TVA EMPLOYEE CONCERN
SPECIAL PROGRAM

REPORT NUMBER: WBN-NSRS-1

REPORT TYPE: Watts Bar Nuclear Plant Subcategory

REVISION NUMBER: 0

TITLE: Review of Nuclear Safety Review Staff Restart Type Items at Watts Bar

REASON FOR REVISION: N/A

SUMMARY STATEMENT: The 26 items in this report were identified by the Nuclear Safety Review Staff (NSRS) and were assigned to the Employee Concerns Task Group (ECTG) for verification and closure. The verification activities are described in this report.

PREPARATION

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EXECUTIVE SUMMARY

WBN-NSRS-1

Review of Nuclear Safety Review Staff (NSRS) of Open Restart Type Items Requiring Resolution at Watts Bar Nuclear Plant (WBN) before unit 1 Fuel Load.

The NSRS conducted reviews of activities at WBN during its span of overview responsibility from 1979 to 1986. The NSRS items remaining open in 1986 have been examined by the Employee Concerns Task Group (ECTG).

The ECTG examined the status of NSRS issues including those identified specifically for WBN as well as other sites issues which could have generic applicability to WBN. In all 104 issues were considered applicable to WBN including 26 requiring resolution before unit a fuel load. The status of 26 of these restart type issues is the subject of this WBN-NSRS-1 report. The remaining 78 issues are considered non-restart type items and are addressed in report WBN-NSRS-2.

The 26 issues discussed in this report are closed items. Some associated activities or areas related to the items may, in fact, still be incomplete. However, these NSRS items are considered closed because the ECTG, through the evaluation process, determined that sufficient resources have been committed to the issues to ensure their satisfactory completion and closure. This confidence is derived from interviews with cognizant TVA personnel and reviews of applicable documentation.

The status of each of the 26 NSRS restart type issues for WBN is as follows:

(Closed) R-80-05-SQN-04B	Configuration Control
(Closed) R-80-05-SQN-10	Adequacy of Containment to Withstand Tornado Damage
(Closed) R-82-07-WBN-06	Visual Inspection of Welds Through Primer (Reopened by Nuclear Regulatory Commission [NRC])
(Closed) R-82-08-NPS-10C	Issuing Directives Contrary to TVA Commitments
(Closed) R-84-05-WBN-24	Interface Review After Unit 1 Fuel Loading
(Closed) R-84-07-WBN-01	Pipe Support Calculations Destroyed
(Closed) R-84-15-WBN-03	Configuration Control and Inadequate Verification by Operations Section

(Closed) R-84-17-NPS-10	Commercial Grade Items with QA Level I and II Designations
(Closed) R-84-17-NPS-11	Quality Verification for Commercial Grade Items
(Closed) R-84-17-NPS-12	Receipt Inspection of QA Level I and II Items by Field Quality Engineers
(Closed) R-84-19-WBN-01	Clear Identification of Purpose and Use of Controlled Documents at all Plants
(Closed) R-84-19-WBN-06	Instantaneous Trip Setting of the Breakers for Motor-Operated Valves
(Closed) R-84-19-WBN-07	Development of Criteria for Cable Tray Fill Level and QC Inspection
(Closed) I-84-34-SQN-03	Availability of Material Certifications and Requirements for Heat Number Sort Printout Entries
(Closed) R-85-02-SQN/WBN-2	Maintenance, Operating, and Tests of Thimble Tube Seals
(Closed) I-85-06-WBN-01	The Adequacy of the Dispositions of Identified Cable Bend Radius Problems
(Closed) I-85-06-WBN-02	The Adequacy of the Program for Cable Pulling Activities
(Closed) I-85-06-WBN-03	Voltage Drop and Short Circuit Current Determination and Verification
(Closed) I-85-06-WBN-05	Underdevelopment of Established and Documented Limited QA Program and Failure to Incorporate the Established Limited QA Program Into Nuclear Quality Assurance Manual (NQAM)
(Closed) R-85-08-OE/NUC PR-1	Inadequate OE Environmental Qualification Procedure for Equipment Qualification by Similarity
(Closed) R-85-08-OE/NUC PR-2	Inadequate OE and NUC PR Procedures for Initiating and Processing NCR-FE/ERs
(Closed) R-85-08-OE/NUC PR-3	Lack of Priority on SQN NCR Initiation

(Closed) R-85-08-OE/NUC PR-4	Lack of Engineer Awareness of NCR-FE/ER
(Closed) R-85-08-OE/NUC PR-5	Lack of Timeliness in Initiating and Processing NCR/FE/ERs
(Closed) R-85-08-OE/NUC PR-6	Failure of Management to Correct Problems with Timeliness and Responsiveness Involving the NCR-FE/ER Process
(Closed) I-86-101-SQN	Wire Bend Radius in Installation Using Conax Connectors

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

EMPLOYEE CONCERNS TASK GROUP

OTHER SITES

CEG

Watts Bar Nuclear Plant - NSRS Classical Items

Subcategory: Review of Nuclear Safety Review Staff Restart Type Items At Watts Bar

Report Number: WBN-NSRS-1 Revision 0

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Review of Nuclear Safety Review Staff (NSRS) of Open Restart Type Items Requiring Resolution at Watts Bar Nuclear Plant (WBN) before unit 1 Fuel Load.

I. INTRODUCTION

The NSRS conducted reviews of activities at WBN during its span of overview responsibility from 1979 to 1986. The NSRS items remaining open in 1986 have been examined by the Employee Concerns Task Group (ECTG).

The ECTG examined the status of NSRS issues including those identified specifically for WBN as well as other sites issues which could have generic applicability to WBN. In all 104 issues were considered applicable to WBN including 26 requiring resolution before unit 1 fuel load. The status of 26 of these restart type issues is the subject of this WBN-NSRS-1 report. The remaining 78 issues are considered non-restart type items and are addressed in report WBN-NSRS-2.

The 26 issues discussed in this report are closed items. Some associated activities or areas related to the items may, in fact, still be incomplete. However, these NSRS items are considered closed because the ECTG, through the evaluation process, determined that sufficient resources have been committed to the issues to ensure their satisfactory completion and closure. This confidence is derived from interviews with cognizant TVA personnel and reviews of applicable documentation.

The status of each of the 26 NSRS restart type issues for WBN is as follows:

II. VERIFICATION OF NSRS OPEN ITEMS

(Closed) R-80-05-SQN-04B	Configuration Control
(Closed) R-80-05-SQN-10	Adequacy of Containment to Withstand Tornado Damage
(Closed) R-82-07-WBN-06	Visual Inspection of Welds Through Primer (Reopened by Nuclear Regulatory Commission [NRC])
(Closed) R-82-08-NPS-10C	Issuing Directives Contrary to TVA Commitments
(Closed) R-84-05-WBN-24	Interface Review After Unit 1 Fuel Loading
(Closed) R-84-07-WBN-01	Pipe Support Calculations Destroyed
(Closed) R-84-15-WBN-03	Configuration Control and Inadequate Verification by Operations Section

(Closed)	R-84-17-NPS-10	Commercial Grade Items with QA Level I and II Designations
(Closed)	R-84-17-NPS-11	Quality Verification for Commercial Grade Items
(Closed)	R-84-17-NPS-12	Receipt Inspection of QA Level I and II Items by Field Quality Engineers
(Closed)	R-84-19-WBN-01	Clear Identification of Purpose and Use of Controlled Documents at all Plants
(Closed)	R-84-19-WBN-06	Instantaneous Trip Setting of the Breakers for Motor-Operated Valves
(Closed)	R-84-19-WBN-07	Development of Criteria for Cable Tray Fill Level and QC Inspection
(Closed)	I-84-34-SQN-03	Availability of Material Certifications and Requirements for Heat Number Sort Printout Entries
(Closed)	R-85-02-SQN/WBN-2	Maintenance, Operating, and Tests of Thimble Tube Seals
(Closed)	I-85-06-WBN-01	The Adequacy of the Dispositions of Identified Cable Bend Radius Problems
(Closed)	I-85-06-WBN-02	The Adequacy of the Program for Cable Pulling Activities
(Closed)	I-85-06-WBN-03	Voltage Drop and Short Circuit Current Determination and Verification
(Closed)	I-85-06-WBN-05	Underdevelopment of Established and Documented Limited QA Program and Failure to Incorporate the Established Limited QA Program Into Nuclear Quality Assurance Manual (NQAM)
(Closed)	R-85-08-OE/NUC PR-1	Inadequate OE Environmental Qualification Procedure for Equipment Qualification by Similarity
(Closed)	R-85-08-OE/NUC PR-2	Inadequate OE and NUC PR Procedures for Initiating and Processing NCR-FE/ERs
(Closed)	R-85-08-OE/NUC PR-3	Lack of Priority on SQN NCR Initiation

(Closed)	R-85-08-OE/NUC PR-4	Lack of Engineer Awareness of NCR-FE/ER
(Closed)	R-85-08-OE/NUC PR-5	Lack of Timeliness in Initiating and Processing NCR/FE/ERs
(Closed)	R-85-08-OE/NUC PR-6	Failure of Management to Correct Problems with Timeliness and Responsiveness Involving the NCR-FE/ER Process
(Closed)	I-86-101-SQN	Wire Bend Radius in Installations Using Conax Connectors

(Closed) R-80-05-SQN-04B, Configuration Control

In the original review dated June 1980, NSRS concluded, from the electrical deficiencies found, that configuration control was inadequate and made the following recommendation:

> "Revise the existing Configuration Control Program including appropriate instructions to require more frequent and indepth inspections such that the entire plant has been inspected at each refueling cycle."

The ECTG's investigation of this issue revealed that WBN has developed the "Design Baseline and Licensing Verification Program", which will verify configuration as one of five major areas; Licensing, Design Bases, Design, Construction, and Configuration. This program was formally the "Engineering and Configuration Assurance Program" (E-CAP). This program is also addressed by CATD 30704-WBN-06 which was written to track the program until completion of the E-CAP program. The E-CAP program is addressed in the WBN Nuclear Performance Plan Volume IV (Draft).

Based on ECTG's verification that the WBN Design Baseline and Licensing Verification Program has been developed this NSRS issue is closed. However, CATD 30704-WBN-06 will remain open until the completion of the Design Baseline and Licensing Verification Program at WBN.

(Closed) R-80-05-SQN-10, Adequacy of Containment to Withstand Tornado Damage

The NSRS conducted a review of the design of the Sequoyah containment to determine if it is adequate to withstand the effect of depressurization and missiles caused by tornados. Specific problem areas identified by the NSRS, which appeared to lack adequate tornado depressurization and missile protection, were the diesel generator exhaust stacks, penetration through the roof, Diesel Generator Building, refueling water storage tank, primary water storage tank, condensate storage tanks, and the 480 volt shutdown transformer rooms on elevation 749 of the Auxiliary Building. This issue was considered generic to Watts Bar Nuclear Plant (WBN).

This NSRS issue was identified at WBN in CATD R-80-05-SQN-10. The WBN Line management response is contained in the corrective action plan and indicates that the problem has been resolved. However, this response was determined to be incomplete and CATD R-80-05-SQN-10 R1 was issued to adequately address the issue.

The Divison of Nuclear Engineering (DNE) (formerly EN DES) responded to this NSRS issue at WBN in a memorandum from EN DES to the NSRS (RIMS Number CEB 82 0512021). The NRC mandated solution was:

1. Install missile protection for the eight exhaust fan openings over the 125V battery rooms in the Auxiliary Building

2. Install missile protection over the six intake and exhaust openings over the transformer rooms in the Auxiliary Building (plus sixteen other openings)

3. Install missile protection over eight diesel generator (D/G) exhaust stacks and nine HAVC openings in the roof of the D/G building

Also, it was determined that missile protection was needed (but not mandated) for two Reactor Building exhaust openings.

A visual inspection by ECTG indicated that this work had been initiated but apparently suspended. The ECTG evaluation is that this issue is closed; however, the closeout/verification of the CATD will be based on completion of the work described in the CAP.

(Closed) R-82-07-WBN-06, Visual Inspection of Welds Through Primer

The NSRS stated that insufficient documentation existed to substantiate the Watts Bar weld sampling program conducted to verify that visual weld inspections could be made through Carbo zinc primer. The NSRS recommended that TVA prepare a report describing the weld sampling program and provide a technical justification for inspection through primer. This item was closed February 3, 1984. The TVA general manager received a letter from a former NSRS member dated November 7, 1985, that questioned the validity of closing the item at Watts Bar.

This issue is being addressed in the ECTG Welding Subcategory Report 50400. The basis for the resolution of this issue is contained in the Welding Project employee concern evaluation report WP-02-WBN (Draft). WP-02-WBN found that the weld inspections in question were part of a reinspection program. TVA Process Specification 3.C.5.4(a) dated January 25, 1982 did provide for inspection of American Welding Society (AWS) welds after priming with carbo-zinc, with certain limitations. The same provisions were also included in the site implementing procedure, WBN-QCP 4.13-VTC, R0. The intent of these provisions apparently was to facilitate reinspections rather than initial acceptance. The sample reinspections of structural welds were for deficiencies in configuration (size, length, and location).

TVA performed a sample reinspection of the welds, with the coatings removed, specifically aimed at resolving this issue. The results of this reinspection were satisfactory.

In March 1984, the provision for inspecting primed welds was deleted from the site procedure in accordance with the revised process specification.

The ECTG Welding Category Evaluation Group (CEG) found that three electrical supports were identified as having been initially inspected while primed. These supports were identified on an Inspection Rejection Notice. The welds were cleaned and reinspected with approved procedures.

Based on the findings in Welding Project draft report WP-02-WBN and the fact that this issue is addressed in the ECTG Welding Category, this NSRS item is closed.

(Closed) R-82-08-NPS-10C, Issuing of Directives Contrary to TVA Commitments (Chemistry Program)

During the original review, NSRS concluded that procedural controls were absent for the central office preparation, qualification, and issuance of analytical procedures. NSRS recommended that nuclear power management direct their attention to this procedure development.

In response to this issue, CATD 30711-NPS-02 was initiated to provide corrective action for deficient conditions. This CATD requested that all items in the R-82-08-NPS series reports (1 through 10) be reviewed and a method of resolution for deficiencies be provided.

A Corrective Action Plan (CAP) was developed to implement a new program as described in the text of the following CAP.

> "In response to the subject NSRS audit report and discussions with persons involved in the audit, it was determined that addressing the 10 recommendations, after such a long lapse in time, is not practical nor would it address all of today's problems. Instead, a much broader approach will be taken that includes the stated scope and intent of this audit. The goal for the approach presently being pursued is to develop an exceptional program that exceeds in quality all requirements, commitments, and industry standards. As a result of the problems identified in this audit and other audits by the Nuclear Regulatory Commission (NRC), Institute of Nuclear Power Operations (INPO), Quality Assurance, etc., a Chemistry Program Manager's position was established at the corporate level with the responsibility and authority to develop, implement, and maintain a state-of-the-art chemistry program at TVA. This program is presently under development and schedules have been submitted for its implementation. When implemented, this program will address the concerns, both stated and implied, in the subject audit report."

The ECTG obtained a copy of the proposed program schedule and further investigations revealed that a portion of the program had been implemented and the remainder was reasonably following the prescribed schedule. The intent of the newly developed program is to establish and implement a model program at the Sequoyah Nuclear Plant that is "state of the art" and with its successful completion, be adopted and implemented at WBN, BFN, and BLN.

Based on these verification activities, ECTG determined that the development of TVA central office policy, goals, and objectives for chemistry activities is being accomplished in a controlled manner. This item is closed. However, CATD 30711-NPS-02 will remain open and the issue will be tracked at WBN until the model program has been implemented at all TVA plants and CATD 30711-NPS-02 is closed.

(Closed) R-84-05-WBN-24, Interface Review After Unit 1 Fuel Loading

The NSRS conducted a review of this issue at Watts Bar Nuclear Plant (WBN) in 1984. NSRS noted that after fuel loading for unit 1, there was scheduled to be a two-year period before unit 2 fuel load. In view of this long period between fuel loading, the NSRS was concerned that interface controls might be inadvertently lifted or overlooked.

The NSRS recommended that Field Quality Engineering perform annual reviews for interface control requirements as defined in ID-QAP-2.3 "Physical Interface Between Licensed and Unlicensed Units." The NSRS recommended that this review cycle should start after fuel loading of unit 1.

AI-1.6 Revision 5, dated April 9, 1985, incorporates the requirements to transfer responsibility of the control of the unit interface points to the Operations Supervisor at the time of unit 1 fuel loading.

The ECTG issued CATD R-84-05-WBN-24 to WBN line management. The following is the proposed Corrective Action Plan (CAP):

> "Quality Engineering (QE) will develop a quality method instruction to require that QE perform an annual review of physical interface control points between unit 1 and unit 2. This review cycle will begin after fuel load of unit 1. This procedure will be completed by October 30, 1987."

Based on the proposed corrective action plan as addressed by CATD/CAP R-84-05-WBN-24, this NSRS item is closed at WBN. However, the CATD R-84-05-WBN-24 will remain open and tracked at WBN until verification and closeout.

(Closed) R-84-07-WBN-01, Pipe Support Calculations Destroyed

In the 1984 Report R-84-07-WBN, the NSRS found that design calculations were missing for some pipe supports on safety related systems. This was determined to be a violation of TVA QA requirements as well as ANSI N45.2.9-1974.

The NSRS recommended that calculations for pipe supports on safety related systems should be recreated and stored as part of Quality Records.

This issue is addressed in ECTG Element Report 212.1(A). The report found that NCR WBN CEB 8418, R1, which identified destroyed pipe support calculations, has ongoing corrective action which is not yet complete. CATD 21201-WBN-01 was issued concerning this NCR and the CAP in response states:

> "SCRWBNCEB8531 R1 was written to address all missing pipe support calculations for unit 1 in addition to the destroyed EDS Nuclear Company's calculations addressed by NCRWBNCEB8418 R1.
>
> The corrective action for the conditions of SCRWBNCEB8531 R1 and NCRWBNCEB8418 R1 is to:
>
> a. Review all calculations for basic completeness.
>
> b. Assure that all calculations are in records and information management system (RIMS).
>
> c. Prepare, issue, and document calculations for all missing and incomplete calculation packages and those not meeting requirements of 1 and 2 above. The above corrective action will be implemented by the Hanger & Analysis Up-Date Program and will be completed prior to Watts Bar Unit 1 fuel load."

A Division of Nuclear Engineering (DNE) Supervisor stated that accomplishment of the above corrective action would be contracted out, however, the contract has not been issued at this time. This corrective action has been accepted by ECTG and, when complete, will resolve this NSRS recommendation. The above CAP indicates that completion is scheduled before fuel load of WBN unit 1. Since this issue is being tracked by CATD 21201-WBN-01, this NSRS item is closed.

(Closed) R-84-15-WBN-03, <u>Configuration Control and Inadequate Verification by Operations Section</u>

The NSRS concluded that the configuration control and independent verification procedures were adequate to maintain the required status of the plant systems. However, the execution of those procedures was lax and faulty. The actual status of some systems was not recorded and verified by the required checklists and signoffs. (This survey was performed during Hot Functional Testing).

The NSRS recommended that OSL-2A be reviewed with all operations staff in conjunction with the performance of Standard Operating Instructions (SOI), General Operating Instructions (GOI), and other plant procedures to maintain 100 percent control of system alignments. Also that AI-2.19 be reviewed with all operations staff to stress the requirements and importance of independent verifications of required equipment.

The ECTG's investigation at WBN revealed that this issue has been addressed by CATD 31003-WBN-02. "The WBN Quality Surveillance Section (QSS) will perform a surveillance to verify the effectiveness of operations to maintain the required status of the plant systems before licensing of WBN as a part of the operational readiness verifications." Also, OSLA-2, Revision 12, dated April 11, 1986, "Operations Section Letter, Maintaining Cognizance of Operational Status," addresses system status file performance guidelines and responsibilties, to include, training for personnel involved in maintaining system status and certifies those qualified as designated unit operators (DUO). AI-2.19, "Independent Verification," Revision 5, dated 1/28/87, has been reviewed by operations staff and the requirements and importance of independent verification has been stressed to operations personnel.

Based on the improved instructions and the commitments by the Quality Surveillance Section to verify the effectiveness of operations to maintain the required status of plant systems, this NSRS item is closed.

(Closed) R-84-17-NPS-10, Commercial Grade Items with QA Level I and II Designations

Commercial grade items were being purchased with little or no QA requirements from vendors or manufacturers without TVA-approved QA programs and classified as QA Level I or II. That practice was contradictory to the purpose of having QA Level I and II items with QC documentation attesting to its suitability for the intended function.

The NSRS recommended that items purchased with no QA requirement or requirements for material certifications (COC, CMTR, etc.) and/or from vendors or manufacturers without TVA-approved QA programs should not be purchased with a QA level I or II designation.

Per the corrective action plan to CATD 80104-WBN-02, WBN response is:

> "These are being addressed by DNE as part of the commercial grade items dedication effort. WBN will assign an item Evaluation Group comprised of DNE engineers, Site QA, and Materials Section personnel to evaluate all commercial grade basic components. The Nuclear Quality Assurance Manual (NQAM), Part III, Section 2.1 is being revised to list the requirements and a site implementing procedure should be in place by March 19, 1987."

The Supervisor of the Materials Procurement and Scheduling Unit stated that this activity has begun at WBN and will be performed by Stone and Webster Engineering Corporation (SWEC) which will report to the Supervisor of Contracts Engineering Group (Evaluation Group).

The supervisor (SWEC) confirmed the organization and indicated that the commercial grade issue (purchasing, procurement, and installation) was in the process of being evaluated and a comprehensive program formulated. He indicated that the program was to involve a major effort and would include DNE engineers, site QA and other personnel as necessary to address the issue. At the present time the effort was to include:

a. Review of requisitions for commercial grade material.

b. Draft a commercial grade dedication procedure for WBN.

c. Review existing documents at WBN (AIs, NQAMs, etc.) to ensure compliance.

d. Determine a backfit program per the results of the identified problems.

This organization will address the commercial grade problem at WBN and resolve problems with procurement, procedures, instructions, and backfitting.

Also, Administrative Instruction (AI) 5.12, "Dedication of Commerical Grade Items," was issued on March 19, 1987 as the site implementing procedure. It was anticipated that this procedure would be replaced/complemented by a Technical Instruction in the future.

The ECTG evaluation of this NSRS issue at WBN determined the issue to be closed. Verification/closeout of CATD 80104-WBN-02, in accordance with the approved corrective action plan, will ensure that the issue is resolved.

(Closed) R-84-17-NPS-11, <u>Quality Verification for Commercial Grade Items</u>

The use of commercial grade items, as basic components, places the responsibility for ensuring that the items will function as intended, under all conditions, solely upon TVA. The QA program within TVA, at the time of this review, was not capable of providing that assurance because it did not include a receipt inspection program which included testing of the item or comparable mechanisms such as an audit of the vendor's QA program for commercial grade items.

The NSRS recommended that NUC PR establish a receipt inspection program which includes testing or comparible mechanisms, such as audit of vendor's QA program, verification of certificate of conformance, etc., for replacement of commercial grade items that will be dedicated as basic components or parts thereof, that would provide documented assurance that the items procured will function as intended when necessary, including accident conditions.

The WBN corrective action plan in the CATD 80104-WBN-02, is as follows:

> "These are being addressed by DNE as part of the commercial grade items dedication effort. WBN will assign an item Evaluation Group comprised of DNE engineers, Site QA, and Materials Section personnel to evaluate all commercial grade basic components. NQAM, part III, Section 2.1, is being revised to list the requirements and a site implementing procedure should be in place by March 19, 1987."

Details of the closure process/activities regarding this item are stated in issue R-84-17-NPS-10.

The ECTG evaluation of this NSRS issue at WBN determined the issue to be closed. Verification/closeout of CATD 80104-WBN-02 as stated in the approved corrective action plan will ensure that the issue is fully resolved.

(Closed) R-84-17-NPS-12, Receipt Inspection of QA Level I and II Items by FQE

Considering the changes recommended by NSRS in this report with regard to the procurement of Quality Level I and II material and commercial grade items to be dedicated as basic components, the division of receipt inspections between Field Quality Engineer (FQE) and Power Stores, in effect during this review, will be inadequate.

The NSRS recommendation is for all items procured as QA Level I and II and commercial grade items to be dedicated as basic components should be receipt inspected by FQE or others qualified to ANSI N5.2.6.

This issue was identified in CATD 80104-WBN-02 and the acceptable WBN response was:

> "This item is being addressed by DNQA."

Discussions with the Supervisor of Material Procurement and Scheduling Unit, indicated that procedure AI-5.2 (Receipt Inspection of Materials, Components and Spare Parts) required a receipt inspection by a QC inspector, of QA Level I, II, and III material. A review of AI-5.2 confirmed this.

Also, the Nuclear Quality Assurance Manual (NQAM) Part III, Section 2.1 and 2.2 were the basis of the revision to AI-5.2 and were in agreement with AI-5.2.

The closeout verification process should include objective evidence that the DNQA is assigning qualified inspectors for receipt of materials as required by the controlling NQAM and AI-5.2.

The ECTG evaluation of this NSRS issue at WBN determined the issue to be closed. Verification/closeout of CATD 80104-WBN-02, as stated in the approved corrective action plan, will ensure that the issue is fully resolved.

(Closed) R-84-19-WBN-01, Clear Identification of Purpose and Uses of All Controlled Documents

The NSRS identified instances at WBN where logic and control drawings in the control room did not agree with electrical drawings and termination lists.

The ECTG review of a memorandum by WBN Engineering, (B26 860204 001), dated February 4, 1986, addressing NSRS open items, revealed that issue R-84-19-WBN-01 was considered by the NSRS to have been satisfied by the completed corrective action by the Division of Nuclear Engineering (DNE) consisting of the review of all logic drawings to remove discrepant information; this was documented on ECN 4666, and is closed. A review of ECN 4666 by ECTG verified that the ECN was closed.

Based on the ECTG findings, this issue is closed.

(Closed) R-84-19-WBN-06, Instantaneous Trip Setting of the Breakers for Motor-Operated Valves

The NSRS determined that instantaneous trip settings for motor-operated valve breakers were not in accordance with EN DES criteria and vendor recommendations. The task force concluded that the licensing commitment and the licensing basis were not met and corrective action was required for both past and future work.

The NSRS recommended that WBN DNE should verify the instantaneous trip breakers to be set in agreement with the National Electric Code (NEC). The documentation for the design as well as for the testing and operation of the equipment should reflect the proper values.

This issue has been addressed in WBN ECTG Element Report 237.2(A) titled "Electrical Protection Design." The findings in 237.2(A) indicate that problems still exist with the setting of the instantaneous adjustable circuit breakers and the design criteria for their application. Six CATDs were issued to identify the specific deficiencies and TVA has committed to resolve each as indicated in Corrective Action Plans (CAP).

The corrective actions were determined to adequately address the deficiencies and upon closure of CATDs 23702-WBN-01 through 06, NSRS item R-84-19-WBN-06 will be resolved. Based on the fact that acceptable corrective action is underway and is tracked by CATDs, this NSRS item is considered closed at WBN. All corrective action has been scheduled for completion before unit 1 fuel load.

(Closed) R-84-19-WBN-07, Development of Criteria For Cable Tray Fill Level and QC Inspection

The NSRS found that criteria was needed to control cable tray fill levels and to provide a basis for QC inspection. In a September 13, 1985 memorandum, the NSRS indicated that the following actions were necessary to close the issue:

a. A satisfactory verification process must be established and maintained for the computer cable routing programs and data tables.

b. Appropriate change controls must be developed and implemented in order to control changes to the computer programs.

The ECTG Engineering Category element report 238.1(A) addresses this issue at WBN. The following CATDs and Corrective Action Plans (CAP) indicate the method for resolution of this issue.

CATD 23801-WBN-02 states that the maximum tray fills listed in the current WBN cable schedule do not agree, in all cases, with the maximum allowable values established by calculation WBEP VAR 8608003 (B26 860825 047). The CAP states that calculation WBEP VAR 8608003 (B26 860825 047) establishes the maximum allowable cable cross-sectional area for all cable tray segments. Input of these data into the cable schedule computer program (CSCP) will be completed in conjunction with modifications to the program itself. The program is required to track and control tray fill. Data entry and modifications to the CSCP will be completed before fuel load of unit 1. In the interim, WBEP 5.31 section 4.4 requires that a "Verification of Cable Record Checklist" be completed for any cable routed. This record ensures that the cross-sectional area limit for any cable tray segment will not be exceeded without justification.

CATD 23801-WBN-05 states that WBEP-EP 43.13 does not include all the necessary requirements to ensure that adequate control of raceway fill and cable routing will exist in the future. The CAP states that SCR WBN ECB8601 addresses deficiencies in the control of raceway fill and cable routing. It established the action required to prevent recurrence. Also, SCR WBN ECB8604 addresses previously identified deficiencies in WBEP-EP 43.13.

WBEP-EP 43.13 has now been superceded by WBEP 5.31 which establishes a process for verification of cable records.

CATD 23801-WBN-10 states that no documents were identified defining allowable cable fill in penetration. Also, the words, "effectiveness of firestops and pressure seals for overfilled trays at wall and floor penetrations," need verification. The CAP states that Significant Condition Report (SCR) WBNECB8601 (B43 860926 910) is tracking the condition of overfilled trays. The corrective action of the SCR will be revised to include a statement to evaluate the effects of overfilled tray penetrations as related to pressure seals and firestops. This action will adequately address CATD 23801-WBN-10.

CATD 24000-WBN-02 in ECTG element report 240.0(A) identified that no specific requirements were identified for evaluation of overfilled raceways. The responding CAP states that the requirements for evaluation of overfilled raceways are identified in SCR WBNECB8601 and will be resolved as part of the corrective action for that SCR.

The corrective actions delineated in the CAPs for CATDs 23801-WBN-02, 05, 10 and 24000-WBN-02 have been accepted by ECTG and are scheduled for completion before fuel load of WBN unit 1. Since the corrective action is being tracked by CATDs, NSRS item R-84-19-WBN-07 is closed.

(Closed) I-84-34-SQN-03, <u>Availability Of The Material Certification And Requirements For Heat Number Sort Printout Entries</u>

On March 15, 1985, the NSRS report stated that there appeared to be inconsistencies in the compilation of required material certification and some ambiguity in the program established to control it. Specifically, NSRS could not conclude with certainty that the SQN Heat Number Sort Printout included only material with acceptable certification.

The NSRS recommended that a history of Heat Number Sort be reconstructed to establish the program's purposes, controls, designed functions, actual functions, and data quality.

This NSRS issue was addressed at WBN in Material Control Category Report 40703-WBN and was found to be a significant problem at WBN. Specifically, the material traceability, identification, and verification programs at WBN were determined to have deficiencies identified in CATD Nos. 40700-WBN-08 through 17.

On the basis of the issuance of CATDs 40700-WBN-08 through 17 this item is closed.

(Closed) R-85-02-SQN/WBN-2, Maintenance, Operation, and Tests of Thimble Tube Seals

The NSRS conducted a review of thimble tube maintenance, operation, and test at Sequoyah Nuclear site (SQN) in 1985. They recommended clarification of the instructions at SQN and WBN. They also recommended addition of precautions and measures to preclude degradation of the high-pressure seals. SQN provided part of the required clarifications and procedural changes but these were applied at SQN. Watts Bar Nuclear site instructions and measures are needed to preclude degradation of the high pressure seals and ejection of a thimble tube in the event of a pressure seal failure at WBN.

The NSRS recommended that WBN confirm that site instructions include measures to preclude degradation of the high pressure seals and ejection of a thimble tube in the event of pressure seal failure.

The ECTG's investigation found that CATD R-85-02-SQN/WBN-02 was issued to the WBN site management to address this issue.

The ECTG verified that the corrective action was completed at WBN by verification closeout for CATD R-85-02-SQN/WBN-02 (Memo T25 870731 826, dated July 31, 1986).

Based on the corrective action taken and verification closeout for this issue by ECTG, this issue is closed.

(Closed) I-85-06-WBN-01, The Adequacy of the Dispositions of Identified Cable Bend Radius Problems

The NSRS determined there was not sufficient manufacturer's documentation/justification/test data nor engineering basis (provided by Office of Engineering [OE]) to substantiate the final disposition documented for the NCRs or establishment of the Training Radius (R_t) and Pulling Radius (R_p) minimum values for multi-conductor cables. Further, the available information, as well as OEDC-developed acceptance criteria for the sampling program used to justify the as-installed conditions, lack engineering support.

NSRS report I-85-06-WBN was used as a basis for evaluation of cable bend radius problem in ECTG Construction Subcategory Report 10900. Report 10900 found that inadequate design review led to potentially invalidating the environmental qualification of installed cable. CATD 10900-NPS-01 was issued concerning this condition and the Corrective Action Plan (CAP) concerning cable bend radius states:

"TVA's Electrical Engineering Branch (EEB) has used the NSRS report, in addition to the manufacturer's requirements, to form the basis for its evaluation. Each of the areas of potential concern is being resolved into elements for further analysis. In each case the actual bend radius to which a cable has or could have been subjected is determined. This is accomplished for each Class 1E safety-related cable to which the concern applies. Subsequently, a determination is made of the effects, both short and long-term, on the integrity of the cable and its ability to perform its safety-related function as a result of being subjected to the reduced bend radius. This determination is based on consultations with, and recommendations from, the cable manufacturers; a review of the cable materials and construction involved; the particular application of the cable at TVA; and a review of TVA and industry environmental qualification testing as it relates to cable bend radius. In particular, EEB has identified the elongation stress, to which a cable is subjected as the result of a bend, as the critical parameter in determining acceptability. The evaluation of the concerns indicates that the minimum bend radius to which cables could have been subjected is that of one times its overall diameter. The resulting elongation stress has been calculated and compared with the cable's corresponding capability following its postulated accident scenario. This information is compiled from the environmental qualification test reports.

A final report, including EEB's comprehensive detailed analysis for the concern, including evaluation results, conclusions, and recommendations will be provided.

The effects of a reduced bend on shielded medium voltage power cable and coaxial, triaxial and twinaxial cables will be evaluated separately. EEB has issued project specific actions for the evaluation of these cables. These actions will include field inspections for the existence of pull boxes or condulets of any type in which the cable is bent as well as individual inspections of a cable's bend radius. The actual bend radius will be determined and the resulting effects of the integrity of the cable will be established.

The testing and analysis results have been submitted to the NRC. TVA is continuing resolution with the NRC on this issue. If any additional corrective action, either short-term or long-term is required as a result, then the CAP will be revised accordingly."

CATD 10900-WBN-01 identified WBN NCRs, W-290-P and 6295, as being open concerning Minimum Bend Radius (MBR) violations. These NCRs were written against MBR violations at specific points. The CAP for this CATD indicates that DNE has expanded them to include Cable Bend Radius problems in all plant areas and is currently working on resolution. an Electrical Engineer in DNE stated that a formal assessment by Stone & Webster of MBR problems would be complete by October 1, 1987. This assessment will provide the basis for the actual resolution which has an expected completion date of October 1988.

Based on the corrective actions now underway to resolve MBR problems at the corporate and WBN site level, it is concluded that this issue is being addressed. The corrective action is scheduled to be complete before fuel load of WBN unit 1. Since CATDs 10900-NPS-01 and 10900-WBN-01 are tracking the corrective action, NSRS Item I-85-06-WBN-01 is closed.

(Closed) I-85-06-WBN-02, The Adequacy of the Program for Cable Pulling Activities

The NSRS determined that Office of Engineering's (OE) and Office of Construction's (OC) established and documented program was inadequate to accomplish the cable pull activities at WBN. The past and present programs have been inadequate, inconsistent, and in violation of the accepted industry standards and practices.

The NSRS recommended that OE management should revise G-38 and G-40 to incorporate resolutions to the identified problems discussed in NSRS report I-85-06-WBN, and subsequently, WBN OE, OC, and Nuclear Power (NUC PR) management should revise the relevant OE documents as well as OC and NUC PR procedures. The final adequacy of the present cable installation should then be evaluated per revised acceptance criteria. A similar sampling approach, as discussed in the recommendation section for NSRS report I-85-06-WBN-01, should be considered. If evaluation of the results of the sampling program fails to adequately justify the as-installed conditions, then the development of an inservice inspection program should be considered.

The adequacy of current cable pulling activities at WBN has been evaluated in other ECTG reports and the findings indicate that some action has been taken to resolve the problems; however, several deficiencies still exist. These deficiencies have been identified on CATDs and Corrective Action Plans (CAP) and have been determined to be adequate.

Construction Subcategory Report Co 10900 addressed cable pulling using NSRS Report I-85-06-WBN as a basis for evaluation of the issue. The report found that problems with cable pulling had not been resolved and issued CATD-10900-NPS-01. The CAP in response indicates that test results from TVAs central laboratory show that allowable cable sidewall pressures (SWP) are four to five times higher than previous manufacturer's limits. Initial calculations for WBN on SWP have been performed and are under review. An electrical engineer with WBN EEB stated that these calculations were approximately 90% complete and no SWP problems were apparent. The testing and analysis results have been submitted to the NRC. The NRC's unresolved items 390/86-01-01, and 391/86-03-01 concerning the inpact of pullbys and flexible conduit connections, remain open. The TVA is continuing the resolution with the NRC on this issue.

General Construction Specifications G-38 and G-40 have been revised to limit the total sum of all bends in a conduit run to 360° between pull points.

Personnel contacted indicated that testing and evaluation of possible damage to cables as a result of "pullbys" and "jamming" would also be performed at WBN in a similar approach which SQN has taken. The approach for resolution of cable pulling problems is outlined in Section IV.2.0 of the WBN Nuclear Performance Plan which is presently in draft form.

The ECTG Element Report EN 239.0 (A) found several deficiencies regarding systems which control data of actual field conditions. These systems were inadequate in that engineering calculations could be based on data which did not represent actual field conditions. The CAPs for CATDs 23900-WBN-01 thru 10 were found to be adequate to resolve these deficiencies.

Based on the corrective actions underway, and the efforts committed toward resolution, it is concluded that this NSRS recommendation has been addressed. However, activity will not be complete to close this issue until work for CATDs 10900-NPS-01 and 23900-WBN-01 thru 10 is verified as complete. These activities are scheduled to be complete before fuel load of WBN unit 1. Since the corrective action is being tracked by the above CATDs, I-85-06-WBN-02 is closed at WBN.

(Closed) I-85-06-WBN-03, Voltage Drop and Short Circuit Current Determination and Verification

In NSRS report I-85-06-WBN, the NSRS determined that evidence to substantiate the performance of voltage drop and short circuit calculations for voltage level 3 power cables was not available. In item I-85-06-WBN-03, NSRS recommended that the Office of Engineering (OE) perform these calculations to ensure the adequacy of the size of the installed cable to perform its intended functions.

The ECTG WBN Element Report 205.1(A) found that some electrical load calculations did not reflect the current design. CATD 20501-WBN-01 identified that the WBN essential calculation program has not been completed. This program was established to identify, revise, or create those calculations required by such discipline to support safety systems used for the safe shutdown. The response to CATD 20501-WBN-01 indicates that TVA has committed to:

a. Identify all essential calculations
b. Locate all existing calculations
c. Compare existing calculations with the list of those identified as essential
d. Prepare and issue any missing calculations in accordance with NEP-3.1
e. Check existing calculations on a sample basis for adequacy
f. Complete the essential calculation program for each discipline before fuel loading of each unit
g. Establish a schedule for developing nonessential calculations prior to fuel load

The CATD 20501-NPS-04 identifies that the EEB controlling instructions for electrical calculations that were developed by Sargent & Lundy (S&L) have not been issued or fully implemented. The CAP describes the objectives and content of the long-term calculation program that TVA has purchased from S&L. The Watts Bar and Bellefonte essential calculations will be prepared prior to fuel-load using the S&L program.

The CATD 23900-WBN-01 in ECTG element report 239.0(A) was written concerning the lack of a procedure for engineering to extract the installed cable lengths entered into the Engineering - Construction Monitoring and Documentation (ECM&D) data file for review and verification of cable lengths used in calculations. The CAP in response states as follows:

> "TVA's Electrical Engineering Branch has issued requirements establishing the methods to be used for choosing values of cable lengths to be used in voltage drop and short circuit current calculations. This requirement is applicable to all essential calculations which utilize cable footages and will be used in the performance of electrical calculations.
>
> There are no program requirements or capabilities for Engineering to extract the installed cable lengths from the ECM&D data files into the Cable Schedule Computer Program (CSCP). This data is presently available on cable pull records.
>
> The ECM&D has been modified to establish an on-line application system which provides the user (DNE, DNE, or ONP) the capability to inquire on all cable records and related design/construction data, via on-line screens. Therefore, Engineering will be able to obtain the cable lengths to be used in calculations without having to reflect and address this information in the CSCP and procedures respectively. DNC will revise procedure QCP 3.05 and QCP 3.06-3 to establish the requirements for obtaining the actual installed lengths for future installations at the time of termination. DNC has absolute responsibility (under their QA program) for compilation, encoding, and verification of the data to be entered in the ECM&D data files."

The CAPs for CATD 20501-WBN-01, 20501-NPS-04 and 23900-WBN-01 have been accepted by ECTG. These corrective actions, when completed, will resolve NSRS item I-85-06-WBN-03. Since this work is being tracked by existing CATDs, this NSRS item is closed.

(Closed) I-85-06-WBN-05, <u>Underdevelopment of Establishment and Documented Limited QA Program and Failure to Incorporate the Established Limited QA Program Into Nuclear Quality Assurance Manual (NQAM)</u>

The implementation of the limited QA program as established in OECD-PRM-QI-6 was determined by NSRS to be inadeqaute. Also, the NQAM was determined to be inadequate in addressing the limited QA program as established by the superseded OECD-PRM-QAI-6.

NSRS recommended the Division of Quality Assurance (DQA) identify the required "special controls" applicable to systems previously identified as "limited QA" in the NQAM. Appropriate line organizations should incorporate those requirements into the OE, OC, and NUC PR procedures for implementation by the appropriate offices. In view of the fact that WBN had recognized security and fire protection as the only two systems for limited QA consideration, OE established a "limited QA" program on the other system identified in OEDC-PRM-QAI-6.

A ECTG investigation of this issue at WBN indicated that NQAM, Part I, Section 1.3, Revision 1 dated December 12, 1986 outlines the limited QA program requirements for ONP including WBN. CATD I-85-06-WBN-05 was initiated to ensure that the limited QA program is properly integrated into all designated programs. The evaluation of this issue is based on conversations with responsible personnel (WBN Project Engineer, various QA personnel, etc.) and review of applicable documents (NQAM, AIs, etc.). The limited QA program at WBN will have two basic areas that will require implementation.

One area will be for the completion of the construction/operational stage of the limited QA program that will require DNC, ONP, PQA, etc., to fully integrate the requirements into existing programs. The second area will be for backfitting the limited QA program into existing systems that have been installed without imposing appropriate (limited QA) requirements. The ECTG determined that some special requirements (QA) have been imposed, but the adequacy is poorly defined.

A comprehensive program will be necessary to ensure the adequacy and implementation of the limited QA program. The ECTG investigation of this issue has indicated that the program is not being implemented in accordance with NQAM Part I, Section 1.3. Also, there appears to be some uncertainly as to the role of the various organizations (DNC, DNS, etc.) in their correct function in fulfilling the limited QA requirements.

The ECTG conclusion of this issue (I-85-06-WBN) is that the issue is closed. The verification/closeout process of CATD I-85-06-WBN-05 should ensure the implementation of the limited QA program at WBN through all line organizations.

(Closed) R-85-08-OE/NUC PR-01,
<u>Inadequate OE Environmental Qualification Procedure for Equipment Qualification by Similarity</u>

The NSRS stated that the Office of Engineering (OE) procedure for environmental qualification of SQN electrical equipment allowed qualification by "similarity" but contained no definite criteria defining what constituted a "similar" item. NSRS recommended that these criteria be established and incorporated into the TVA procedures governing environmental qualification of electrical equipment, and that the criteria be used to re-evaluate the qualification status of electrical equipment previously qualified by similarity.

In a recent review of this issue the ECTG confirmed that the Environmental Qualification Project Manual addressed the qualification by similarity. Appendix 2B of the EQ Program Manual provides general guidance on important aspects of equipment environmental qualification. This guide may be used in conjunction with the environmental qualification checksheets (EQ Binder, Tab B). This NSRS item is closed.

(Closed) R-85-08-OE/NUC PR-02, Inadequate OE and NUC PR Procedures for Initiating and Processing NCR-FE/ERs

The NSRS concluded that the OE and Office of Nuclear Power (ONP) procedures for processing nonconforming conditions reports (NCR), failure evaluations (FE), and engineering reports (ER) were inadequate for assuring their timely initiation and processing. The NSRS recommended in-depth review of TVA's program and possible changes to provide for effective interface between participating TVA organizations, establishment of centralized tracking, and significant reduction in the time required for processing and dispositioning.

The ECTG reviewed the NSRS report, current commitments in the Nuclear Performance Plan, NQAM requirements, and the corrective action program implementation at the WBN site.

The Nuclear Performance Plan commitments concerning the nuclear corrective action program are outlined in Volume I, (Revision 4), Section VI.D.1 "Improvements in TVA's Nuclear Management Systems and Programs." They include a thorough review of the various nuclear programs to ensure that they contain adequate provisions for timely resolution of conditions adverse to quality. A new Conditions Adverse to Quality (CAQ) program with centralized tracking and specific time requirements was to be implemented at all sites by March 30, 1987.

The ECTG verified that the CAQ program is established in the Nuclear Quality Assurance Manual (NQAM), Part I, Section 2.16, Revision 2. At WBN, CAQ procedures are in place and overall site training has been completed. There is a commitment to timeliness in the CAQ report initiation and processing. The Tracking and Reporting of Open Items (TROI) computer system has been selected as the single corporate system for tracking CAQs. The CAQ timeliness will be tracked by TROI and overdue items tagged for management attention.

Based on the CAQ program initiation including commitments, documentation, training, tracking, and reporting/auditing provisions, this NSRS item is closed.

(Closed) R-85-08-OE/NUC PR-3, Lack of Priority on SQN NCR Initiation

The NSRS stated that a time period of approximately two months elapsed between the time the assignment was made to evaluate the adequacy of accuracies of the SQN containment pressure differential transmitters (CPDT) until the NCR was issued. It was recommended that the Office of Engineering (OE) define and document a policy to ensure that operating plants are afforded the proper priority regarding work activities related to safety and quality. The policy should be effectively communicated to all levels of OE management and employees, and reemphasized periodically.

The ECTG's investigation involved reviews of site documents and interviews with site personnel.

Procedure NEP 9.1, "Corrective Action", WBEP 3.05, "Conditions Adverse to Quality Reports and Problem Identification Reports", and AI-2.8.5, "Conditions Adverse to Quality-Corrective Actions" adequately address the CAQ program requirements at WBN and defines the policy that ensure operating plants are afforded the proper priority regarding work activities related to safety and quality.

The initial training for WBN site personnel in the CAQ program was found to have been completed. General employee training, GET 004, "Introduction to Quality Assurance/Quality Control" provides training for new employees in the CAQ program.

Interviews with site personnel indicate that site managers hold meetings twice a week to discuss the CAQ program status at WBN. However, if problems are identified with the CAQ program, meetings are held on an as needed basis for problem resolution.

Based on the reviews of applicable procedures and interviews with site personnel, ECTG concludes that this issue has been addressed and that this NSRS issue is closed.

(Closed) R-85-08-OE/NUC PR-4, Lack of Engineer Awareness of the NCR-FE/ER Process

The NSRS investigation concluded that some Office of Engineering (OE) engineers were unfamiliar with the process as a whole and the allowable timeframe for processing NCRs, FEs, and ERs.

The NSRS recommended establishment of a formal and effective training program on the OE procedures for initiating and processing NCR-FE/ERs.

The ECTG's investigation involved reviews of site documents and interviews with site personnel.

Procedure NEP 9.1, "Corrective Action", WBEP 3.05, "Conditions Adverse To Quality Reports and Problem Identification Reports", and AI-2.8.5, "Conditions Adverse To Quality - Corrective Actions" adequately address the CAQ program requirements to include the allowable timeframes for processing CAQs.

Interviews with WBN engineering personnel and the Division of Nuclear Engineering (DNE) training coordinator were conducted. Engineering personnel were found to be familiar with the CAQ process and the allowable time frames for processing CAQs. The DNE training coordinator stated that all required DNE personnel had completed the initial CAQ training at WBN. The ECTGs review of the DNE training logs revealed that DNE personnel had completed the CAQ training.

General Employee Training, GET 004, "Introduction to Quality Assurance/Quality Control" provides training for new employees in the CAQ program.

Based on reviews of applicable procedures and interviews with site personnel, ECTG concludes that this issue has been satisfactorily addressed. This NSRS issue is closed.

(Closed) R-85-08-OE/NUC PR-5, <u>Lack of Timeliness in Initiating and Processing Nonconforming Conditions Reports - Failure Evaluations/Engineering Reports (NCR-FE/ERs)</u>

The NSRS stated that NCR SCRNNEB8501 was not processed by the Office of Engineering (OE) within the time frames specified by established procedures. Additionally, NSRS stated that OE frequently exceeded the specified time requirements for processing NCR-FE/ERs. It was recommended that the necessity of compliance with NCR-FE/ER initiating and processing requirements be emphasized to all involved OE employees.

The ECTG reviewed the NSRS report, Nuclear Quality Assurance Manual (NQAM) requirements, the Division of Nuclear Engineering (DNE) implementing procedures, and Administrative Instructions (AI) concerning the corrective action process at WBN. A review of the Quality Systems Branch (QSB) review of the Condition Adverse to Quality (CAQ) program implementation at WBN was also conducted.

Interviews were conducted with WBN upper management, which included DNE, Office of Nuclear Power (ONP), and Quality Assurance (QA) personnel with regard to the CAQ program.

The TVA's commitment to timely and effective corrective actions are outlined in the Nuclear Performance Plan, Volume I, Section VI, Revision 4, and are documented in the NQAM, Part I, Section 2.16. The NQAM section establishes timeliness requirements and describes a process of escalating for failure to comply. The CAQ report will be tracked by TROI, and overdue items will be tagged for management attention.

Review of the Quality Systems Branch report revealed that problems with the implementation of the CAQ program have been identified at WBN. However, the current evaluation by ECTG found that WBN line management was addressing the CAQ problems and corrective actions are ongoing to resolve the implementation problems.

Based on the initiation of the new CAQ program, including commitments, documentation, training, tracking, and reporting/auditing provisions, this NSRS item is closed.

(Closed) R-85-08-OE/NUC PR-6, Failure of Management to Correct Problems with Timeliness and Responsiveness Involving the NCR-FE/ER Process

In the August 1985 report, NSRS concluded that problems with timeliness and responsiveness in identifying, documenting, and correcting nonconforming conditions adverse to quality (CAQ) had been identified by audit organizations and recognized by TVA management as a problem as far back as 1980, but were yet to be corrected. NSRS recommended that improved management controls be established and that the audit activities be intensified in the areas of NCR-FE/ER procedural compliance.

ECTG reviewed the NSRS report, Nuclear Quality Assurance Manual (NQAM) requirements, the Division of Nuclear Engineering (DNE) implementing procedures, and Administrative Instructions concerning the corrective action process at WBN. A review of the Quality Systems Branch (QSB) review of the CAQ program implementation at WBN was also conducted.

Interviews were conducted with WBN upper management, which included DNE, Office of Nuclear Power (ONP), and Quality Assurance (QA) personnel with regard to the CAQ program.

The TVA's commitment to timely and effective corrective actions are outlined in the Nuclear Performance Plan, Volume I, Section VI, Revision 4, and are documented in the NQAM, Part I, Section 2.16. The NQAM section establishes timeliness requirements and describes a process of escalating for failure to comply. CAQ timeliness will be tracked by TROI, and overdue items will be tagged for management attention.

Review of the Quality Systems Branch report revealed that problems with the implementation of the CAQ program have been identified at WBN. However, the current evaluation by ECTG found that WBN line management was addressing the CAQ problems and corrective actions are ongoing to resolve the implementation problems.

Based on the initiation of the new CAQ program, including commitments, documentation, training, tracking, and reporting/auditing provisions, this NSRS item is closed.

(Closed) I-86-101-SQN, Wire Bend Radius in Installations Using Conax Connectors

The NSRS found that Conax connectors in the containment at SQN did not meet wire bend radius requirements and that connectors were installed and accepted with deficiencies. NSRS recommended that verification of Conax connectors in the containment at SQN meet wire bend radius requirements and are properly installed and inspected.

The ECTG's review of the NSRS report revealed that CATD I-86-101-SQN was written to document the condition of Conax connectors and recommend examining WBN for the same condition and corrections. WBN's proposed corrective action plan is as follows:

"NCR W-290-P was written against all cable terminations using procedures MAI-4 and MAI-5. Cable terminated under these procedures were not inspected for bend radius. The Conax connectors in question were terminated under these procedures. Therefore, the bend radius of all Conax connectors will be reinspected per the disposition of NCR W-290-P."

Based on the WBN corrective action taken, the NSRS issue is closed. However, the CATD I-86-101-SQN will remain open and tracked until verification and closeout.