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

Report Nos.: 50-390/86-07 and 50-391/86-08

Licensee: Tennessee Valley Authority
6N11 B Missionary Place
1101 Market Street
Chattanooga, TN 37402-2801

Docket Nos.: 50-390 and 50-391 License Nos.: CPPR-91 and CPPR-92

Facility Name: Watts Bar 1 and 2

Inspection Conducted: March 22 - April 20, 1986

Inspectors: FOR 20 MAY 86
M. W. Branch Date Signed

FOR 20 MAY 86
G. A. Walton Date Signed

FOR 20 MAY 86
W. E. Holland Date Signed

FOR 20 MAY 86
C. W. Caldwell Date Signed

Approved by: 20 May '86
M. B. Shymlock, Section Chief Date Signed
Division of Reactor Projects

SUMMARY

Scope: This routine inspection entailed 455 resident inspector-hours on site in the areas of licensee action on inspector followup items, fire prevention and fire protection, preoperational test program implementation verification, testing of pipe support and restraint systems, plant status, TVA employee concerns program, structural concrete record review, pipe support inspection, and followup of licensee identified items.

Results: No violations or deviations were identified in this inspection report.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*E. R. Ennis, Acting Site Director
*G. Wadewitz, Construction Project Manager
*B. S. Willis, Acting Plant Manager
*H. B. Bounds, Maintenance Superintendent
J. E. Gibbs, Site Services Manager
R. Norman Jr., Acting Operations and Engineering Superintendent
*R. E. Bradley, Acting Operations Supervisor
*R. C. Miles, Modifications Manager
R. D. Tolley, Design Services Manager
R. D. Greer, Electrical Maintenance Supervisor
R. T. McCollom, Acting Instrument Maintenance Supervisor
*M. K. Jones, Engineering Group Supervisor
R. A. Beck, Health Physics Supervisor
M. J. Burzynski, Regulatory Engineering Supervisor
*J. A. McDonald, Plant Compliance Supervisor
R. R. Garu, Preoperational Test Section Supervisor
R. B. Rieger, Preoperational Test Unit Supervisor
R. E. Yarbrough Jr., Assistant Operations Supervisor
*T. W. Hayes, Nuclear Licensing Unit Supervisor, DNC
*L. E. Ottinger, Plant Compliance Staff, Nuclear Engineer
C. A. Borelli, Plant Compliance Staff, Nuclear Engineer
*G. R. Owens, Nuclear Engineer, Nuclear Licensing Section, DNE
*R. L. McKnight, Projects Engineer, Design Services
*R. C. Parker, Site Quality Assurance Manager, DNQA
*F. P. McQueen, QA Engineer, DNQA
*E. White, QA Evaluator, DNQA

Other licensee employees contacted included engineers, technicians, nuclear power supervisors, and construction supervisors.

*Attended exit interview

Note: During this period, the licensee's Office of Engineering was reorganized and is now referred to as the Division of Nuclear Engineering (DNE), the Nuclear Safety Review Staff was reorganized and is now referred to as the Nuclear Management Review Group (NMRG), and Plant Quality Assurance was reorganized and is now referred to as the Division of Nuclear Quality Assurance.

2. Exit Interview

The inspection scope and findings were summarized on April 22, 1986, with those persons indicated by an asterisk in paragraph one above. One inspector followup item, concerning staffing of the employee concerns

program at Watts Bar, was identified (paragraph 8). The licensee acknowledged the inspection findings with no dissenting comments. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection. At no time during the inspection period did the inspectors provide written material to the licensee.

3. Licensee Action on Previous Inspector Followup Items (92701)

(OPEN) IFI 390/85-46-01, Review of the Licensee's Program for Identifying and Correcting of Nonconforming Conditions. The inspectors are continuing with the review of the subject programs. Inspection report 390/85-46 identified concerns in the areas of promptness of evaluation of nonconformance reports (NCRs) and one party reviews of construction NCR's for significance. The inspector reviewed the latest revision of Quality Control Instruction (QCI) - 1.02, "Control of Nonconforming Items", Rev. 15, and determined that this construction procedure currently requires that a specific organization be assigned responsibility for the NCR for the purpose of trending. The procedure also requires that all personnel involved in identifying the need for, initiating, approving, or dispositioning an NCR be responsible for notifying the Quality Manager Office staff reviewer (on site) of information or circumstances which indicates that a nonconforming condition possesses attributes which would make the condition significant.

The inspector discussed the revised program with licensee personnel who are assigned responsibility for trending construction controlled NCRs and determined the following:

- A manual trending program for conditions adverse to quality (CAQs) was started in November, 1985. This program is described in WBN Quality control instruction 1.58, Rev 4. The program requires review of NCRs, construction audit deficiencies and other CAQs handled in the construction program. The program relies mainly on the reviewer's memory and involves approximately 80 CAQs each month. The report identifies areas that the CAQs fall in and also provides for an indication of adverse trends based on these areas. Construction senior management (Assistant Construction Engineers, Assistant Quality Managers, etc.) review these reports and provide feedback as to how adverse trends are being addressed and the results of corrective actions. After receiving feedback from construction senior managers, the reviewer prepares a final report which is signed by the construction project manager and then distributed to senior site and corporate management. The inspector questioned the reviewer as to whether she had written any NCRs based on her trending of CAQs and the answer was no. The inspector determined that no requirement existed that requires the reviewer to write NCRs based on adverse trends; however, this area will be addressed after review of the implementation of the new corporate trending program.

The inspectors attended a presentation on the corporate Office of Nuclear Power (ONP) tracking and trending program which was being formulated by the Office of Quality Assurance. This program is based on the Tracking and

Reporting of Open Items (TROI) system which has been used in the Division of Nuclear Engineering for tracking of CAQs. The new program's purpose is to provide for:

- Standardized Definitions (E. G. "Significance")
- A single CAQ reporting form
- Generic Reviews

The inspectors were informed that the ONP TROI system provides for a single source of information concerning CAQs, commitments made in response to findings, concerns important to safety issues and other items of interest to management initiated by other offices, organizations or agencies. Inputs to the system include QA Audit Deficiencies, Corrective Action Reports, Discrepancy Reports, NSRB Concerns, NSRS Findings, Significant Condition Reports, Nonconformance Reports, Problem Identification Reports, Potential Reportable occurrences, 50.55(e) Reports, Part 21 Reports, Commitments not related to CAQ's, Other CAQ's including Problem Reports, INPO Findings, INPO Suggestions, NRC Deviations and Violations, NRC Enforcement Letters, NRC Unresolved Items, NRC Inspector Follow-up Items, SALP Letters, Findings by Consultants and Contractors, Nuclear Insurance Inspection Findings, ASME Survey Findings, OIE Bulletins/Information Notices/NRR Generic Letters, INPO SOERs/SERs/O&MRs, and Vendor Technical Bulletins/Notices which require evaluation or action.

The licensee stated that they would have the first phase of the program, capability to provide printout based on specific trending codes, implemented by August 1, 1986. Full implementation of the program will provide capability to access information in the form of color graphics, etc. This capability will provide management with greater flexibility to analyze trending information and is scheduled for implementation by November 1, 1986. The inspectors will monitor implementation of the program and this item will remain open pending review.

4. Fire Prevention and Fire Protection - Unit 2 (42051)

During plant tours, the inspectors observed fire prevention and protection activities in areas containing combustible materials where ignition of these materials could damage safety - related structures, systems or components. The observations included verification that applicable requirements of Administrative Instruction (AI) 9.9 (Torch Cutting, Welding, and Open Flame Work Permit), Standard Practice WB 12.6 (Fire Brigade Instructor's Guide and Fire Brigade Handbook), AI 1.8 (Plant Housekeeping) and WBNP Quality Control Instruction (QCI) 1.36 (Storage and Housekeeping) were being implemented with regards to fire prevention and protection.

Within this area inspected, no violations or deviations were identified.

5. Preoperational Test Program Implementation Verification - Unit 1 (71302)

The inspectors conducted routine tours of the facility to make an independent assessment of equipment conditions, plant conditions, security, and adherence to regulatory requirements. The tours included a general observation of plant areas to determine if fire hazards existed, observation of other activities in progress (e.g., maintenance, preoperational testing, etc.) to determine if they were being conducted in accordance with approved procedures. Also observed were other activities which could damage installed equipment or instrumentation. The tours included evaluation of system cleanliness controls and a review of logs maintained by test groups to identify problems that may be appropriate for additional followup.

The inspectors witnessed full load testing of emergency diesel generator 2B-B. The test was being conducted in accordance with surveillance instruction (SI) 8.1 (Diesel Generator Start and Load Test). The inspectors questioned personnel assigned supporting roles and determined that all were familiar with the equipment and understood their responsibility during the test.

Within this area inspected, no violations or deviations were identified.

6. Testing of Pipe Supports and Restraint Systems - Unit 1 (70370C)

The inspector toured areas of the Unit 1 auxiliary building and reactor building. Numerous snubbers and restraints were examined. Visual examinations were conducted to check for deterioration and physical damage of mechanical snubbers. Visual examinations were also conducted to check for proper installation of base support plates, fasteners, locknuts, brackets, and clamps of fixed pipe supports.

Within this area inspected, no violations or deviations were identified.

7. Status of Plant Issues (92705)

The inspectors are following the status of plant issues that have been identified through various sources. These sources are the employee concern program, nonconformance programs, audit findings, etc. The status of several electrical issues are detailed in the following paragraphs. Followup of the licensee's overall evaluation, (i.e. reportability, generic implication, corrective action, etc.) will be reviewed by the inspectors as part of the ongoing inspection program.

a. Overcurrent, Overvoltage, or Calculation Problems

- Significant Condition Report (SCR) WBNEEB 8540 for both units; Construction Deficiency Report (CDR) 390/85-48 and CDR 391/85-47 - Inadequate overcurrent protection for cables. This item is currently being evaluated by the licensee.

- SCR WBNEEB 8539 Rev. 1, for Unit 1; CDR 390/85-47 - While performing a minimum system voltage calculation on the vital AC control power system, several components were identified that do not have adequate operating voltage per the manufacturer's minimum voltage requirements due to excessive voltage drop. This item has been dispositioned and as a result ECN 5958 was issued.

- Problem Identification Report (PIR) WBNEEB 8605 for both units - The use of computer routed cable lengths in certain engineering calculations are inadequate for use in final calculations depicting as-built conditions. Further evaluation of this item is currently in progress by the licensee.

- SCR WBNEEB 8607 for both units - Several drawings show that 15 amp fuses were originally used for circuit protection in the generator excitation system. A set of 80 amp fuses were later added, by the vendor, in series with the 15 amp fuses and the wiring size was not increased and the existing wiring cannot be protected by the existing fuses on any of the diesel generators. This item has been dispositioned and as a result ECN 6189 was issued.

- PIR WBNEEB 8553 for Unit 1 and PIR WBNEEB 8554 for Unit 2 - During a voltage drop study, EEB found that load data does not exist for radiation monitors. Further evaluation of this item is currently in progress by the licensee .

- SCR WBNEEB 8615 for both units - The FSAR states that there will be adequate electric supply for safe shutdown. The end-of-life voltage for the 125 V vital batteries is 105 V. The inverters require a minimum input of 105 V per the manufacturer's documentation but this does not allow for any voltage drop in the connections and connecting cables. Testing has been completed on Unit 1 components and they will be reworked as necessary.

- SCR WBNEEB 8616 for both units - Breakers 2B2 and 2C2 in the Auxiliary Building lighting boards 1 and 2 contain incorrect current limiting devices and do not provide overcurrent protection for electrical penetrations. This item has been dispositioned and ECN's 6197 and 6198 have been issued for units 1 and 2 respectively.

- PIR WBNEEB 8628 for Unit 1 and PIR WBNEEB 8629 for Unit 2 - An EEB calculation reveals a possible low voltage condition for motors on valves 1-FCV-3-33, 47, 87, and 100. The TVA specification requires valves to operate when the voltage at the motor terminals is 80 percent of nominal. This calculation shows that the voltage at the motor terminals can be less than 80 percent of nominal. This item is currently under licensee review.

b. Terminations

- SCR WBNEEB 8537 for both units; CDR 390/85-38 and CDR 391/85-37 - AMP terminal lugs that were recommended for applications on stranded wire were installed on solid conductor component leads. This item has been dispositioned with the result that the site will rework all identified discrepancies.

c. Failure to Follow Procedures

- Nonconformance Report (NCR) W-276-P for both units - Office of Engineering (OE) failed to provide adequate procedures for the installation of short bend radius elbow conduit fittings. Further evaluation of this item by the licensee is currently in progress.

- NCR W-324-P for Unit 1 - Under a workplan used inside containment, 18 Class 1E solenoid valves were re-spliced using Raychem solvent wipes that are not approved for use. This item has been sent to the Nuclear Engineering Branch for dispositioning.

- NCR W-354-P for both units - Use of Non Critical Systems, Structures, or Components (CSSC) material in CSSC systems without approval of the DNE. Further evaluation of this item is currently in progress by the licensee.

- NCR W-371-P for Unit 1 and common, and NCR 6583 for Unit 2 - Circuit breaker testing of molded case circuit breakers was deleted from the construction test program contrary to the requirements of Regulatory Guide 1.68. Further evaluation of this item is currently in progress by the licensee.

- NCR 6662 for Unit 2 - TVA field cable were not correctly installed in terminal lugs or have damaged insulation. This item has been dispositioned with the result that CONST personnel will rework the identified discrepancies.

- NCR 6678 for Unit 2 - Cables were not installed in an orderly manner and the lugs of several cables are bent approximately 90 degrees from their terminal block screws. This item is currently being reworked by CONST personnel.

- NCR 6624 for Unit 2 - Failure to control advanced copies of OE issued specifications with regards to cable weights and diameters in determining minimum bend radius, sidewall pressures, and pull tension requirements. Further evaluation of this item is currently in progress by the licensee.

- SCR WBNEEB 8535 for both units; CDR 390/85-37 and CDR 391/85-36 - Failure to annunciate the test position of two radiation monitors in the main control room. This item is currently under review by the licensee.

- SCR WBNEEB 8618 for Unit 1 and SCR WBNEEB 8619 for Unit 2 - Parts, other than the exact replacements, have been replaced on various types of vendor-supplied equipment without revision of the associated vendor drawing, manual, etc., to reflect the different replacement parts. This item has been dispositioned and ECN's 3592 and 3593 have been issued for unit 1 and 2 respectively.

- PIR WBNEEB 8627 for both units - As a result of the potential generic condition review of Browns Ferry Nuclear Plant, this PIR was initiated to investigate whether field change requests are being issued which lack complete engineering justification or interface review in accordance with OEP-10. This item is currently under review by the licensee.

d. Incorrect or Incomplete Drawings

- NCR W-298-P for Unit 1 - Handswitches in the Safety Injection system are wired incorrectly and the rating for some of these are inadequate for new solenoids which are to be installed. This item has been dispositioned with the result that new switches have been ordered and will be installed when received.

- NCR W-351-P for Unit 1 - Drawings issued by the Office of Engineering are incorrect as evidenced by the Auxiliary Feedwater (AFW) system walkdown by the AFW task force. This item is tied to NCR 6297 (this paragraph) for reportability and has not been dispositioned as of this report.

- NCR W-355-P for Unit 1 - Numerous discrepancies were found with regards to penetrations and drawing 47W625-11. Further evaluation of this item is currently in progress by the licensee.

- PIR WBNEEB 8552 for both units - When the C-S diesel generator (D/G) is substituted for one of the other D/G's, the ERCW supply valves for the C-S D/G are not properly aligned with the handswitches (located in the unit control room) of the valves that they are being substituted for. This item has been dispositioned and ECN 6010 has been issued.

e. Documentation

- NCR 6297 for Unit 1; CDR 390/85-51 - Numerous NCR's have been initiated documenting as-constructed drawings which do not correctly depict the as-built configuration of installed features. This item is currently under review by the licensee.

- PIR WBNEEB 8610 for both units - Vendor documentation to verify that the contacts on pressure, flow, temperature, level, etc. switches are rated for inductive load switching in DC control circuitry may not exist. Further evaluation of this item is currently in progress by the licensee.

- SCR WBNEEB 8621 for Unit 1 and SCR WBNEEB 8622 for Unit 2 - As a result of generic reviews, this PIR was initiated to investigate ECN data sheets to determine if they include all affected design documents required by Office of Engineering Procedure (OEP)-11. In addition, this sampling will investigate whether the affected drawings list all pertaining ECNs for that revision.

f. Equipment Failure

- NCR W-312-P Rev. 1, for both units - A 6900 Volt breaker on shutdown board 2A-A failed to open due to a sheared pin on the mechanical linkage to the trip coil. The licensee is currently awaiting documentation from General Electric Company in order to disposition this item.

- NCR W-318-P for both units, CDR 390/86-16 and CDR 391/86-33 - Westinghouse breakers in the 480 Volt switchgear show signs of extreme wear on the motor cutoff switch levers. This item is currently under review by the licensee.

- NCR W-342-P for Unit 1 - Hollow terminal screws were used on the Rosemount transmitters that were found to shear at low applied torque values. Further evaluation of this item is currently in progress by the licensee.

- NCR W-218-P for both units; CDR 390/85-29 and CDR 391/85-28 - 480 V Westinghouse switchgear breakers will not close electrically but will close manually. This problem was reviewed and it was determined that Westinghouse did not heat treat the spring latch assembly and this was the cause for breaker failure. The licensee has completed corrective actions on this item.

- NCR W-267-P Rev. 1, for both units; CDR 390/85-40 and CDR 391/85-39 - Corrosion cracks in 6.9 KV shutdown board PK test blocks supplied by General Electric Company. The vendor is currently evaluating this discrepancy.

g. Conduit and Cable Problems

- NCR W-262-P for both units; CDR 390/85-36 and CDR 391/85-35 - Lack of cable supports in vertical runs. The licensee is in the process of identifying cable trays and conduit that need to be evaluated.

- NCR W-353-P Rev. 1, for Unit 1 - Numerous discrepancies were found with regards to workmanship and inspection of CONAX electrical penetration enclosures. Further evaluation of this item is currently in progress by the licensee.

- NCR W-356-P for Unit 1 - There is damage to the sealant material on the end of CONAX electrical penetration feed-throughs. Further evaluation of this item is currently in progress by the licensee.

- NCR W-361-P for both units - Several cables were determinated and taped without using Temporary Alteration tags or other controlled methods. The effects of these lifted wires are the following: with the B train of the Auxiliary Building Gas Treatment System operating and the A train in standby, a loss of flow on B would not start A and an alarm for low flow would not be received. This item is being reworked by Nuclear Power (NUC PR) personnel.

- NCR 6302 for both units; CDR 390/85-54 and CDR 391/85-51 - Class II cables were installed in Class 1E circuits. This item has been dispositioned and returned to CONST personnel for rework.

- NCR 6360 for Unit 2; CDR 391/86-03 - Inspection for minimum bend training radii not made. This item is currently under review by the licensee.

- NCR 6529 Rev. 2 for Unit 1 and NCR 6569 Rev. 2, for Unit 2; CDR 390/86-27 and CDR 391/86-23 - Flexible conduit connections to solenoid valves are not installed to compensate for any thermal movement or seismic displacement. In addition, the minimum bend radius has been violated. This item is currently under review by the licensee.

- NCR 6536 for both units; CDR 390/86-24 and CDR 391/86-20 - 600 Volt rated two way connectors were used in 6900 Volt wiring. The procedures do not differentiate between voltage level and wire size for terminal lug selection. This item is currently under review by the licensee.

- NCR 6537 for both units; CDR 390/86-32 and CDR 391/86-27 - Internal wiring modifications in the main and aux control boards, where number 10 or 12 wire was specified, have been made using SLS wire which does not conform to TVA drawing 45N1640 or the Westinghouse specification. The licensee is currently evaluating the insulation capacities of the identified wiring.

- NCR 6584 for Unit 2 - Raychem heat shrink material was not installed per the drawing. This item has been dispositioned with the result that CONST personnel will rework the identified discrepancies.

- NCR 6623 for both units; CDR 390/86-34 and CDR 391/86-31 - Raychem Type N Heat shrinkable sleeves and molded parts used do not meet current requirements for harsh environments. This item is currently under review by the licensee.

- SCR WBNEEB 8547 for Unit 1; CDR 390/85-39 - A Train "A" auxiliary power cable is within 20 feet of the redundant Train "B" component cable. This item is currently under review by the licensee.

- SCR WBNEEB 8582 for both units - Cable tray crossings involving different divisional trays require a 12 inch separation from the top of the bottom tray to the bottom of the top tray per the design criteria. Even though tray separation was achieved initially, the disorderly placement of cables in these trays required an extended tray cover. If the extended cover is considered to be the top of the tray, then this is a violation of the design criteria. This item has been dispositioned and ECN's 6093 and 6094 have been issued for units 1 and 2 respectively.

- SCR WBNEEB 8634 for Unit 1 and SCR WBNEEB 8635 for unit 2 - Trained equipment in positioned loops for various cables is connected by non-divisional cables. This item is currently under review by the licensee.

- NCR 6673 for Unit 2 and NCR 6716 for Unit 1 - Silicone rubber insulated power and control cable with overall asbestos braid jacket purchased under certain contract numbers do not meet current requirements for use inside primary containment for Class 1E harsh environments. This item was dispositioned for rework with NCR 6302 (this paragraph).

h. Instrumentation

- PIR WBNEEB 8601 for Unit 1 and PIR WBNEEB 8602 for Unit 2 - Control drawings, instrument tabulations, and front views do not agree with the schematic and connection drawings as to separation requirements for several handswitches. Further evaluation of this item is currently in progress by the licensee .

- NCR 6670 for Unit 1 - Instruments were installed in the field without being properly received and inspected. Further evaluation of this item is currently in progress by the licensee.

i. Equipment Qualification

- NCR 6647 for both units - Cable CPJ and PXJ are unacceptable for use in Class 1E circuits. This item was dispositioned for rework with NCR 6302 (this paragraph).

- SCR WBNEEB 8522 for Unit 1 - Stainless steel flexible conduit manufactured by Servicair which is used as a moisture seal interface between CONAX seals and ASCO solenoid valves lacks seismic qualification documentation. This item has been dispositioned and as a result ECNs 5991 and 6215 were issued for units 1 and 2 respectively.

- NCR W-310-P for both units, CDR 390/86-06 and CDR 391/86-05 - The additional diesel generator contains a General Electric model 12 CFD differential protection relay which is not seismically qualified. A final report has been issued which identified that the relay could be qualified.

j. Miscellaneous

- PIR WBNEEB 8611 for both units - The balanced magnetic switches employed to monitor the status of security doors and gates have not been tested for adequacy of their anti-capture capabilities. This item has been dispositioned and ECN 6030 has been issued.

- PIR WBNEEB 8617 for both units - The AC power to the Emergency Notification System as shown on the drawings is compromised by the use of a physical power connection to the circuits by a plug and receptacle type arrangement. This violates IE Bulletin 80-15. This item has been dispositioned and ECN 6245 has been issued.

- SCR WBNEEB 8633 for both units - If an emergency start signal is received during the diesel generator idle period in the cooldown cycle, the diesel generator will accelerate to 900 rpm but the generator field will not be flashed in accordance with the requirements. This item is currently under review by the licensee.

- NCR W-327-P for Unit 1 - Several motor operated valves were found to be fully bottoming out during closing operations by use of the Motor Operated Valve Analysis and Test System (MOVATS). Further evaluation of this item is currently in progress by the licensee.

- NCR 6340 Rev. 1 for Unit 1 - A temperature element was required per the Q-List to be seismically supported but no Q installation test was performed. This component was upgraded to meet the Q classification by Engineering Change Notice (ECN) 6131 for Unit 1 and ECN 6132 for Unit 2.

- SCR GENNEB 8505 for both units - Two major control room activities were performed during the Control Room Design Review using procedures which were known to have significant unresolved comments pending resolutions. This item has been sent to the Electrical Engineering Branch (EEB) for dispositioning.

- SCR WBNEEB 8538 for both units; CDR 390/85-45 and CDR 391/85-44 - Process control air conditioning loads can start at the same time that large loads are sequenced on to the diesel generator which could cause ratings to be exceeded. This item has been dispositioned and as a result ECN 6211 was issued.

As a result of the great numbers of problems that have been identified for resolution in all areas (including electrical), the licensee has instituted the Watts Bar Unit 1 Startup Task Force. This task force consists of TVA and contractor personnel from various organizational divisions such as the Division of Nuclear Engineering, Nuclear Power, and Quality Assurance. On April 11, 1986, representatives of this task force, led by W. R. Brown, met with the NRC resident inspectors. The purpose of this meeting was to familiarize the inspectors with the program that the licensee is developing to identify the issues that need to be resolved prior to Unit 1 fuel load.

Within this area inspected, no violations or deviations were identified.

8. TVA Employee Concern Program (TI 2512/15)

On February 1, 1986 TVA implemented the current Employee Concern Program. The program, as described in operational organization procedure, Standard Practice WB 2.1.17 and construction procedure SOP-48, establishes a means for employees to communicate any and all information related to conditions, practices, or events which may adversely impact quality, deviate from technical or procedural requirements, or have the potential for degrading equipment, operating capabilities or personnel ability to accomplish assigned responsibilities. The program establishes the following avenues open to licensee personnel to facilitate their obligation to report such practices, conditions, or events:

- Contact with first-line supervision.
- Referred via first-line supervision to higher management levels or other organizational units to which the employee will be a party.
- Direct or referral contact with the Employee Concern Program Site Representative.
- Submittal to the TVA Inspector General.
- Direct contact with the NRC in accordance with NRC Form 3, or direct contact with other government agencies, as appropriate.

On April 21, 1986, the inspectors met with the Employee Concern Site Representative for the purpose of discussing the implementation of the program at Watts Bar. The current staffing of only one person may not be adequate based on the number, nature and backlog of issues being identified. The site representative indicated that the licensee's corporate Employee Concern Program Manager has been notified of the personnel needs and one additional person will be assigned. The inspectors will monitor the licensee program including a periodic assessment of backlog. This is identified as inspector followup item 390/86-07-01.

Within this area inspected, no violations or deviations were identified.

9. Structural Concrete Record Review - Discussion of Concrete and Mortar Concerns. (46055)

On April 21, 1986, a meeting was held on-site with the licensee, NRR and NRC personnel in attendance to discuss the licensees program presently being implemented to address employee concerns in the subject area. At present the employee concern program has identified three areas which require further evaluation. Specifically, they involve concerns about low compressive strengths of concrete, incomplete sampling frequency for compressive strength of concrete, and incomplete sampling of mortar for compressive strength. The licensee reported the following findings in these areas.

a. Low Compression Strength Concrete.

An initial evaluation of all mixes used in Category I structures at Watts Bar Nuclear Plant has been completed. This evaluation examined all compressive strength test results and periods of time when each mix did not meet the specified strength requirements.

Examination of all compressive strength test results (approximately 6100) indicated that approximately 800 tests were less than the specified strength at the specified age. While essentially all of these low strength tests have been previously evaluated on an individual basis, an overall evaluation of the total mix population is underway.

Initial results of this overall evaluation indicate that of the approximately 380,000 cubic yards of concrete placed at Watts Bar Nuclear Plant, approximately 20,000 cubic yards will require detailed engineering evaluation.

b. Incomplete Sampling Frequency for Compressive Strength Of Concrete.

The investigation report identified 59 occurrences where the sampling frequency was incorrect. These occurrences were evaluated. Seventeen were identified in which the sampling frequency requirements were not met. NCR 6721 has been issued to address sampling frequencies. A detailed review of production records is being initiated to identify when sampling was inadequate. Engineering evaluations and corrective actions will be made as necessary.

c. Incomplete Sampling of Mortar for Compressive Strength.

The mortar (designated Grout 7 in the concrete quality control data base) used at the Watts Bar Nuclear Plant was proportioned to have a compressive strength of 5000 psi at 28 days. This mortar mixture was used for placements using concrete specified strengths of 5000, 4000, and 3000 psi.

Review of the strength test records indicates that the mortar was not sampled for strength during all periods of time and did not always meet the strength requirements for a 5000 psi mix at 28 days. NCR 6720 has been issued to address the strength and sampling of the mortar.

The licensee is performing further evaluations to determine disposition of these areas. The planned completion date is tentatively scheduled for mid July, 1986. Further evaluations by the NRC are in progress.

Within the area inspected, no violations or deviations were identified.

10. Pipe Support Inspection. (50090)

The inspector selected pipe support number 47A450-3-8A for a detailed review of the concrete expansion anchor installation. Specifically, the inspector reviewed the expansion anchor spacing requirements for compliance with "TVA General Construction Specification G-32 For Bolt Anchors Set In Hardened Concrete". Visual inspection of the baseplates found 3/4 diameter anchors installed 3 3/4 inches from an imbedded unistrut (strip insert). As stated in specification G-32, Table 3.6.3, a minimum spacing requirement of 6 1/2 inches is needed between a 3/4 inch anchor and the unistrut. Paragraph 3.6.3.3 gives relief for this requirement if the strip insert is not used as a support for a distance of 18 inches adjacent to the anchor. If this case occurs a reduced criteria of 1 inch spacing is allowed. Further observation by the inspector found the unistrut was not loaded within the 18 inch criteria.

Therefore, this installation meets the acceptance criteria. The support reviewed met the criteria for concrete expansion anchor spacing.

Within this area inspected, no violations or deviations were identified.

11. Followup of Licensee Identified Items (92700)

(Open) CDR 391/81-77, Alarm Setpoint on Level Transmitter. This deficiency report described a condition adverse to quality in that safety injection accumulator level bellows assemblies had the potential to indicate falsely if the bellows assemblies became flooded. This CDR was closed in inspection report 391/83-05. However, since the licensee has not completed corrective actions in Unit 2, this item will be reopened.

Within this area inspected, no violations or deviations were identified.