UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Report Nos.: 50-390/84-37 and 50-391/84-31

Licensee: Tennessee Valley Authority
500A Chestnut Street
Chattanooga, TN 37401

Docket Nos.: 50-390 and 50-391

License Nos.: CPPR-91 and CPPR-92

Facility Name: Watts Bar 1 and 2

Inspection Dates: May 25 - June 23, 1984

Inspection at Watts Bar site near Spring City, Tennessee

Inspectors: _____ 7/13/84
for M. B. Shymlock — Date Signed

_____ 7/13/84
for W. B. Swan — Date Signed

_____ 7/13/84
for W. E. Holland — Date Signed

Accompanying Personnel: J. G. Leuhman, D. Brewer, K. M. Jenison, H. Bibb, J. K. Rausch

Approved by: _____ 7/13/84
for C. A. Julian, Section Chief — Date Signed
Division of Reactor Projects

## SUMMARY

Areas Inspected

This routine inspection involved 621 resident inspector-hours on site in the areas of licensee action on previous enforcement matters, licensee action on previous inspection items, followup on licensee identified items, open TMI action item status, TMI task item closures, review and followup of safety evaluation report, independent inspection effort, comparison of as-built plant to FSAR description, soil stabilization dam construction, management meeting, and plant tours.

Results

Two violations were identified - failure to follow procedures for configuration control and an inadequate clearance procedure; and failure to perform a step in a maintenance procedure.

## REPORT DETAILS

1. Persons Contacted

*W. T. Cottle, Plant Manager
*G. Wadewitz, Construction Project Manager
*R. C. Miles, OEDC Project Management Office
*H. B. Bounds, Superintendent (Maintenance)
*H. J. Fischer, Construction Engineer
*S. Johnson, Jr., Quality Manager - Construction
E. R. Ennis, Assistant Plant Manager
D. C. Williams, Nuclear Licensing Unit Supervisor
R. L. Bruce, Electrical Maintenance Supervisor
*R. C. Sauer, Plant Compliance Supervisor
*J. L. Collins, Mechanical Maintenance Supervisor
R. Norman, Jr., Operations Supervisor
*T. W. Hayes, Nuclear Licensing Unit Supervisor
*B. S. Willis, Plant Superintendent for Operations and Engineering
*W. L. Byrd, III, Preoperational Test Supervisor
A. W. Rogers, Supervisor, Site QA Unit
G. L. Williams, Instrument Maintenance Supervisor
S. M. Anthony, Nuclear Power Compliance Staff, Mechanical Engineer
*J. E. Engelhardt, Nuclear Power Compliance Staff, Engineer
*G. Owens, EN DES Licensing Engineer
*C. S. Hsieh, OQA - Construction, QA Evaluator
*K. Jones, Engineering Supervisor
*H. L. Pope, Field Quality Engineering QC Supervisor
*L. J. Smith, Field Quality Engineering QE Supervisor
*T. L. Howard, Field Quality Engineering Section Supervisor
*R. H. Smith, Assistant Preoperational Test Section Supervisor
*K. Beaty, Mechanical Maintenance Engineering Supervisor

2. Exit Interview

The inspection scope and findings were summarized on June 22, 1983, with those persons indicated in Paragraph 1 above.

3. Licensee Action on Previous Enforcement Matters (92702)

(Closed) Violation (390/82-18-05; 391/82-15-04) Failure to Conduct Adequate Audits. The NRC inspector had found that Audit OPQAA-WB-SP-01 did not verify compliance with corrective action procedures for design deficiencies, nonconforming items in procurement, procedural deficiencies, or drawing discrepancies; and that the maintenance portion of the audit was performed by an auditor not trained in accordance with prescribed instruction ID-QAP-18-1.

At the time, the licensee had one Office of Power QA Auditor (OPQA) on site. TVA acknowledged the inadequacy of the auditing manpower; but protested that the scope of effort suggested by the NRC inspector could not, and customarily was not, covered in a single audit.

Since April of 1982 when this item was opened, TVA's quality assurance forces have been adequately augmented and have undergone several reorganizations and reassignments of functions. The auditing unit based in Knoxville, the on-site Quality Assurance staff, and the Compliance group of Nuclear Power and Watts Bar are adequately manned. This item is closed.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Licensee Action On Previous Inspection Items (92701)

a. (Closed) 390/82-22-01, Review Method to Ensure that Correct Source Documentation is Available to Personnel Charged with Responsibility for Determining Reportability. The inspector reviewed the specific nonconformance reports and associated engineering change notices and found the review for determining reportability to be adequate.

The licensee's information worksheets for Determination of Reportability for both 10 CFR 50.55(e) and 10 CFR 21 reports are adequate checklists to aid in determining reportability.

ID-QAP 2.7 Rev. 0, "Q List" dated October 17, 1983, issued by the Manager of Quality Assurance (QA) and internal memorandum from the Manager QA OQA831028001 and OQA840323001 give adequate guidance on the implementation of the new Q List program.

b. (Closed) IFI 390/84-13-01, Chemical and Volume Control System (CVCS) Discrepancies. The subject discrepancies were identified by the inspector during a walkdown of the safety portion of the CVCS in inspection report 390/84-13. The licensee corrected the discrepancies and the inspector conducted a reinspection of selected portions of the CVCS. All discrepancies had been corrected and no additional discrepancies were identified.

6. Followup on Licensee Identified Items LII (92700)

a. (Open) LII CDR 390/83-62; 391/83-57, Loading on Diesel Generator for LOCA and Blackout Causing Unacceptable Frequency Transient. On November 7, 1983, TVA reported that chiller/cooler packages connected to the diesel generator during subsequent loading would bring the calculated frequency transient above Regulatory Guide 1.9 limits. Corrective action undertaken includes the load sequence delaying of certain loads. These loads are as follows:

(1) On the 480v shutdown boards 1A2-A and 2A2-A delay loading of the shutdown board room chiller packages B-B and A-A by 45 seconds (instead of 0 seconds).

(2) Delay load sequencing the 1A-A, 1A-B, 2A-A, and 2B-B containment spray pumps to their respective 6.9 kv shutdown boards to 120 seconds instead of 35 seconds.

The work conducted under NCR-WBNEEB 8312-R1 to make these change has not been completed at this time.

b. (Closed) LII CDR 390/83-68; 391/83-63, Limitorque QA Program. On November 15, 1983, TVA reported that the vendor's QA program for a spare parts order was deficient. This was reported as a 50.55(e) item for both Watts Bar and Bellefonte. The inspector examined the records and determined that this item has no impact on Watts Bar since deliveries are scheduled for Bellefonte only.

c. (Closed) LII CDR 390/82-75; 391/82-71, Post Accident Readings From Containment Sump Level Transmitters. On July 8, 1982, TVA reported a design deficiency in that the water used in the 18 feet of capillary tubing between the subject transmitters and their respective bellows change states from liquid to steam which could damage the bellows sensor.

Corrective action was to replace the water with silicon oil and change the calibrated span of transmitters.

By review of TVA and W documents the inspector found that the corrective action has been completed. TVA NCRWBNSWP8236 verifies that all corrective action has been completed.

d. (Closed) LII CDR 390/81-50; 391/81-48, 390/84-22; 391/84-21, and IFI 390/84-13-03, Upgrading Emergency Raw Cooling Water (ERCW) System to Seismic Category I (SER 3.2.1, 3.2.2, and 9.21). TVA incorrectly classified the following ERCW System Components.

(1) Cooler/chiller for primary safety related applications (not classified Seismic Category I as required)

(2) Interconnecting piping between isolation valves of chiller/coolers installed to incorrect quality group standards

(3) Screen wash piping and valves, TVA Class G (not TVA Class C as required)

The chiller/cooler classification deficiency was reported to NRC on March 24, 1981. TVA's design review of the ERCW found that the chiller/coolers were incorrectly classified seismically. TVA reviewed their records and verified that all ERCW components having a primary safety function were certified as Seismic Category I in accordance with WB-DC-40-31.2 as specified in contracts.

The classification deficiency involving the interconnecting piping between isolation valves of chiller/coolers was reported to NRC as CDR 390/81-50; 391/81-48 on May 7, 1981. This item although not identified by number was discussed and closed out in IE Inspection Report No. 50-390/84-13 and 50-391/84-11 under item no. CDR 390/81-33 and 391/81-32.

The screen wash piping and valves were reported as nonconformances by TVA 50.55(e); 390/84-22; 391/84-31. TVA drawings showed these items to be TVA Class G in lieu of TVA Class C as defined in FSAR paragraph 3.2.2.3. Corrective action has been taken to upgrade the present Class G, Seismic Category I(L) - Position Retention - Piping System to meet the intent of TVA Class C.

The inspector reviewed the above incorrectly classified items verifying that all items were corrected. The chiller/coolers for safety related equipment are classified as Seismic Category I per TVA Drawing No. 47W450 - 32R2, Note 26 and seismic reanalysis by Battelle dated September 4, 1976 and Seismic Report No. UDRI-TR-76-56A dated September 30, 1976 prepared by the University of Dayton. Piping between isolation valves of chiller/coolers is Quality C (Seismic Category I) per TVA drawing 47W845-4, R17; ECN 3842 and 4825.

e. (Open) LII CDR 390/82-56, Setpoint Program for Overpressure Mitigating System (OMS). On May 21, 1982, TVA reported that the setpoint for the second PORV had been chosen such that Appendix G limits (for Reactor Vessel fracture toughness) could have been violated for the mass input events of one or two centrifugal charging pumps operating at maximum flow with isolation of the letdown flowpath.

Westinghouse recalculated OMS setpoints based on PORV data furnished by TVA. On this basis the OMS will be capable of maintaining overpressure transients below Appendix G limits for mass input events of 120 gal/min or less in the event of a single PORV failure. The mass input represents injection from a single centrifugal charging pump with inadequate letdown isolation.

The recalculation is being performed based on mass input from a single centrifugal charging pump. This is because the draft technical specification requires that all charging pumps excluding the required operable pump be demonstrated inoperable when one or more RCS cold legs is less than or equal to 310°F.

The resident inspector reviewed TVA letter dated June 7, 1984 to the NRC (TVA Number A27-840607-011) which transmitted Westinghouse Analysis "Setpoint Program Determination for the Westinghouse Cold Overpressure Mitigating System in the Watts Bar Unit 1 Plant." Completion of this review and review of TVA's FSAR Section 5.2.2.4.2.1 revision to correct differences are further action needed to adequately close this item.

f. (Closed) LII CDR 390/84-02; CDR 391/84-02, Live Loads Not Considered In Design of Concrete Partition Walls. The deficiency identified by NCR WBN WBP-8338 was reported to NRC on December 13, 1983. It was found by TVA design review that unacceptable dynamic loads would be imposed on several 8-inch thick reinforced concrete partition walls by seismic forces. The structural restraints needed were designed under ECN 5407 which was closed February 24, 1984. Installation of the bolted and welded restraints to strengthen the partition walls was under drawings 41N373-1, -2, -3, -4, -5 and -6 and 41N483-3 and -4. The physical work was found by the senior construction resident inspector to have been completed for both units in conformance with the drawings.

g. (Closed) LII CDR 390/82-20; CDR 391/82-19, TVA's Nuclear Safety Review Staff (NSRS) Quality Assurance Audit R-81-28-WBN Deficiencies. The licensee gave notice on January 27, 1982, of deficiencies identified under NCR Audit R-1-28-WBN. This audit had been performed in response to NRC documentation in Report 390/81-14 of inadequacies in TVA's Quality Assurance program and its implementation at Watts Bar. The areas covered by the audit were: program improvements, training and qualification of personnel, quality control, system transfer, construction tests and preoperational tests, system cleanliness, corrective action, and QA audits.

The Office of Engineering Design and Construction (OEDC) responded to the findings of the audit by treating every finding, even those judged to be non-significant to nuclear safety, as important and to be dealt with individually as indicated by the TVA internal memorandum from the Manager of Engineering Design and Construction to the Director of the Nuclear Safety Review Staff dated January 27, 1982.

The audit by NSRS was performed between November 16 and December 1, 1981. The areas covered were:

A. Program Improvements
B. Training and Qualification of Personnel
C. Quality Control
D. System Transfer
E. Construction Tests and Preop Test
F. System Cleanliness
G. Corrective Action
H. QA Audits

The audit report listed 22 adverse findings in these areas. The licensee's Final Report dated March 2, 1982, for this CDR listed these adverse findings and cited corrective actions taken and/or planned for each. In the two years following this "final" report, the licensee implemented extensive corrective actions, and followup NSRS audits verified the adequacy of corrective actions.

The "final" report had indicated corrective action had been completed on item - 13, Unqualified NDE Procedures; on item -15, Inadequate Requirements in Cleaning and Flushing Procedures; on item - 16 Determining Root Cause for Deficiencies, and on item -17, Inadequacies in WBNP-QCI-1.2.

The report for followup NSRS Audit R-82-24 WBN closed item -01 Training and Qualification of Personnel; item -02 Inspector Demonstration of Practical Knowledge; item -03 Engineering Unit Personnel Demonstration of Practical Knowledge; item -04 Procedural Comprehension; item -06 Inadequate Documentation of Training; item -07 Job Performance Evaluation; item -08 Personnel Qualification Summaries; item -09 QA Orientation/Indoctrination; item -15 Inadequate Requirements in Cleaning and Flushing Procedures; item -18 Review of the Quality Trend Analysis Report; and item -22 Inadequate Resources for the Site QA Unit.

The report for Audit 82-13-WBN had closed item -12 Responsibility for Inspection; item -13 Unqualified NDE Procedures; item -16 Determining Root Cause of Deficiencies; item -17 Inadequacies in WBNP-QCI 1.2; and item -19 Revision of the QA Trend Analysis Master Status Report.

On May 19, 1983 by TVA memorandum from Manager of Quality Assurance to Manager of Engineering Design and Construction, NSRS Report No. R-81-28-WBN detailed the closure of item -05 Inadequate Training Program; item -10 Quality Control Procedure Inadequacies; and item -11 Inadequate Document Control of Procedures.

NSRS Report No. R-83-27-NPS closed item R-81-28-14 Inadequate Procedure Review and item -20 All Aspects of QA Program Not Audited.

By TVA memorandum dated July 25, 1983, from the Director of the Nuclear Safety Review Staff to J. W. Anderson, Manager of Quality Assurance, the final item, R-81-28-WBN-21 Interface Between the Site QA Unit and the Construction QA Manager's Office was closed.

On November 15, 1983, the senior construction resident inspector consulted with NSRS audit team members concerning the closing of this CDR. He was told that followup on the audit findings had been transferred to the Site Quality Manager.

In the interim, between initiation of CDR 390/82-20 by NRC Report 390/81-14 and the present, the subject audit along with follow-on audits by NSRS and NRC have resulted in substantial alterations in TVA's QA program and its implementing documents and organizations. The inspector has reviewed the latest revisions of the documents and QA-QC organizations and has found adequate justification for closure of the subject CDR.

h. (Closed) LII CDR 390/82-111, Postulated Accident Blowdown of More Than One Steam Generator. To prevent possible degraded heat removal capability of the Auxiliary Feedwater System, a rearrangement of the

power supplies to the steam generator power operated relief valves (PORV) was conducted. The PORV remote manual control circuits on steam generator loops 1 and 4 were affected. The power supply for PCV-1-30 was changed to 125 VDC supplied from Battery Board IV and PCI-1-5 was changed to the supply from Battery Board III. This rearrangement of the power supplies will ensure three independent feedwater supplies for decay heat removal.

i. (Closed) LII CDR 390/83-65; 391/83-60, Environmental Qualification of Mechanical Equipment. The subject deficiency was reported to NRC on November 9, 1983, as NCR's WBN NEB 8326, 8327, 8328 and 8331. By Final Report dated March 30, 1984, the licensee stated that nonconformance under NEB 8327 and NEB 8331 was no longer considered reportable. Based on this information, the CDR was erroneously listed as nonreportable in NRC inspection report 390/84-35, 391/84-33.

However the licensee's Final Report started that NRC's NBE 8326 and NEB 8328 were reportable and that environmentally unqualified paper gaskets in designated pumps would be replaced.

Later TVA Memorandum NEB '840604 252, from the Chief, Nuclear Engineering Support Branch to L. M. Mills, Manager of Nuclear Licensing, subject, "Environmental Qualification of Mechanical Equipment" stated that results of radiation dose rates on the pumps show that the radiation life of the paper gaskets is 36 years. Therefore, TVA resolved to retain the paper gaskets and replace them every 20 years. Closure of the item, for both Unit 1 and 2, is confirmed.

7. Open TMI Action Item Status (25401)

The following is a listing of all outstanding TMI (NUREG-0737) items requiring action for Unit 1 less items addresed in paragraph 8 of inspection report 390/84-13.

a. (Open) 80-RD-48, Item 1.C.1, Short-term Accident and Procedures Review. This item was addressed in NUREG-0847, paragraph 13.5. This licensee should provide the inspector with applicable information addressing the staff concerns relating to differences which did not appear necessary in AOI-16 and EOI-0. General Letter 82-33 addresses long range requirements with regards to emergency operating procedures.

b. (Open) 80-RD-38, Item I.C.6, Verify Correct Performance of Operating Activities. The licensee has issued a new administrative instruction (AI 2.19, Independent Verification) which establishes policy for implementing the requirements of the subject item. The resident inspectors are reviewing the implementation of this instruction with regards to other applicable procedures.

c. (Open) 80-RD-10, Item I.C.7, NSSS Vendor Review of Procedures. NSSS vendor review of applicable procedures is in progress. The licensee should provide the inspector with dates as to when these reviews will be completed.

d. (Open) 80-RD-49, Item I.C.8, Pilot Monitoring of Selected Emergency Procedures. This item was addressed in NUREG-0847, paragraph 13.5. The licensee should provide the inspector with confirmation that the Watts Bar procedures have been revised to make them consistent with Sequoyah procedures.

e. (Open) 80-RD-39, Item I.D.1, Control Room Design Reviews. This item was addressed in NUREG-0847, Appendix D. The licensee will complete implementation of all items committed for correction prior to start of mini hot functional.

f. (Open) 80-RD-50, Item I.D.2, Plant-Safety-Parameter Display Console. The licensee will provide additional information regarding commitments and implementation schedule for the subject item for NRC staff review/ approval.

g. (Open) 80-RD-11, Item I.G.1, Training During Low Power Testing. The licensee has submitted a change to the FSAR which will reinstate the natural circulation test back into the startup test program. This test will be reviewed by the inspectors during low power testing with regards to operator training.

h. (Open) 80-RD-51, Item II.B.1, Reactor-Coolant-System Vents. The inspector has verified that the reactor coolant venting system has been installed; however, procedures for system operation have not been prepared. The licensee should provide the inspector with a date when the procedures will be available.

i. (Open) 80-RD-14, Item II.B.4, Training for Mitigating Core Damage. This item was addressed in NUREG-0847, paragraph 13.2.2. The licensee should provide the inspector with a date as to when all plant personnel which will be involved in the mitigation of accidents resulting in core damage have been trained.

j. (Open) 80-RD-15, Item II.D.1, Relief and Safety-Valve Test Requirements. The licensee submitted its final response to this item in a letter from TVA (D. S. Kammer) to E. Adensam (NRC) dated July 22, 1983. This item will remain open pending NRC staff review approval of TVA final response.

k. (Open) 80-RD-17, Item II.E.1.1, Auxiliary Feedwater System Evaluation. See Inspection Report 390/83-56 for the outstanding issue of this item.

l. (Open) 80-RD-23, Item II.F.1, Accident-Monitoring Instrumentation. Installation and procedures for the noble gas monitor, iodine/particulate sampling and containment high range monitor have been addressed in

inspection report 390/84-09 and will be evaluated in subsequent inspections.

With regards to containment pressure monitors, the licensee should provide the inspector with a date when pressure monitors will be installed which meet the requirements of NUREG 0847, paragraph 6.2.1.

With regards to containment water level and containment hydrogen monitors, the licensee should provide the inspector with dates when instrumentation which meets the requirements of NUREG 0847, paragraph 6.2.1 and 6.2.5 will be installed.

m. (Open) 80-RD-24, Item II.F.2, Instrumentation for Detection of Inadequate Core Cooling. The inspectors will verify the operational status of the reactor vessel level instrumentation system and the incore thermocouples during the performance of the applicable preop tests. The licensee is in the process of resolving the method and equipment required for the subcooling monitoring system.

n. (Open) 80-RD-25, Item II.G.1, Power Supplies for Pressurizer Relief Valves, Block Valves and Level Indicators. This item was addressed in NUREG-0847, paragraph 8.3.3.4. The licensee should provide the inspector with a date as to when the NRC staff's concern will be implemented or resolved.

o. (Open) 80-RD-29, Item II.K.1, IE Bulletins. The licensee should provide the inspector with a status of implementation of applicable portions of IEB 79-05, 79-05A, 79-06A, 79-06B and 79-08.

p. (Open) 80-RD-42, Item II.K.2 Orders on B and W Plants. The licensee has stated that applicable portions of the subject item have been evaluated by the Westinghouse Owners Group (WOG). The results have been submitted to the NRC staff for review/approval.

q. (Open) 80-RD-52, Item II.K.3, Final Recommendations, B and O Task Force. Parts of this item have been addressed in Inspection Report 390/84-35. The licensee has submitted responses to the staff with regards to item II.K.3.1 (Auto PORV Isolation), Item II.K.3.5 (Auto Trip of RCPs) and Item II.K.3.10 (Anticipatory Trip at High Power). Further action on this item will be conducted when the NRC's staff response is received by the resident inspector.

r. (Open) 80-RD-30, Item III.A.1.1, Emergency Preparedness, Short Term; 80-RD-31, Item III.A.1.2, Upgrade Emergency Support Facilities; Item III.A.2, Emergency Preparedness. Generic Letter 82-33 and NUREG-0847, paragraph 13 address these issues. The licensee should provide the inspector with dates as to when each of these items will be complete.

s. (Open) 80-RD-32, Item III.D.1.1, Primary Coolant Outside Containment. The licensee has prepared technical instructions (TIs) to determine primary coolant leakage from systems outside containment. TI 31.7, Series Leak Determinations, will be completed during mini hot functional testing and the licensee should prepare a report summarizing the results.

8. TMI Task Item Closures

(Closed) 80-RD-53, III.D.3.4, Control Room Habitability. A review of the subject item was conducted by the NRC staff (See NUREG-0847, paragraph 6.4) and found to be acceptable.

9. Safety Evaluation Report (NUREG-0847) Review and Follow-up (92718)

(Closed) Item 390/84-37-04, Installation or Reactor Coolant Vents. The subject item was identified in the Safety Evaluation Report (SER) section 5.4.5 and as License Condition (5). Supplement No. 2 to the SER stated that a license condition regarding the modification of the venting guidelines is not necessary and finds this item acceptable pending verification that the RCS vent system is installed. The inspector verified that the RCS vent system is installed by conducting a walkdown of the system.

10. Independent Inspection Effort (92706)

a. On June 14, 1984, the licensee notified the resident inspectors that a problem occurred in the operation of the Auxiliary Feedwater System (AFWS) during the evening of June 13, 1984. The problem involved running of both 1A-A and 1B-B motor driven AFW pumps with an isolation valve in the suction line for both pumps closed.

The sequence of events leading to the problem is as follows:

(1) The AFWS for Unit 1 was placed under configuration control (double verification valve lineup control) in late May, 1984, per valve check list 3.2-1 of WBN Standard Operating Instruction (SOI) 3.2.

(2) On June 12, 1984, the AFWS flowpath to the Condensate Storage Tank (CST) was isolated in order to add water and chemicals to the CST. The work was completed on the same day.

(3) On June 13, 1984 (at approximately 8:00 p.m.) the valve-lineup for the AFWS flowpath to fill steam generators was checked and reported as being correct. AFW pump 1A-A was started at approximately 8:30 p.m. and AFW pump 1B-B was started at approximately 8:45 p.m. After approximately four minutes of operation AFW Pump 1B-B was stopped due to lack of flow indication and increasing motor current. 1A-A AFW pump was stopped approximately one minute later. A recheck of the valve lineup conducted after the pumps were stopped indicated that an isolation valve (1-FCV-2-504) in the suction header from the CST to the pumps was closed. The

valve was opened and 1A-A AFW pump was started. The pump appeared to operate within its normal parameters. An attempt was made to restart the 1B-B AFW pump; however, the breaker tripped on overcurrent.

The inspectors reviewed the problem and determined the following:

(1) During the initial valve lineup per valve checklist 3.2.1, page 7 of 7, dated May 25, 1984, the valve in the AFW pump suction line that was found closed (Valve 2-504) received independent verification as being locked open.

(2) On June 12, 1984, a clearance (maintenance authorization) was issued to add chemicals to the CST. This clearance was issued per local procedure (Administrative Instruction 2.12); however, although the procedure directed an isolation to be established in which the valve in question was tagged shut, the procedure did not require independent verification when the valve in question was returned to its normal operational (locked open) position. The inspector also reviewed the Administrative Instruction AI 2.19, Independent Verification. AI 2.19 states that "when safety-related equipment is removed from service for maintenance or any other situation which requires that a clearance be established, the tagging procedure for both placing the tags and removing the tags shall require independent verification." This requirement was not accomplished for the valve in question.

Failure to provide adequate procedure guidelines in AI 2.12 to control status of safety-related systems and failure to follow procedure AI 2.19 is a violation (390/84-37-02).

The licensee conducted an investigation of the problem and generated a list of conclusions and recommendations to prevent a reoccurrence.

No additional violations or deviations were identified during this inspection.

b. On June 20, 1984, maintenance activities on the 1B motor driven auxiliary feedwater pump were observed. The work being conducted included replacement of the pump rotor. This work activity was being controlled by Maintenance Instruction (MI) 3.2.1, Removal, Inspection and Replacement of the Motor Driven Auxiliary Feedwater Pump, Rev. 3 dated December 13, 1983.

Step 6.8.6 of MI 3.2.1 requires torquing the bolts that attached the upper half pump casing to the lower half pump casing. This step was properly completed.

There was a "NOTE" following this step stating: "After the casing parting bolts have been fully tightened, the gap at the cutouts in the parting flange gasket should equal approximately .012"." This step was not performed by the mechanics conducting this work per the MI.

The next step 6.8.7, reinstallation of the stuffing box extension, was accomplished by the mechanics. The inspector discussed failure to perform the noted step 6.8.6 with the mechanic. Work was stopped by the mechanics and the inspector's concerns were addressed by engineering. The "NOTE" in step 6.8.6 was performed. The failure to follow procedure MI 3.2.1 is a violation and is identified as 390/84-37-01.

Further review indicated that a previous step (6.8.4) needed to be expanded. This would assure cutouts were available to accomplish the action noted in step 6.8.6. Follow-up on changes to procedure MI 3.1.1 and MI 3.2.1 will be identified as IFI 390/84-37-03.

c. Review of Annunciator Response System Operating Instruction (SOI)

Several SOI's were spot checked to determine their agreement between the window tile and the response instruction. The following was observed:

1) SOI-55-O-M-27B, XA-55-27B-B for window no. 49 indicates that it is a spare, however the window tile indicates O-FS-70-172 Waste Evap Pkg HTX Outlet Flow.

2) SOI-55-O-M-27B, XA-55-27B-B for window no. 48 indicates that it is a spare, however the window tile indicates O-TS-70-171 Waste Evap Pkg HTX Outlet Temp.

3) SOI-55-O-M-27B, XA-55-27B-B for window no. 35 indicates O-FS-70-112 Aux Waste Evap Pkg Outlet Flow

4) SOI-55-O-M-27B, XA-55-27B-B for window no. 36 indicates O-TS-70-113 Aux Waste Evap Pkg Outlet Temp

5) SOI-55-OM-12, XA-55-12A for window no. 16 indicates O-PS-67-462 ERCW Pumps-TRN-A Brg Prelube and Cool Water Press Lo on the window tile, however the SOI indicates 1-RA-90-119B Cond Vac Pump Air Exh Mon Instr Malfunc

6) SOI-55-O-M-12, XA-55-12D for window no. 11 indicates O-RA-90-236A Aux Bldg Vent Post Accident Hi Rad on the window tile, however the SOI indicates 2-RA-90-100A Shield Bldg Vent Mon Hi Rad

7) SOI-55-O-M-27A, XA-55-27A indicates O-FIS-67-209 ERCW to STA AIR Compressor TR A Flow Hi, however it should be Tr B via TR A

The preceding deficiencies were discussed with the licensee and will be identified as inspector follow-up item 390/84-37-05.

d. Status of Additional (5th) Diesel Generator Building (ADGB): Completion status of the project is estimated at 70%. The DG unit has been installed, major piping is nearing completion, and cable trays have been installed, enabling increased cabling installations.

Transfer of the system to Nuclear Power is scheduled for November 16, 1984; however, the final tie in to the transfer switches in the existing DG Complex may not be accomplished until the first Unit 1 outage planned for the spring of 1985. Unit 1 licensing takes priority in Engineering Design (EN DES); so delayed issuance of final drawings on the additional diesel piping, hangers and electrical systems may cause slippage of the transfer schedule.

11. Comparison of As-Built Plant to FSAR Description (37301)

a. Ventilation Systems

On June 5 and 6, 1984, the inspector conducted a walkdown of the Emergency Gas Treatment System (EGTS). The EGTS was inspected for conformance with TVA Drawing 47W866-1, Rev. 24 (Flow Diagram - Heating and Ventilating Air Flow, During the inspection the following discrepancies were noted:

(1) Flow test penetrations are located between FCV-65-28A and FCV-65-28B; and FCV-65-47A and FCV-67-47B instead of upstream of FCV-28A and FCV-47A respectively.

(2) Valve PCV-65-83 has a damaged electrical cable connection.

(3) One operator controls dampers PCO-65-80 and PCO-65-88. One operator controls dampers PCO-65-89 and PCO-65-82. The drawing shows individual operations for each damper.

(4) Review of Emergency Gas Treatment System Schematic Diagram 6.2.3.9 of FSAR has some check valves and dampers reversed on suction line.

On June 12 and June 13, 1984, the inspector conducted a walkdown of accessible portions of the Auxiliary Building Gas Treatment System (ABGTS). The ABGTS was inspected for conformance with TVA drawing 47W866-10, Rev 22 (Flow Diagram - Heating and Ventilating Air Flow). During the inspection the following discrepancy was noted:

Auxiliary building radiation monitor 90-101 flow path isolation valves did not have identification tags.

The preceding deficiencies were discussed with the licensee and will be identified as inspector followup item (IFI) 390/84-37-06.

No violations or deviations were identified in this area.

b. Essential Raw Cooling Water (ERCW) System

Between May 30 and June 15, 1984 the inspectors completed walkdowns of the ERCW system. The system was inspected for conformance with TVA drawings 47W845-1, Rev 22; 47W845-2, Rev 23; 47W845-3, Rev 20; 47W845-4, Rev 17; and 47W845-5, Rev 11 (Mechanical Flow Diagram - Essential Raw Cooling Water System). During the inspection the following discrepancies were noted:

(1) Valve 1-67-539A was leaking at the flange.

(2) Valve 1-67-524A is labelled as 2-67-524A.

(3) Valves 0-67-619B, 621B, 620A and 890A have no identification tags.

(4) 0-TW-67-456 and 459 have no identification tags.

(5) A sandbag dam is erected across the width of the ERCW main discharge header "A" pipe tunnel.

(6) Drain valves 67-772, 774, 776 and 778 are located on the upstream side of their respective 67-1004 valves.

(7) Relief valves 67-573A, B, C, D are actually located upstream of valves 1005A, B, C, D respectively.

(8) Valve 1-67-864B has no handwheel

(9) Electrical cable sleeve not properly installed for 1B CRDM cooler.

(10) TW-67-311, 2-FE-67-357, 2-TW-67-376, 377 have no identification tags.

The preceding deficiencies were discussed with the licensee and will be identified as inspector followup item (IFI) 390/84-37-07.

No violations or deviations were identified in this area.

12. Soil Stabilization Dam Construction (45063)

The senior resident inspectornstruction made five surveillance inspections of the installation of the compacted clay subsurface soil stabilization dam northwest of the intake pumping station. The inspector observed field soil compaction testing. The inspection revealed that, when a sample failed the test, the area layer was removed, reworked and retested until adequate compaction was achieved. The licensee had voluntarily increased testing from the required test for each 10,000 cubic yards compacted to a test for each 2,000 cubic yards. The licensee graded and seal-rolled the final fill each day to minimize rain damage and excess wetting of the fill area.

Nevertheless, recent heavy rains made it necessary for the licensee to dry the top layer of compacted soil. This was accomplished by repeated disc plowing of the soil, followed by testing for water content before fill and compaction operations resumed.

In the areas examined, no violations or deviations were identified.

13. Management Meeting (31702)

The senior construction resident participated in a monthly meeting on-site with TVA management and Licensing Unit personnel on the status of the licensee's corrective actions on open items for Unit 1. Intermittent meetings and telecons were held with Licensing Unit personnel. The principal concern from TVA management has been that corrective actions be taken on those matters which could negatively impact fuel loading, criticality and power ascension of Unit 1.

14. Plant Tours (71302)

The senior construction resident made routine surveillance tours of construction activities and working conditions in both Unit 1 and Unit 2 power block structures. Inspection of specific areas and facilities in these areas were made in connection with verification of adequate corrective action on licensee identified open items and violations or previously unresolved items.

During the tours no violations or deviation were identified.