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

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

Docket Nos.: 50-327 and 50-328 License Nos.: DPR-77 and DPR-79

Facility Name: Sequoyah Units 1 and 2

Inspection Conducted: October 6, 1989 thru November 8, 1989

Lead Inspector: Kenneth M Jenson for Dec 4, 1989
D. P. Loveless, Date Signed
Acting Senior Resident Inspector

Contributing Inspector: P. E. Harmon, Senior Resident Inspector

Accompanying Personnel: L. Zerr, Reactor Engineer

Approved by: Linda J Watson 12/5/89
Linda J. Watson, Chief Date Signed
TVA Projects Section 1
TVA Projects Division
Office of Nuclear Reactor Regulation

SUMMARY

Scope:

This announced inspection involved inspection effort by the Resident Inspectors in the area of operational safety verification including control room observations, operations performance, system lineups, radiation protection, safeguards, and housekeeping inspections. Other areas inspected included maintenance observations, surveillance testing observations, review of previous inspection findings, follow-up of events, review of licensee identified items, and review of inspector follow-up items.

Results:

Management strengths observed during this inspection period included management response to the event described in Violation 327,328/89-25-01, paragraph 3.a, and the presence of plant management in the plant during several plant evolutions and throughout the inspection period.

One event, the failure of both Unit 2 Emergency Diesel Generators, included a failure to promptly classify the event as an NOUE as cited in VIO 327,328/89-25-04. This item is identified as a repeat violation and is associated with several additional items currently being tracked by the NRC.

Additional licensee attention should be directed toward correcting the overall problems with event classification and ENS reporting.

In general, the areas of Operations, Maintenance, HP, Security and Surveillance were adequate and fully capable to support current plant operations.

Three violations were identified.

VIO 327,328/89-25-01, Failure to Follow SI-137.2, Reactor Coolant System Water Inventory, paragraph 3.a.

VIO 327,328/89-25-02, Failure to Inform the SOS of an Out-of-tolerance Analysis for Unit 2 RWST Boron Concentration, paragraph 3.b.

VIO 327,328/89-25-04, Failure to Properly Classify Both Unit 2 EDG's Being Inoperable as a Notification of Unusual Event, paragraph 7.

One unresolved item* was identified.

URI 327,328/89-25-03, Review of TI-11, Chemical Analytical Methods, for the Proper Selection of National Boron Concentration Standards and Recalibration and Restandardization of Mettler Titrators, paragraph 3.b.

No deviations or inspector follow-up items were identified.

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*Unresolved items are matters for which more information is required to determine whether they are acceptable or may involve violations or deviations.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

J. Bynum, Vice President, Nuclear Power Production
*J. LaPoint, Site Director
*C. Vondra, Plant Manager
T. Arney, Quality Control Manager
*R. Beecken, Maintenance Manager
L. Bush, Acting Maintenance Manager
*M. Burzynski, Site Licensing Manager
*M. Cooper, Compliance Licensing Manager
D. Craven, Superintendent Instrumentation and Control
*S. Crowe, Site Quality Manager
J. Gates, Technical Support Manager
J. Holland, Corrective Action Program Manager
W. Lagergren, Jr., Operations Manager
M. Lorek, Operations Manager
R. Pierce, Mechanical Maintenance Group Supervisor
R. Rogers, Supervisor Engineering Support Section
M. Sullivan, Radiological Controls Manager
S. Spencer, Licensing Engineer
C. Whittemore, Licensing Engineer

NRC Employees

*B. A. Wilson, Assistant Director, TVA Projects
*L. J. Watson, Chief, Project Section 1
*K. M. Jenison, Senior Resident Inspector

*Attended exit interview

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

2. Operational Safety Verification (71707)

a. Control Room Observations

The inspectors conducted discussions with control room operators, verified that proper control room staffing was maintained, verified that access to the control room was properly controlled, and that operator behavior was commensurate with the plant configuration and plant activities in progress, and with on-going control room operations. In general, the operators were observed adhering to appropriate, approved procedures, for the on-going activities. Exceptions are discussed in paragraphs 3.a and 3.b. Additionally, the frequency of visits to the control room by upper management was observed for adequacy.

The inspector also verified that the licensee was operating the plant in a normal plant configuration as required by TS and when abnormal conditions existed, that the operators were complying with the appropriate LCO action statements.

The inspectors observed instrumentation and recorder traces for abnormalities and verified the status of selected control room annunciators to ensure that control room operators understood the status of the plant. Panel indications were reviewed for the nuclear instruments, the emergency power sources, the safety parameter display system and the radiation monitors to ensure operability and operation within TS limits. Data from Trend Recorder 2-UDR-760, which trends VCT and pressurizer levels was examined in detail.

No violations or deviations were observed.

b. Control Room Logs

The inspectors observed control room operations and reviewed applicable logs including the shift logs, operating orders, night order book, clearance hold order book, and the configuration log to obtain information concerning operating trends and activities. The TACF log was reviewed to verify that the use of jumpers and lifted leads causing equipment to be inoperable was clearly noted and understood. The licensee is actively pursuing correction to conditions requiring TACFs. No issues were identified with these specific logs.

Plant chemistry reports were reviewed to confirm steam generator tube integrity in the secondary and to verify that primary plant chemistry was within TS limits.

In addition, the implementation of the licensee's sampling program was observed. Plant specific monitoring systems including seismic, meteorological and fire detection indications were reviewed for operability. A review of surveillance records and tagout logs was performed to confirm the operability of the reactor protection system.

No violations or deviations were observed.

c. ECCS System Alignment

The inspectors performed a walkdown of the following equipment on Unit 2:

- Safety Injection pumps
- High Head Injection Pumps
- Boron Injection Tank

- Residual Heat Removal System

- Upper Head Injection System

- Cold Leg Accumulators

In addition, the inspectors verified that a selected portion of the containment isolation lineup was correct.

No deviations or violations were identified.

d. Plant Tours

Tours of the diesel generator, auxiliary, control, and turbine buildings, and exterior areas were conducted to observe plant equipment conditions, potential fire hazards, control of ignition sources, fluid leaks, excessive vibrations, missile hazards and plant housekeeping and cleanliness conditions. The plant was observed to be clean and in adequate condition. The inspectors verified that maintenance work orders had been submitted as required and that follow up activities and prioritization of work was accomplished by the licensee.
Examples of control room WR's reviewed were:

B792967 - 1-LI-62-242, Boric Acid Tank Level Indication, is Drifting.

B263070 - Repair Unit 2 Upper Compartment Heaters 2B, 2C & 2D.

The inspector visually inspected the major components for leakage, proper lubrication, cooling water supply, and any general condition that might prevent fulfilling their functional requirements. The following housekeeping items in the auxiliary building were notable and were discussed with the licensee:

- Air handling unit cooling water leaks in five of the six charging pump rooms required temporary routing of drains through hoses throughout the 669' elevation. This caused the breaching of seven fire doors. The licensee indicated during the exit that actions were being taken to correct these leaks. Additionally, raw river water (ERCW) was observed to be dripping on the 1B-B CCP.

- The Unit 2 UHI water tank had multiple large strings of boron deposits running down the side of the tank.

- Several large pieces of equipment (i.e. welding power supplies, industrial buckets and floor polishers) were not tied down for seismic purposes.

- A dirty sight glass has prevented the determination of the level of oil in the gear box of the 2B-B CCP since June 21, 1989 as evidenced by WR B265380.

The inspector observed shift turnovers and determined that necessary information concerning the status of plant systems was addressed.

No violations or deviations were observed.

e. Radiation Protection

The inspectors observed HP practices and verified the implementation of radiation protection controls. On a regular basis, RWP's were reviewed and specific work activities were monitored to ensure the activities were being conducted in accordance with the applicable RWP's. Workers were observed for proper frisking upon exiting contaminated areas and the radiologically controlled area. Selected radiation protection instruments were verified operable and calibration frequencies were reviewed. The following RWP was reviewed in detail:

RWP 89-01-188, Unit 1, UHI, LLRT on 1-FCV-87-7 and 1-FCV-87-8.
No violations or deviations were identified.

f. Safeguards Inspection

In the course of the monthly activities, the inspectors included a review of the licensee's physical security program. The performance of various shifts of the security force was observed during the conduct of daily activities including: protected and vital area access controls; searching of personnel and packages; escorting of visitors; badge issuance and retrieval; and patrols and compensatory posts.

In addition, the inspectors observed protected area lighting, and protected and vital areas barrier integrity. The inspectors verified interfaces between the security organization and both operations and maintenance. Specifically, the Resident Inspectors:

(1) interviewed individuals with security concerns
(2) visited central and secondary alarm stations
(3) verified protection of Safeguards Information
(4) verified onsite/offsite communication capabilities

No violations or deviations were identified.

g. Conditions Adverse to Quality

The inspectors reviewed selected items to determine that the licensee's problem identification system as defined in AI-12, Corrective Action, was functioning. CAQR's were routinely reviewed

for adequacy in addressing a problem or event. Additionally a sample of the following documents was reviewed for adequate handing:

(1) Work Requests
(2) Potential Reportable Occurrences
(3) Problem Reporting Documents
(4) Correct-on-the-Spot Documents
(5) Licensee Event Reports

Of the items reviewed, each was found to have been identified by the licensee with immediate corrective action in place. For those issues that required long term corrective action the licensee was making adequate progress.

No violations or deviations were observed.

No trends were identified in the operational safety verification area. The lower number of control room maintenance and modification items shows a marked improvement over previous months.

Radiation protection and security are adequate to continue two unit operations.

3. Surveillance Observations and Review (61726)

Licensee activities were directly observed/reviewed to ascertain that surveillance of safety-related systems and components was being conducted in accordance with TS requirements.

The inspectors verified that: testing was performed in accordance with adequate procedures; test instrumentation was calibrated; LCOs were met; test results met acceptance criteria and were reviewed by personnel other than the individual directing the test; deficiencies were identified, as appropriate, and any deficiencies identified during the testing were properly reviewed and resolved by management personnel; and system restoration was adequate. For completed tests, the inspector verified that testing frequencies were met and tests were performed by qualified individuals.

The following activities were observed/reviewed with no deficiencies identified except as noted:

a. SI-137.2, Reactor Coolant System Water Inventory.

At approximately 10:00 a.m. on October 18, 1989, the Resident Inspector reviewed the completed performance of SI-137.2. The Unit 2 Operators (UOs) and Assistant Shift Operations Supervisor (ASOS) stated that it had been completed at 7:26 a.m., on October 18, 1989.

The UO stated that the package was complete and acceptance criteria were met. The inspector reviewed the package and noted that there

was a negative unidentified leakrate calculated and only two hours of data were collected. To meet the acceptance criteria of SI-137.2 for negative leakage, at least three hours of data have to be taken.

The inspector discussed the procedure with the ASOS, who stated that he had not reviewed the package and was not familiar with the ICF to the procedure. The ASOS then reviewed the ICF and agreed that the procedure required the taking of additional data. The Unit 2 ASOS immediately initiated a new SI-137.2 to meet the requirements of the original procedure.

TS 6.8.1 states that, written procedures shall be established, implemented and maintained covering surveillance and test activities of safety-related equipment.

SI-137.2, ICF 89-0758 section 4.9 and the associated flow chart, requires that if unidentified leakage calculates to be negative, then the calculations will be reperformed using a minimum of one hour of additional data. On October 18, 1989, the Unit 2 operators completed the performance of SI-137.2 at 7:26 a.m and determined that the unidentified leak rate was negative. However, they did not take additional data as required by section 4.9 in ICF 89-0758. This is a violation of TS 6.8.1 and is identified as VIO 327,328/89-25-01.

The inspector noted that the surveillance package had not completed the QA and management review cycle. However the operators should have realized that the results were outside of the acceptance criteria and that additional testing was required. Additional QA or management review would not have been able to improve the quality or acceptability of these inadequate test results, because the testing processes had been completed and system alignments changed.

b. SI-51, Weekly Chemistry Requirements.

At 2:00 a.m. on October 20, 1989 the licensee sampled the Unit 2 RWST for the weekly performance of SI-51, Weekly Chemistry Requirements. This SI provides for the verification of the RWST boron concentration per TS Surveillance Requirements 4.1.2.5.a.1, 4.1.2.6.a.1 and 4.5.5.a.2. The procedure requires that a boron sample be taken per TI-37, Radiochemical Laboratory Sampling and Logsheets, and analyzed per TI-11, Chemical Analytical Methods, and that the results be recorded on SI-51, Data Sheet 1.0. This data sheet states that the RWST boron concentration acceptance criteria for modes 1-4 is 2000-2100 ppm boron and directs the performer to "immediately notify the SOS/SRO" should the data be outside this acceptance criteria.

TI-37, Radiochemical Laboratory Sampling and Logsheets, provides the sampling and data taking method for the RWST in Appendix A, Log sheet #39. This logsheet indicates that if the RWST boron concentration is less than 2000 or greater than 2100, log sheet #39 action IV should be performed. Action IV requires corrective actions as specified in

the TS or NPDES permit. Appropriate actions are identified in the affected SIs or TI-37 logsheets.

Additionally, TI-37, page 11, Nonradiological Program Flow Chart, shows that if the acceptance criteria are not met that the technicians should resample to confirm the out-of-acceptance criteria condition. If the resample results do not meet the acceptance criteria, the flow chart requires that the actions required in the SI be performed, i.e, to notify the SOS/SRO.

At 6:30 a.m. on October 20, 1989, the 2:00 a.m. sample was analyzed. The analysis indicated a boron concentration of 1952 ppm Boron. A second analysis was performed and the boron concentration was determined to be 1971 ppm Boron. At this time the 100 and 3000 ppm Boron standards were checked for the Titrator and determined to be within specifications.

At 7:30 a.m. a second sample was taken from the Unit 2 RWST. At 8:15 a.m. the boron concentration of this sample was determined to be 1971 ppm Boron. Following this analysis the secondary chemistry manager questioned the validity of the results based on the wide range between the 100 and 3000 ppm standards. He ordered that a 1000 ppm Boron standard be tested.

At 8:19 a.m. the daytime chemistry Shift Supervisor called the SOS and informed him that there was a problem with the Unit 2 RWST boron analysis and that the analysis would be reverified. The TVA final Event Report (number II-89-076, RWST 2 Boron Analysis), states that the SOS was not aware that these results were based on a second sample being out of specification and he would have required entry into LCO 3.5.5, if he had been aware of it.

The inspector noted that at this time two samples had been taken and analyzed as outside of TS limits. Additionally, the standards in use at the time were determined to be within acceptable tolerances for the Mettler Titration and acceptable for use under the approved procedures. No additional technical information or analyzed data had been considered during the sampling process and the evaluation of the two initial samples.

TS 6.8.1 states that, written procedures shall be implemented covering surveillance and test activities of safety-related equipment. On October 20, 1989, by 8:15 a.m., the licensee drew 2 samples from the Unit 2 RWST and determined the Boron concentration to be below 2000 ppm and did not inform the SOS of this fact as required by TI-37 and SI-51. This is a violation of TS 6.8.1 and will be identified as VIO 327,328/89-25-02.

At approximately 8:45 a.m. the licensee analyzed a 1000 ppm Boron standard and determined it to be 956 ppm, which is below the 1% control limit. By 10:00 a.m. the licensee had performed a full

recalibration of both Boron titrators; prepared new pH buffers; and, restandardized the NaOH titrant. Both the 1000 ppm and the 3000 ppm Boron standards were analyzed to be within specification on the high side.

At 10:25 a.m. the 2:00 a.m. sample was reanalyzed by the licensee and determined to be 2048 ppm boron on titrator #83 and 2025 ppm boron on titrator #82.

The use of the 1000 ppm versus 100 ppm boron standard per TI-11, Chemical Analytical Methods, the proper techniques in recalibration and restandardization of Mettler Titrators and proper laboratory procedures will be reviewed by the Region II chemistry inspectors at a later date. This item will be tracked as URI 327,328/89-25-03.

c. Diesel Generator 1A-A Outage Surveillances

The inspector observed the following surveillances:

SI-7, Electrical Power System: Diesel Generators - Unit 0.

SI-7.3, Diesel Generator 1A-A Fuel Oil Transfer Pump Performance Test - Unit 0.

SI-102, E/M, Diesel Generator Monthly Electrical Inspection, - Units 1 and 2.

SI-166.36.1, Diesel Starting Air Valve Test for EDG Set 1A-A, Time Frame A.

No issues were identified.

No trends were identified in the area of surveillance performance during this inspection period. The area of surveillance scheduling and management was observed to be adequate. The management of the TS SI program appears to have progressed from a reactive type process to a routinely scheduled, adequately managed plant operation support activity.

4. Monthly Maintenance Observations and Review (62703)

a. Station maintenance activities on safety-related systems and components were observed/reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides, industry codes and standards, and in conformance with TS.

The following items were considered during this review: LCOs were met while components or systems were removed from service; redundant components were operable; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; procedures used were adequate to control the activity; troubleshooting activities were controlled and the repair records accurately reflected the activities; functional

testing and/or calibrations were performed prior to returning components or systems to service; QC records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; radiological controls were implemented; QC hold points were established where required and were observed; fire prevention controls were implemented; outside contractor force activities were controlled in accordance with the approved QA program; and housekeeping was actively pursued.

b. WR B758347, Temperature Deviation Between Loop 3 Tavg and Other Channels.

The inspector observed troubleshooting activities in progress under WR B758347. The Tavg/Auct Tavg deviation annunciator on panel XA55-5A window 6 had alarmed, and checks of redundant instrumentation showed no problem. During the performance of IMI-99 CC 11.52B, Online/Offline Channel Calibration of Delta T/Tavg Channel I, Rack 2, (T-68-2), all four loop Tavg control room indicators were lost and the pressurizer backup heaters energized. This occurred while the technicians were performing step 5.7.1.4, which directed them to unplug temperature monitor TM68-67P (TY442C) AC power cable in R13. Review of the prints showed that each of the previous three steps unplugged the power cables for separate Tavg indicators. It was assumed that the operators simply failed to notice the loss of indication on the first three channels. Following the loss of the fourth indicator the operators immediately de-energized the heaters and directed the technicians to back out of the procedure.

The planner of the job had utilized procedures which had not previously been performed in Mode 1. The procedures did not adequately address the condition of the plant in this mode. The procedure stated that the auctioneered delta T/Tavg components can be removed from service in any mode. However, it did not advise the performer nor the operator of the loss of control room indication. This loss affected the programmed pressurizer level and subsequently energized the pressurizer backup heaters.

TVA is in the process of improving a substantial portion of their procedures. The current phase of this program is addressing problems of low safety significance. Maintenance Instruction (MI)-21.2.068.02, Revision 0, Channel Calibration of Auctioneered Tavg Instruments, addresses the loss of Tavg indication and the effect on pressurizer heaters, but had not yet been implemented for Unit 2. The procedure is waiting craft review. The revision will correct this particular problem.

The inspector determined that the procedure was technically adequate for the performance of the calibration, but was deficient in that it did not inform the operator of the effects on control room instrumentation and equipment. There was no safety significance to the event. No transient occurred, and the loss of indication is part

of the proper performance of this procedure. The inspector had no further questions.

c. The following work requests were observed in progress and/or reviewed with no problems identified:

B 758146, Troubleshoot 2A-A EDG to Determine the Cause of the Blown Fuse Alarm.

B 775730, Repair EGTS Filter Housing Doors, and Test in Accordance with SI-142.

B 265380, Replace or Clean the Gear Drive Oil Level Gauge.

B 263070, Repair Upper Compartment Heaters 2B, 2C & 2D.

B 792967, 1-LI-62-242, Boric Acid Tank C Level Indicator, is Drifting.

d. Temporary Alterations

The following TACF was reviewed:

2-84-2039-3: Remove the Hand Indicating Controllers on the Bypass Feedwater Regulating Valves and Replace with Level Indicating Controllers.

No problems were identified.

e. Hold Orders

The inspectors reviewed the following HO to verify compliance with AI-3, revision 38, Clearance Procedure, and to ascertain that the HOs contained adequate information to properly isolate the affected portions of the system being tagged. Additionally the inspectors inspected the affected equipment to verify that the required tags were installed on the equipment as stated on the HO.

2-89-032 Upper Compartment Heaters 2B, 2C & 2D.

No violations or deviations were identified in the area of Maintenance. No trends were noted in the area of maintenance, and the program is adequate to support two unit operations.

5. Management Activities in Support of Plant Operations

TVA management activities were reviewed on a daily basis by the NRC inspectors. Resident Inspectors observed that planning, scheduling, work control and other management meetings were effective in controlling plant activities. First line supervisors appear to be knowledgeable and

involved in the day to day activities of the plant. First line supervisor involvement in the field has been observed and, with the exception of the RWST boron concentration surveillance activity described in paragraph 3.b above, appeared to be adequate. Management response to those plant activities and events that occurred during this inspection period appeared timely and effective. Examples of this management action were:

- The Management response to the finding that operators failed to follow SI-137.2 appeared to be timely and effective. The surveillance was repeated in a timely manner and the Plant Manager directed a root cause analysis be performed to evaluate the situation.

- The Site Director was observed in the control room during a power reduction on Unit 2. Additionally, the new Plant Manager was observed in the plant numerous times.

6. Engineered Safety Feature System Walkdown (71710)

The inspector performed a detailed walkdown of the accessible portions of the Unit 2 UHI system. The following documents were reviewed:

- Drawing CCD 1,2-47W811-2, revision 5

- SOI 87.1, Upper Head Injection Accumulators

As a result of the inspection the inspectors noted that there were large runs of boric acid crystals on the side of the water tank. This was previously addressed in paragraph 3.d.

No violations or deviations were identified.

7. Event Follow-up (93702)

On October 25, 1989, at 4:57 a.m., the 1B-B 6.9 KV emergency diesel generator (EDG) was declared inoperable and Limiting Condition for Operation (LCO) 3.8.1.1, action a, was entered when the EDG was removed from service to perform routine maintenance activities. At 5:48 p.m. on October 25, 1989, control room operations personnel were alerted to a problem with the 2A-A EDG by the blown fuse annunciator alarming. Action d of LCO 3.8.1.1 and the action of 3.0.5 (note: Auxiliary Feedwater Pump 2B-B was already inoperable for surveillance testing) were immediately entered, and attention was directed to returning EDG 1B-B to operation. Action d of LCO 3.8.1.1 requires the licensee to verify offsite power operability within one hour and to restore either both A or both B train EDG's to operable status within two hours or place the reactor in hot standby within the next six hours. SI-7.1 was completed by operations within the required one hour at 6:08 p.m. to ensure offsite power availability as required by the LCO action. At 5:54 p.m., LCO 3.0.5 was exited when the 2B-B Auxiliary Feedwater Pump was declared operable. At 10:53 p.m., the 1B-B EDG was restored to operable status after SI-7 was

completed, thereby allowing action d of LCO 3.8.1.1 to be exited while remaining in action a for the inoperability of the 2A-A EDG.

Work Request (WR) B758146 had been initiated and efforts were underway to troubleshoot EDG 2A-A to determine the cause of the blown fuse. It was determined that the cause of the blown fuse was that diodes internal to a motor-operated potentiometer (MOP) had shorted causing a short circuit between the positive and negative buses of the 125 VDC control power. The MOP provides a variable resistance connected to the voltage regulator and serves as a method to control EDG output voltage. By adjusting the MOP, the EDG output voltage can be matched to the grid, thereby allowing the EDG to be synchronized to the grid and loaded for monthly functional testing. The MOP serves no function when the EDG is operated in the isochronous mode as it would be during emergency conditions.

A replacement MOP was obtained from TVA Power Stores and installed exactly like the one removed. However, during functional testing of the new MOP, it was discovered that the EDG output voltage responded opposite to that of design requirements (e.g., placing the handswitch in a position to raise EDG output voltage actually caused the voltage to be lowered). The wiring terminated on the new MOP was confirmed to be correct. Subsequently, another MOP was obtained from Power Stores. After comparing the old MOP with the new one, it became obvious that the wires to Terminals 5 and 7 had been swapped on the old MOP.

At 4:10 a.m. on October 26, 1989, during the performance of SI-7.1 per LCO 3.8.1.1.a, the 2B-B EDG became inoperable when a fuse that supplies power to numerous control functions opened. At this time, both the 2A-A and the 2B-B emergency diesel generator sets were inoperable. The fuse blew when an Assistant Unit Operator (AUO) was replacing the indicating lamp for "POWER ON" which apparently created a short circuit. LCO 3.8.1.1, action d, was immediately entered when the 2B-B EDG was declared inoperable. After replacing the blown fuse, SI-7.1 was successfully completed for EDG 2B-B, the EDG was declared operable, and action d of the LCO was exited at 5:22 a.m. while remaining in action a.

At 6:15 a.m. on October 26, 1989, the REP was entered when it was discovered that an NOUE was required when both EDG sets on either unit are inoperable according to Emergency Plan Implementing Procedure EPIP-1. Notifications to the NRC were made at 6:45 a.m. on October 26, 1989.

Technical Specification 6.8.1.e states that written procedures shall be established, implemented and maintained covering site Radiological Emergency Plan (REP) implementation.

EPIP-1, Emergency Plan Classification Logic, implements these requirements, and requires that, the NP Radiological Emergency Plan (REP) will be activated when any one of the conditions listed in its logic is detected. The SOS is responsible for declaring the emergency and providing the initial activation. The logic of EPIP-1 states that both unit-related emergency diesel generators (EDGs) inoperable simultaneously by

unscheduled outage or failure as determined by the shift engineer is a Notification of Unusual Event.

At 4:10 a.m. on October 26, 1989 the 2B-B EDG became inoperable while the 2A-A EDG was also inoperable, and the SOS did not declare an NOUE nor provide for initial activiation for over two hours. This violation is similiar to VIO 327,328/88-33-01, and will be identified as VIO 327,328/89-25-04.

As a result of the above inspection activity, the inspector reviewed several open items involving failure to appropriately classify and report events at Sequoyah. These items were:

VIO 327,328/88-33-01, Failure to Implement the REP in a Timely Manner Because of Doubt of the Validity of Seismic Alarms.

IFI 327,328/88-57-01, Failure of the Shift Operating Supervisor to Recognize Explosion as an Entry into the Emergency Classification Logic.

IFI 327,328/88-57-02, Event Notification Sheet Not Used for NRC Notification in Accordance with AI-18.

IFI 327,328/89-19-06, Inaccurate ENS Report on the Source Range High Flux Level Reactor Trip.

IFI 327,328/89-21-03, Failure to Make an Adequate ENS Telephone Report on the NOUE Entered by Having All Four EDG's Technically Inoperable.

The licensee is requested to discuss corrective actions for the above items in the response to VIO 327,328/89-25-04. The above listed items are administratively closed and corrective actions will be reviewed under closure of the violation.

8. NRC Inspector Follow-up Items, Unresolved Items, Violations (92701, 92702)

(Closed) Violation 327,328/87-68-03, Corrections to Quality Assurance (QA) Records.

This violation identified that contrary to the requirements specified in NEP 1.3, Revision 0, Records Control, corrections to QA records were not properly made by drawing one line through the incorrect information, the correct information entered and the entry initialed and dated.

The licensee indicated compliance with this violation would be achieved by July 18, 1988 by issuing a directive to Division of Nuclear Engineering branches and projects to emphasize the importance of procedure compliance in this area.

The inspector reviewed 72 Quality Assurance records which were generated during the 1989 time frame which included documents in RIMS and hard copies from Sequoyah, Browns Ferry, Watts Bar and Knoxville engineering. The records were found to be of good quality (with minor exceptions) and in compliance with the licensee's procedure NEP 1.3. The inspector noted that corrections made to these documents were made with black ink, single lined thru the incorrect information, and correct information was entered and the entries were initialed and dated. Based on the above the violation is closed.

(Closed) VIO 327,328/88-33-01, Failure to Implement the REP in a Timely Manner Because of Doubt of the Validity of Seismic Alarms.

See paragraph 7 for details of closure.

(Closed) IFI 327,328/88-57-01, Failure of the Shift Operating Supervisor to Recognize Explosion as an Entry into the Emergency Classification Logic.

See paragraph 7 for details of closure.

(Closed) IFI 327,328/88-57-02, Event Notification Sheet Not Used for NRC Notification in Accordance with AI-18.

See paragraph 7 for details of closure.

(Closed) IFI 327,328/89-19-06, Inaccurate ENS Report on the Source Range High Flux Level Reactor Trip.

See paragraph 7 for details of closure.

(Closed) IFI 327,328/89-21-03, Failure to Make an Adequate ENS Telephone Report on the NOUE Entered by Having All Four EDG's Technically Inoperable.

See paragraph 7 for details of closure.

9. Other Technical Issues

a. The inspector reviewed WP 6406, used to pull instrumentation cables into the control room for instrumentation for the power distribution system. Approval for the fire barrier breach was provided by the fire protection staff.

b. The inspector toured the auxiliary building during tests of the plant alarm system and determined that the alarms were audible throughout the building.

10. Exit Interview (30703)

The inspection scope and findings were summarized on October 8, 1989, with those persons indicated in paragraph 1. The Acting Senior Resident

Inspector described the areas inspected and discussed in detail the inspection findings listed below. The licensee acknowledged the inspection findings and did not identify as proprietary any of the material reviewed by the inspectors during the inspection.

Inspection Findings:

Three violations were identified:

VIO 327,328/89-25-01, Failure to Follow SI-137.2, Reactor Coolant System Water Inventory. (Paragraph 3.a)

VIO 327,328/89-25-02, Failure to Inform the SOS of an Out-of-tolerance Analysis for Unit 2 RWST Boron Concentration. (Paragraph 3.b)

VIO 327,328/89-25-04, Failure to Properly Classify Both Unit 2 EDG's Being Inoperable as a Notification of Unusual Event. This is a repeat violation. (Paragraph 7)

One unresolved item was identified.:

URI 327,328/89-25-03, Review of TI-11, Chemical Analytical Methods, for the Proper Selection of National Boron Concentration Standards and Recalibration and Restandardization of Mettler Titrators. (Paragraph 3.b)

The inspectors discussed the need for the licensee to correct the entire problem with event classification and ENS notification as evidenced by VIO 327,328/89-25-04 above, and the additional associated items listed in paragraph 7 of this report.

During the reporting period, frequent discussions were held with the Site Director, Plant Manager and other managers concerning inspection findings.

11. List of Acronyms and Initialisms

ABGTS - Auxiliary Building Gas Treatment System
ABI - Auxiliary Building Isolation
ABSCE - Auxiliary Building Secondary Containment Enclosure
AFW - Auxiliary Feedwater
AI - Administrative Instruction
AOI - Abnormal Operating Instruction
AUO - Auxiliary Unit Operator
ASOS - Assistant Shift Operating Supervisor
ASTM - American Society of Testing and Materials
BIT - Boron Injection Tank
BFN - Browns Ferry Nuclear Plant
C&A - Control and Auxiliary Buildings
CAQR - Conditions Adverse to Quality Report

CCS - Component Cooling Water System
CCP - Centrifugal Charging Pump
CCTS - Corporate Commitment Tracking System
CFR - Code of Federal Regulations
COPS - Cold Overpressure Protection System
CS - Containment Spray
CSSC - Critical Structures, Systems and Components
CVCS - Chemical and Volume Control System
CVI - Containment Ventilation Isolation
DC - Direct Current
DCN - Design Change Notice
DG - Diesel Generator
DNE - Division of Nuclear Engineering
ECN - Engineering Change Notice
ECCS - Emergency Core Cooling System
EDG - Emergency Diesel Generator
EI - Emergency Instructions
ENS - Emergency Notification System
EOP - Emergency Operating Procedure
EO - Emergency Operating Instruction
ERCW - Essential Raw Cooling Water
ESF - Engineered Safety Feature
FCV - Flow Control Valve
FSAR - Final Safety Analysis Report
GDC - General Design Criteria
GOI - General Operating Instruction
GL - Generic Letter
HVAC - Heating Ventilation and Air Conditioning
HIC - Hand-operated Indicating Controller
HO - Hold Order
HP - Health Physics
ICF - Instruction Change Form
IDI - Independent Design Inspection
IN - NRC Information Notice
IFI - Inspector Followup Item
IM - Instrument Maintenance
IMI - Instrument Maintenance Instruction
IR - Inspection Report
KVA - Kilovolt-Amp
KW - Kilowatt
KV - Kilovolt
LER - Licensee Event Report
LCO - Limiting Condition for Operation
LIV - Licensee Identified Violation
LLRT - Local Leak Rate Test
LOCA - Loss of Coolant Accident
MCR - Main Control Room
MI - Maintenance Instruction
MR - Maintenance Report

MSIV - Main Steam Isolation Valve
NB - NRC Bulletin
NOV - Notice of Violation
NQAM - Nuclear Quality Assurance Manual
NRC - Nuclear Regulatory Commission
OSLA - Operations Section Letter - Administrative
OSLT - Operations Section Letter - Training
OSP - Office of Special Projects
PLS - Precautions, Limitations, and Setpoints
PM - Preventive Maintenance
PPM - Parts Per Million
PMT - Post Modification Test
PORC - Plant Operations Review Committee
PORS - Plant Operation Review Staff
PRD - Problem Reporting Document
PRO - Potentially Reportable Occurrence
QA - Quality Assurance
QC - Quality Control
RCA - Radiation Control Area
RCDT - Reactor Coolant Drain Tank
RCP - Reactor Coolant Pump
RCS - Reactor Coolant System
REP - Radiological Emergency Plan
RG - Regulatory Guide
RHR - Residual Heat Removal
RM - Radiation Monitor
RO - Reactor Operator
RPI - Rod Position Indication
RPM - Revolutions Per Minute
RTD - Resistivity Temperature Device Detector
RWP - Radiation Work Permit
RWST - Refueling Water Storage Tank
SER - Safety Evaluation Report
SG - Steam Generator
SI - Surveillance Instruction
SMI - Special Maintenance Instruction
SOI - System Operating Instructions
SOS - Shift Operating Supervisor
SQM - Sequoyah Standard Practice Maintenance
SQRT - Seismic Qualification Review Team
SR - Surveillance Requirements
SRO - Senior Reactor Operator
SSOMI - Safety Systems Outage Modification Inspection
SSQE - Safety System Quality Evaluation
SSPS - Solid State Protection System
STA - Shift Technical Advisor
STI - Special Test Instruction
TACF - Temporary Alteration Control Form
Tavg - Average Reactor Coolant Temperature
TDAFW - Turbine Driven Auxiliary Feedwater

TI - Technical Instruction
TREF - Reference Temperature
TROI - Tracking Open Items
TS - Technical Specifications
TVA - Tennessee Valley Authority
UHI - Upper Head Injection
UO - Unit Operator
URI - Unresolved Item
USQD - Unreviewed Safety Question Determination
VDC - Volts Direct Current
VAC - Volts Alternating Current
WCG - Work Control Group
WP - Work Plan
WR - Work Request