Manual/Information Control. Controls for conditional use of vendor information, as detailed in the latter procedure, were also not followed. The work involved replacement of screws and the installation of locking devices on

the positioner linkage of the pressurizer spray valves. This condition was documented in PER WBP930079.

The applicant responded to this VIO on June 14, 1993: Corrective actions included placing the WO on hold, incorporation of the WTB into the VTM, and replanning the WO to reference the revised technical manual. Eleven WOs that utilized vendor manuals were reviewed to ensure that unapproved manuals had not been used. The cause was identified as lack of attention to detail and recurrence controls were to retrain WO writers in the requirements of Procedures SSP-6.02 and SSP-2.10. However, after this PER was closed and prior to the response to the NRC, additional examples of the use of vendor information prior to engineering approval were identified and documented on SCAR WBSA930068. The applicant provided a supplemental response on July 15, 1993, describing the three additional examples of inadequate vendor information control detailed in this SCAR. The applicant determined that, although WO writers had been "trained" to Procedures SSP-6.02 and SSP-7.53, Modification Workplans, they did not clearly understand the requirements for handling vendor information. Further, Procedure SSP-2.10 was not in the training matrix for eight different categories of personnel who routinely would be involved with vendor information, including field engineers, field engineering managers, workplan writers and their supervisors, work order planners, and startup support personnel. A supplemental response dated August 6, 1994, modified the corrective action regarding one of the additional issues documented on WBSA930068.

In a letter dated September 9, 1993, responding to the previous submittals by TVA, the NRC noted that additional examples of failure to follow procedures concerning the use of vendor drawings had been identified and documented in VIO 390/93-53-04. The NRC requested an additional response discussing whether corrective actions detailed in the previous responses were affected by the new findings. In a supplemental response, dated February 1, 1995, the applicant indicated that they recognized that additional examples of incorrect application of VI had warranted stronger actions. In addition to the specific actions related to the new violation, the applicant conducted extensive, broad based training. The response further indicated that the line organizations and NA were providing confirmation of the proper application of vendor information in the work process.

In the second example of this VIO, the PEG failed to perform and document an equivalency evaluation when ordering a replacement circuit board for the 1-III 120V AC vital inverter. The replacement board ordered by the new part number supplied by the vendor, had been redesigned to eliminate an internal fuse. The redesign was identified when a preoperational test being witnessed by the NRC could not be performed as written. The applicant's June 14, 1993, response noted that the vendor had not notified WBN of the redesign, only the new part number. This issue was documented on FIR WBFIR930050.

Corrective actions for example 2 included revising the PEG package for the subject circuit boards to include an equivalency evaluation and the revision of vendor manual documents and drawings. Thirteen engineering procurement packages by the individual involved were reviewed with three involving part number changes. Seventeen packages by other PEG engineers were also reviewed

with four involving part number changes. All seven packages involving part number changes contained acceptable equivalency evaluations. PEG personnel, including management and appropriate QA reviewers, were given additional training in the requirements of Procedure SSP-10.05 and equivalency evaluations. The inspectors reviewed closed WBFIR930050, the revised PEG package for the circuit boards in question, and training documentation. The inspectors concluded that the actions taken by the applicant were adequate to resolve this VIO example.

In response to NRC questions and concerns regarding continuing deficiencies in the use of vendor information, the applicant initiated special assessment NA-WB-95-0146 to study the extent and significance of vendor information related findings over the last year. The purpose of this assessment was to determine whether WRs and WOs properly identified and implemented applicable vendor information and to determine if any trends could be found from vendor information related CAQRs issued July 1, 1994 through June 30, 1995. The assessment results indicated the following:

- There were no safety significant items.
- There was no impact on safe shutdown capability.
- Problems identified involved the implementation of vendor information and not the VI CAP itself.
- No further implementation reviews were warranted outside of normal corrective action program activities.
- Program implementation weaknesses existed in Maintenance Planning and Procurement Engineering.
- VI CAP objectives have been met and the CAP has been effectively implemented.

The inspectors reviewed this assessment in detail and noted that the assessment also involved field inspections of plant equipment which identified findings similar to those identified by the NRC in IR 50-390/95-51 during field inspections of plant equipment. The inspectors concluded that the applicant was taking timely actions to address the field inspection findings identified in IR 390/95-51 and assessment report NA-WB-95-0146. The inspectors further noted that the applicant had addressed the vendor information related CAQRs. Violation 390/93-27-01 is considered closed.

4.3 (Closed) IFI 390/93-27-04, Resolution of Field Verification Walkdown Deficiencies

This IFI identified NRC concerns that field verifications for implementation of vendor requirements were too limited in sample size, looked at mostly superficial requirements, and resulted in a high percentage of discrepancies. In addition, this IFI noted that some discrepancies identified by TVA during the field verifications did not appear to have been adequately resolved.

TVA addressed these issues in a letter to the NRC dated February 1, 1995, which was issued to supplement and clarify Revision 4 to the VI CAP. This letter stated that the field verification data the NRC had based their concern on were not directly a part of the CAP, had not been intended to be as thorough as the IDR review, and formed only a part of the supporting field information used to draw conclusions and provide closure bases for some equipment types.

In IR 50-390/95-10 the NRC documented further evaluation of this issue and concluded that TVA had not provided an adequate justification to support the VI CAP objective of reasonable assurance that the installed hardware configurations were in accordance with vendor requirements. In response to this concern TVA developed and issued a "white paper" to define the intent of the IDR and the various programs and processes that provided the basis for TVA's conclusions in this area. The inspectors considered that the "white paper" adequately summarized VI CAP activities but failed to provide adequate confirmation that VI CAP objectives were met in light of the evidence of continuing vendor information related deficiencies.

The applicant also performed an additional verification review of the IDR titled the Systematic Verification of the IDR Review Matrix (SVIDR). This review was designed to test the validity of the applicant's conclusion that plant installations were in accordance with vendor requirements. The review addressed a sample of one specific component from each of the 34 basic equipment types as identified in the VI CAP. This review included identification and verification of all specific VI related attributes for each component in the sample. Verification sources included numerous types of documentation such as CAPs, special programs, calculations, and pre-operational tests and included field verifications of approximately one third of the attributes involving 26 of the 34 components. Two of these components were found not installed in accordance with vendor requirements; control air system compressor foundation bolts were a smaller diameter than shown on vendor drawings, and the valve stem travel length for 1-MVOP-063-0071A was not as shown on the nameplate as required by the VTM. The inspectors considered the SVIDR to be thorough and well documented, but limited in scope (34 components, with only 26 verified in the field). In addition, this review again revealed discrepant hardware that required rework or engineering calculations to justify deviations.

The NRC performed field inspections of plant equipment to determine whether installation was in accordance with vendor requirements and recommendations. The findings from these field inspections were documented in IR 50-390/95-51. The applicant evaluated the findings and documented the evaluations in assessment report NA-WB-95-0146. Other actions taken to address the findings included initiating PERs and WOs. As stated above, the inspectors noted that the applicant identified similar findings during assessment NA-WB-95-0146 as well as other process issues. The inspectors determined that the applicant took timely corrective actions to address the findings identified in IR 50-390/95-51 and assessment report NA-WB-95-0146. During this current inspection, the inspectors performed additional field inspections of plant equipment. There were several questions regarding installation of the MCCBs (e.g., type of fasteners used, use of lock washers, and torque requirements).

The applicant provided satisfactory answers to the inspectors' questions. The inspectors did not have any questions regarding the other equipment that was inspected in the field. This area is discussed in greater detail in paragraph 3.0 of this report.

Based on the evaluation of the applicant's actions to address vendor information related deficiencies, CAQRs, the findings from assessment report NA-WB-95-0146, and the performance of additional field inspections of plant equipment (both by NRC and TVA), the inspectors concluded that the applicant has addressed the questions regarding IFI 390/93-27-04. This item is considered closed.

4.4 (Closed) VIO 390/95-10-01, Failure to Initiate a SCAR for Recurring Deficiencies Involving Vendor Information

This violation involved the applicant's failure to initiate a SCAR for recurring deficiencies identified in numerous PERs involving vendor information. There was evidence which indicated that the controls to prevent recurrence had not been effective.

The applicant responded to this violation in a letter dated April 25, 1995. The inspectors reviewed the corrective actions and closure status for the PERs that were identified in IR 50-390/95-10 as the basis for the violation. The inspectors also reviewed the corrective actions for SCAR WBSCA940061 which related to using unapproved and/or incorrect vendor information. The corrective actions involved providing additional training to craft personnel and WO/WP planners and preparers. Procedure SSP-3.08, Trend Analysis, was revised. Other actions taken which were related to this violation included the performance of special assessment NA-WB-95-0146 which evaluated vendor information related CAQRs that had been initiated over the last year. The applicant's trending process was reviewed in detail and discussed in IR 50-390/95-71. The report concluded that this aspect of the applicant's corrective action program was being adequately implemented. The inspectors concluded that the issues associated with this violation had been addressed. This violation is considered closed.

4.5 (Closed) VIO 50-390/95-51-01, Failure to Follow Procedures in Reviewing Vendor Information

This violation involved failure to perform a one time review of new VTMs and document the review on the Appendix "0" form in Procedure SSP-2.10, Vendor Manual/Information Control. The containment personnel airlock VTM had not been reviewed for periodic maintenance requirements which resulted in a failure to schedule or perform periodic lubrication of the airlocks as specified in the VTM. The applicant documented this nonconformance on PER WBP950436.

The applicant responded to this violation in letters to the NRC dated September 15, 1995, and October 10, 1995. Corrective actions included: (1) establishment and scheduling of the appropriate PM for the lubrication of the personnel airlocks; (2) performance of a review equivalent to the Appendix "0" review for the 58 VTMs identified as not having completed Appendix "0" data

sheets on file as of July 31, 1995; and (3) establishing and scheduling appropriate PMs for the gas stripper feed pump in the CVCS system and the incore flux detector drive motors and indexer units. The inspectors reviewed the applicant's responses to the violation and PER WBPER950436. The inspectors verified that the corrective actions specified in the applicant's responses had been implemented or scheduled. During this review, the inspectors noted that the PM for the containment personnel airlocks was scheduled but had not been implemented at the conclusion of this inspection. Subsequent to the inspection, the applicant performed the PM for the containment airlocks. This activity was observed by the NRC Construction Senior Resident Inspector. The inspectors concluded that the corrective actions by the applicant have addressed this violation. This item is considered closed.

5.0 Followup and Status of Generic Safety Issues

5.1 (Closed) GSI 75 (B077) Item 2.1, Equipment Classification and Vendor Interface Reactor Trip System Components

Item 2.1 addresses components whose functioning is required to trip the reactor and requests all licensees and applicants to describe their program to assure that all such components are identified as safety-related in documents, procedures, and information handling systems used to control safety-related activities in the plant. In addition, the item requests that a vendor interface program be established, implemented, and maintained for such components to ensure that relevant vendor information is complete, current, and controlled throughout the plant lifetime, that it is appropriately referenced or incorporated in plant instructions and procedures, and that it include periodic communication with the vendor.

During an inspection of the VI CAP at the 75 percent completion stage, the NRC raised questions in IR 50-390/93-27 regarding the scope of the VI CAP and the classification of RPS components because some RPS components were not included in the Q-List and were not in the scope of the VI CAP, Rev 4, dated February 4, 1993. The applicant indicated that the RPS system was undergoing modifications (with installation of the Eagle-21 process protection system) and would be included in the Q-List and the VI CAP scope after completion of the modifications. The inspectors identified IFI 50-390/93-27-02, Vendor Information Program Scope, to track the applicant's resolution of this issue.

The applicant completed actions related to the equipment classification portion of this item with completion of the Q-List CAP. This was transmitted to the NRC in a letter dated January 28, 1994. The NRC inspected the Q-List CAP and concluded that the CAP had been implemented as stated in the Watts Bar Nuclear Performance Plan, Volume IV. The NRC conclusions were documented in IR 50-390/94-27, dated April 21, 1994. In response to the above IFI, TVA submitted a letter to the NRC dated February 1, 1995, which provided additional clarification of the VI CAP scope regarding the interface between the WBN Q-List, RPS components (including Eagle-21), and the VI CAP. Inspector Followup Item 50-390/93-27-02 was reviewed and closed in IR 50-390/95-10. During this current inspection, the inspectors verified that RPS components, including Eagle-21, were included in the WBN Q-List and were designated as safety-related.

In addition to verifying that the RPS components were identified as safety-related on the Q-List, the inspector also reviewed the applicant's controls for periodic communication with vendors. Procedure SSP-2.10, Vendor Manual/Information Control, provides information regarding vendor contact and communication. The inspector reviewed various correspondence between the applicant and the RPS/Eagle-21 vendor during inspections of the VI CAP. During this current inspection, the inspector reviewed a vendor contact report that was prepared in accordance with SSP-2.10 for communications with Westinghouse Electric Corporation. Westinghouse is the RPS/Eagle-21 and the NSSS vendor for Watts Bar.

Based on the above reviews, the inspectors concluded that GSI 75 (B077) Item 2.1 has been addressed. This item is considered closed.

5.2 (Closed) GSI 75 (B086) Item 2.2.1, Equipment Classification for Safety-Related Components

In addition to the reactor trip system components addressed by Item 2.1 above, Item 2.2.1 addressed all "other safety-related components" and requested all licensees and applicants to describe their program used to classify such components. The classification program is necessary to ensure that all such components are identified as safety-related in documents, procedures, and information handling systems used to control safety-related activities in the plant, and must include periodic communication with the vendor.

The applicant completed actions related to equipment classification with completion of the Q-List CAP. This was transmitted to the NRC in a letter dated January 28, 1994. The NRC inspected the Q-List CAP and concluded that the CAP had been implemented as stated in the Watts Bar Nuclear Performance Plan, Volume IV. The NRC conclusions were documented in IR 50-390/94-27, dated April 21, 1994.

During inspections of the VI CAP, the inspectors had performed field inspections of numerous components to determine whether the components were installed in accordance with vendor requirements and recommendations. During these reviews, the inspectors verified that the components selected were identified as safety-related in the applicant's Equipment Management System, DCNs, test procedures, and maintenance procedures. Components reviewed included, but were not limited to, the following:

- Charging Pump 1A-A
- Containment Personnel Airlocks 1-PAL-088-002A and 1-PAL-088-002B
- CCS Thermal Barrier Booster Pump 1B
- CCS Pump 1B-B
- Containment Spray Pumps 1A-A and 1B-B
- Safety Injection Pump 1A-A
- Spare Governors 1-65-82-166A and 1-65-82-197A for the Emergency Diesel Generators

Based on the above reviews, the inspectors concluded that GSI 75 (B086) Item 2.2.1 has been addressed. This item is considered closed.

5.3 (Closed) GSI 75 (L003) Item 2.2.2, Vendor Interface for Safety-Related Components

The original needs for vendor interface programs for safety-related components were specified in GL 83-28. Generic Letter 90-03 was issued on March 20, 1990 which relaxed and superseded the original vendor interface program guidance based on industry initiatives and experience. The revised interface program with the NSSS vendor covers all safety-related components within the NSSS scope of supply and is to conform with the Vendor Equipment Technical Information Program as described in the Nuclear Utility Task Action Committee Report, INPO 84-010 issued in March 1984. A program of periodic contact with non-NSSS vendors of other key safety-related components was also specified.

The applicant took actions to address this item with implementation of the VI CAP. Through inspections of the VI CAP (IRs 50-390/93-27, 50-390/95-10, and 50-390/95-51), the inspectors verified that the applicant had established, implemented, and is maintaining a continuing program to ensure that vendor information for safety-related components is complete, current, and controlled throughout the life of the plant. During these and other NRC inspections, the inspectors verified that appropriate vendor requirements and recommendations were generally included in the applicant's test procedures and maintenance procedures. There were several instances identified during the VI CAP inspections and other NRC inspections where deficiencies were noted involving the use of vendor information. The applicant took actions to address the findings and the items were either closed in previous NRC IRs, or they are being closed in paragraph 4 of this IR.

As stated in paragraph 5.1 above, the inspector also reviewed the applicant's controls for periodic communication with vendors. Procedure SSP-2.10, Vendor Manual/Information Control, provides information regarding documentation of periodic vendor contact and communication. The inspector reviewed correspondence between the applicant and vendors for various safety-related components during inspections of the VI CAP. During this current inspection, the inspector reviewed a vendor contact report that was prepared by the applicant in accordance with SSP-2.10 after communications with a vendor who supplied safety-related components.

Based on the above reviews, the inspectors concluded that GSI 75 (L003) Item 2.2.2 has been addressed. This item is considered closed.

6.0 QA Effectiveness

The inspectors assessed the applicant's NA organization overview activities. As discussed in paragraphs 2 and 4 of this report, NA has performed site assessments of activities involving the use of vendor information. NA also performs the trending of PERs on a monthly basis to look for adverse trends in the performance of plant activities. The results of these assessments and trend reports were reviewed to evaluate the effectiveness of QA activities in providing overview. The inspectors concluded that the NA assessments were effective in identifying deficiencies which indicated that vendor information was not being properly referenced and used during the implementation of work activities.

The inspectors concluded that NA and other plant organizations have been effective in identifying adverse conditions involving vendor information. The applicant evaluated these deficiencies and concluded that most of these issues were considered "implementation" problems and not VI CAP related. Some of these issues had not been included in the VI CAP final report evaluation of the adequacy of the applicant's actions on the VI CAP. Several of these issues were subsequently included in the special assessment that was performed by NA and the applicant evaluated the issues and has taken action to address the NA findings.

7.0 Exit Interview

The inspection scope and results were summarized on October 13, 1995, with those persons indicated in paragraph 1. The inspector described the areas inspected and discussed in detail the inspection findings. Proprietary information is not contained in this report. Dissenting comments were not received from the applicant. The following open items were discussed.

Status of previous open items:

- (Open) VIO 390/87-05-01, Hydrogen Analyzer Design (Example 1 of this VIO is being closed in this IR. Example 2 of this VIO is currently being reviewed for closure and will be discussed in IR 390/95-77)
- (Closed) VIO 390/93-27-01, Use of Unapproved Vendor Information
- (Closed) IFI 390/93-27-04, Resolution of Field Verification Walkdown Discrepancies
- (Closed) VIO 390/95-10-01, Failure to Initiate a SCAR for Recurring Deficiencies Involving Vendor Information
- (Closed) VIO 390/95-51-01, Failure to Follow Procedures in Reviewing Vendor Information

Followup and status of Generic Safety Issues (GSI)

- (Closed) GSI 75 (B077) Item 2.1, Equipment Classification and Vendor Interface Reactor Trip System Components
- (Closed) GSI 75 (B086) Item 2.2.1, Equipment Classification for Safety-Related Components
- (Closed) GSI 75 (L003) Item 2.2.2, Vendor Interface for Safety-Related Components

8.0 Acronyms and Initialisms

AC	Alternating Current
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
BKR	Breaker
CAP	Corrective Action Program
CAQR	Condition Adverse to Quality Report
CCS	Component Cooling System
CVCS	Chemical and Volume Control System
DBVP	Design Baseline Verification Program
DCN	Design Change Notice
DS	Design Standard
FCV	Flow Control Valve
FIR	Finding Identification Report
FLTR	Filter
GL	Generic Letter
GSI	Generic Safety Issue
IDR	Installation Design Requirements
IFI	Inspector Followup Item
INPO	Institute of Nuclear Power Operations
IR	Inspection Report
ISV	Isolation Valve
MAI	Modification Addition Instruction
MCCB	Molded Case Circuit Breaker
MI	Maintenance Instruction
MTR	Motor
NA	Nuclear Assurance
NE	Nuclear Engineering
NRC	Nuclear Regulatory Commission
NSSS	Nuclear Steam Supply System
PEG	Procurement Engineering Group
PER	Problem Evaluation Report
PM	Preventive Maintenance
PMP	Pump
QA	Quality Assurance
RPS	Reactor Protection System
SCAR	Significant Corrective Action Report
SP	Special Program
SSP	Site Standard Practice
STN	Strainer
SVIDR	Systematic Verification of the IDR Review Matrix
TE	Temperature Element
TVA	Tennessee Valley Authority
VI	Vendor Information
VIO	Violation
VIP	Vendor Information Program
VTD	Vendor Technical Document
VTM	Vendor Technical Manual
WBN	Watts Bar Nuclear Plant
WO	Work Order

WP Work Plan
WR Work Request
WTB Westinghouse Technical Bulletin