

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-327, 50-328
License Nos: DPR-77, DPR-79

Report Nos: 50-327/96-11, 50-328/96-11

Licensee: Tennessee Valley Authority

Facility: Sequoyah Nuclear Plant, Units 1 & 2

Location: Sequoyah Access Road
Hamilton County, TN 37379

Dates: September 15 through October 26, 1996

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E8.7)
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Division of Reactor Projects

Enclosure 2

EXECUTIVE SUMMARY

Sequoyah Nuclear Plant, Units 1 & 2
NRC Inspection Report 50-327/96-11, 50-328/96-11

This integrated inspection included aspects of licensee operations, maintenance, engineering, plant support, and effectiveness of licensee controls in identifying, resolving, and preventing problems. The report covers a six-week period of resident inspection. In addition, it includes the results of an announced inspection by an engineering inspector.

Operations

- Operations management initiated a positive program to discuss, during shift turnovers, recent configuration control issues in an effort to reduce the number of configuration control problems (Section 01.1).
- A non-cited violation (NCV) was identified for failure to use a procedure when performing a main control room switch manipulation (Section 01.2).
- Operators were not aware that a radiation monitor with "low counts" would not perform its designed Auxiliary Building Isolation (ABI) function (Section 02.1).

Maintenance

- A weakness was identified in the licensee's corrective action program for closing a problem report on previously identified AFW bearing oil problems without substantial evaluation (Section M2.1).
- A positive observation was noted when Nuclear Assurance identified four previous Problem Evaluation Reports (PER) related to Auxiliary Feedwater (AFW) bearing oil problems (Section M2.1).
- A weakness was identified regarding the licensee's switchyard preventive maintenance program (Section M2.2).
- A violation was identified for failure to install a temporary missile shield during excavation in the area of Essential Raw Cooling Water (ERCW) underground piping (Section M2.3).

Engineering

- A violation was identified in that the DG starting air system relief valves were set above the design condition limit (Section E2.1).
- An NCV was identified for failure to incorporate procedural guidance when an Abnormal Operating Instruction (AOI) was upgraded to an Abnormal Operating Procedure (AOP) (Section E8.4).

Plant Support

- The licensee conducted a challenging Radiological Emergency Plan (REP) drill scenario in preparation for the November 6, 1996, graded REP exercise. During the drill critique, the licensee was quick to identify drill deficiencies and ways to make improvements in the REP program (Section P1.1).
- The emergency program was observed to be well managed and receiving management support. Effective corrective actions taken to previous open items permitted the closure of two violations and two IFIs. (Section P1.2)

Report Details

Summary of Plant Status

Unit 1 began the inspection period in power operation. The unit operated at power for the duration of the inspection period.

Unit 2 began the inspection period in power operation. On October 11, the unit began a controlled shutdown from 100% power because of a suspected failure of a reactor coolant pump seal and later that day operators manually tripped the unit due to equipment problems and entered Mode 3. (See Inspection Report 50-327,328/96-13). The unit entered Mode 5 and commenced a forced outage to replace two reactor coolant pump seal packages and one reactor coolant pump motor. On October 24, 1996, when the repairs to the reactor coolant pumps had been completed, the unit entered Mode 4. When the report period ended, the unit was in Mode 4 awaiting completion of repairs to the motor driven auxiliary feedwater pumps.

I. Operations

01 Conduct of Operations

01.1 General Comments (71707)

Using Inspection Procedure 71707, the inspectors conducted frequent reviews of ongoing plant operations. In general, the conduct of operations was good. Particularly noteworthy were the thoroughness and professionalism of operations shift turnover briefings. Operations has begun discussing, during shift turnover briefings, recent instances of configuration control problems. This is considered a positive initiative by operations management to increase operator awareness of such issues in an effort to reduce the number of configuration control problems. Additional operational events and observations are detailed in the sections below.

01.2 Inappropriate Operator Action

On September 24, 1996, a licensed operator assigned to Unit 1 repositioned a Unit 2 Emergency Gas Treatment System (EGTS) Fan A suction damper control switch from the "A-Auto" position to the "Close" position and immediately returned the switch to "A-Auto." The damper was in the closed position both before and after the switch operation and no damper movement actually occurred. The operator performed this switch movement to verify the switch spring-return-to-auto feature of the switch. However, the operator did not request the unit supervisor's permission prior to the test nor did he use Procedure 0-SO-65-1, Emergency Gas Treatment System Air Cleanup and Annulus Vacuum, Revision 0, which gives direction on system alignment and operation.

Operations management took appropriate disciplinary action and stressed to all operators that unapproved testing activities do not meet management expectations. The inspectors concluded that no realignment of the EGTS occurred because of the unauthorized switch test and that operations management took immediate actions to emphasize to operators their expectations regarding such activities.

The failure to implement the EGTS system operating procedure when operating the EGTS system is considered a violation of TS 6.8.1.a. This licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1 of the NRC Enforcement Policy (NCV 50-327, 328/96-11-01).

02 Operational Status of Facilities and Equipment

02.1 Radiation Monitor Inoperable Due to Low Counts

a. Inspection Scope (71707)

The inspectors reviewed the deficiency related to "low counts" associated with radiation monitor 0-RM-90-101C, Auxiliary Building Vent Monitor-Iodine, and the operability requirements for the monitor.

b. Observations and Findings

On September 18, 1996, during a routine tour of the main control room (MCR), the inspectors noted a Work Request (WR) sticker, WR C280035, dated April 12, 1996, attached to radiation monitor 0-RM-90-101C, which indicated that the monitor had "low counts." The inspectors questioned operators regarding the operability of the monitor and were informed, and subsequently verified, that the iodine channel monitor, channel C of 0-RM-90-101, was not required by either the Offsite Dose Calculation Manual (ODCM) or TS. However, the ODCM does require the iodine sampler, a cartridge in the radiation monitor flow path which is analyzed weekly by Chemistry, to be operable. The ODCM also requires the channel A particulate sampler and the channel B noble gas activity monitor be operable. The inspectors verified with Chemistry that the iodine sampler was, in fact, operable and that weekly samples were being taken. Discussions with the radiation monitor system engineer indicated that a condition of low counts renders channel C inoperable. The inspectors also learned that repairs to the monitor were awaiting parts and that the repairs were scheduled for the week of November 4, 1996. The work order (WO) associated with the monitor repair stated that the reason for the low counts was a bad "HV" power supply or a bad detector.

Further review by the inspectors of the operability requirements for monitor 0-RM-90-101C revealed that the Updated Final Safety Analysis Report (UFSAR), Section 11.4.2.2.4, states that either of the three channels of 0-RM-90-101 (A, B, or C) automatically initiates an Auxiliary Building Isolation (ABI). On September 26, following a discussion with the Shift Manager regarding the loss of Auxiliary Building Isolation (ABI) function for 0-RM-90-101C, the MCR monitor was

tagged with an "INOP" tag. On September 28, Problem Evaluation Report (PER) No. SQ962511PER was written by operations to address the validity of the ABI initiation since the monitor was not required by either TS or the ODCM. The PER also questioned the time frame during which the monitor would not have performed the ABI function. On October 3, 1996, maintenance personnel replaced the detector on 0-RM-90-101C, successfully completed the post maintenance test (PMT), and returned the monitor to service.

c. Conclusions

The inspectors concluded that operators were not aware that 0-RM-90-101C would not perform its designed ABI function with a condition of "low counts" and, therefore, did not consider the monitor for 0-RM-90-101C to be inoperable. However, once the question of operability was raised by the inspectors, operations took appropriate action to identify the monitor as inoperable and to write a PER. The inspectors will follow up on the resolution of PER No. SQ962511PER regarding the ABI function of 0-RM-90-101C. This item is identified as Inspector Followup Item (IFI) 50-327, 328/96-11-02, Review Corrective Action of PER No. SQ962511PER Related to ABI Function of Radiation Monitor 0-RM-90-101C.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Components (52707)

a. Inspection Scope (61726 & 62707)

The inspectors observed and/or reviewed all or portions of the following work activities and/or surveillances:

- W09629423 Change inboard and outboard bearing oil and perform section XI test
- W09304301 Replace flex conduit to MFIV 2-MVOP-003-0033A
- W09407044 Replace flex conduit to MFIV 2-MVOP-003-0047B
- W09302957 Replace EDG starting air system relief valve
- W09302971 Replace EDG starting air system relief valve
- W09628678 Replace failed primary water pump seal

b. Observations and Findings

The inspectors noted that the work activities and the performance of surveillance activities were adequately performed.

M2 Maintenance and Material Condition of Facilities and Equipment

M2.1 Auxiliary Feedwater Pump (AFW) 1B-B Bearing Oil Discoloration

a. Inspection Scope (62707)

The inspector observed a scheduled preventive maintenance activity on the 1B-B AFW pump which included changing the oil on the inboard and outboard pump bearings.

b. Observations and Findings

On September 30, 1996, the inspector observed preventive maintenance being performed on the 1B-B AFW pump. The maintenance was performed under WO 9629432 and included changing the oil in the inboard and outboard pump bearings. The oil which was drained had a noticeable dark discoloration and the subsequent oil sample results indicated a high level of iron and copper. Also, while inspecting the bearing housing, the licensee discovered two metal fragments which were believed to have come from the threads of the oil drain plug when it was over-tightened during its last installation. The licensee performed a visual inspection of the bearings and did not identify any abnormalities. New oil was added, an American Society of Mechanical Engineers (ASME) Section XI test was performed on the pump, and the oil was flushed and replaced again following the Section XI test.

The licensee documented the discovery of the discolored oil in PER No. SQ962516PER and discussed their oil sample findings with the pump vendor. In a letter from the vendor to the licensee dated October 2, 1996, the vendor stated that both the pump and bearing vendor were aware of instances (throughout the industry) of "black oil" but had not been able to determine the exact source of the oil discoloration. The vendor further stated that they were not aware that this condition and/or the resulting "black oil" caused failure or accelerated failure of the bearing, and subsequently the pump. The vendor recommended that the licensee continue to monitor the condition and quality of the oil and to change it periodically. The licensee informed the inspector that they intend to drain and sample the oil after each quarterly run of the pump.

On October 7, 1996, the vendor stated in another letter to the licensee, that the pump should perform satisfactorily until the next refueling outage and that TVA should follow the recommendations concerning the monitoring and changing of the oil. The vendor further stated that they had not established any specific allowable percentages of elements found in the oil as indicators to change the oil.

As a result of this most recent problem with AFW bearings/oil, the licensee's Nuclear Assurance organization initiated PER No. SQ962542PER, dated October 2, 1996, which referenced four previous PER's related to AFW bearing oil problems, and classified these four PERs as examples of inadequate recurrence control. One of those four PERs, No. SQ951743PER, dated October 5, 1995, had also identified high metal content in the 1B-B AFW bearing oil. That PER was closed in April 1996 without a root cause analysis, without an extent of condition review, without a review of previous similar events, or without interim actions addressing the high metal content.

c. Conclusions

A positive observation was noted when Nuclear Assurance identified four previous PERs related to AFW bearing oil problems.

A weakness was identified in the licensee's corrective action program for failure to adequately address previously identified AFW bearing oil problems.

M2.2 Explosion of Potential Transformer in 500 KV Switchyard

a. Inspection Scope (62707)

On October 5, 1996, a potential transformer (PT) in the 500 KV switchyard exploded. The inspector reported to the site to assess the damage to the switchyard and to verify that neither unit was affected by the explosion.

b. Observations and Findings

The explosion of the PT caused the loss of Bus 1 in the 500 KV switchyard. Switchyard relays sensed the electrical fault, as designed, and power circuit breakers opened to clear the differential fault. During the event, oil from the failed PT sprayed onto the gravel in the switchyard and ignited. The fire was extinguished in approximately 16 minutes. Additionally, shrapnel from the explosion damaged the 500 KV to 161 KV intertie transformer as well as other switchyard components such as insulators. Both units experienced various control room alarms but no plant equipment was affected and both units continued to operate at full power. There were no personnel injuries during the event.

Approximately one hour after the initiation of the event, the licensee simultaneously declared, then exited, a Notification of Unusual Event due to an explosion within the protected area. The licensee also determined that the loss of the intertie transformer did not affect the reliability of the required off-site power sources.

The licensee subsequently replaced three PTs, including the one which exploded, and returned the 500 KV Bus 1 to service on October 12, 1996. However, when the inspection period ended, the intertie transformer remained out of service for repairs and other PM activities.

The inspector reviewed the PM history related to the type of PT which failed and learned that preventive maintenance had never been performed on these particular PTs since they were purchased in 1972. The recommended PM interval was noted to be six years. Due to increased attention which the licensee has recently placed on switchyard maintenance, these particular PTs had been scheduled to be inspected during the next outage in 1997.

c. Conclusions

The inspector concluded that the licensee's failure, over a period of years, to ensure that the 500 KV switchyard PTs were routinely inspected, contributed to the eventual failure of the PT. This is considered a weakness of the switchyard PM program.

M2.3 Yard Fire Hydrant Repair/Replacement

a. Inspection Scope (62707)

The inspectors reviewed the activities related to repair/replacement of a yard fire hydrant adjacent to the ERCW underground piping.

b. Observations and Findings

During tours of the facility, the inspectors noted excavation in the area of the ERCW underground piping missile shield. Excavation was directly adjacent to the missile shield. The inspector requested the licensee to provide information regarding requirements for excavation near safety related equipment. The inspector learned that Site Standard Practice (SSP)-7.4, Work Permits, Revision 7, required that Site Engineering shall be notified by the cognizant engineer prior to any excavations within 10 feet of Category 1 structures (buildings, manholes, conduit banks, etc.).

On June 18, 1996, excavation permit No. 94-09292-00 was signed and issued by Site Engineering to remove earth from around a fire hydrant adjacent to an ERCW concrete missile shield in order to replace the hydrant. The permit required temporary missile protection if the excavation was within six feet from the edge of the ERCW permanent missile protection. The inspector verified that the fire hydrant was less than two feet from the ERCW permanent missile protection and therefore personnel should have contacted Site Engineering for specific guidance on installing temporary missile protection. The actual excavation to replace the fire hydrant was started on October 4, 1996.

The inspector reviewed WO 9409292 and noted that, in step 5.1, the work supervisor initialed the step acknowledging that the excavation would be performed per the SSP-7.4 excavation permit which was part of the work package. However, the work supervisor did not contact Site Engineering for specific instructions nor did he install any temporary missile protection as required by the excavation permit, even though the hydrant was less than the required six feet from the permanent ERCW missile

protection. The failure to install temporary missile protection for ERCW piping as required by SSP-7.4 is considered to be a violation (VIO 50-327,328/96-11-03).

Following discussions with the licensee, PER No. SQN962668PER was initiated to document that temporary missile protection was not in place and that the excavation was immediately adjacent to the ERCW permanent missile protection concrete slab.

c. Conclusions

The failure to follow a procedure, which required a temporary missile shield, while excavating in the area of ERCW missile shield, is considered to be a violation.

III. Engineering

E1 Conduct of Engineering

E1.1 General Comments (37551)

An inspection was conducted on September 23 - 27, 1996, in the areas of service water system operational performance in accordance with NRC Temporary Instruction (TI) 2515/118. This inspection concentrated on resolution of existing open items associated with the Service Water System inspection. The NRC review concluded the licensee had adequately addressed the technical issues associated with the service water systems. Section E8 discusses items related to this service water followup inspection.

E2 Engineering Support of Facilities and Equipment

E2.1 Diesel Generator (DG) Starting Air system Relief Valves

a. Inspection Scope (37551)

During the previous inspection period, the inspector observed an emergency diesel generator (DG) starting air system relief valve lifting due to overpressure. The inspector reviewed the documentation associated with the relief valve PM program and the relief valve corrective maintenance history.

b. Observations and Findings

Due to problems being experienced with the DG starting air system pressure control switches, the system relief valves had been documented as lifting on several occasions. During tours with an assistant unit operator (AUO) the inspector observed a lifting DG starting air system relief valve. The inspector had noted that the relief valve was lifting with a pressure of 345 psig on the starting air system receiver tank. This observation was discussed in detail in IR 96-09 and included a

violation for inadequate corrective action associated with the repair and replacement of the starting air compressor pressure control switches.

In order to determine proper operation of the relief valve, the inspector reviewed the lift setpoints for the system relief valves. The system control drawing, CCD No.1,2-47W839-2, NOTE 3, listed the design pressure as 250 psig. This drawing information was incorrect. The inspector noted that normal system pressure is controlled between 250-300 psig.

The design basis document, SQN-DC-V-11.8, documented the maximum operating condition as 300 psig and the design condition for the system at 330 psig. The work history noted that the relief valves were set in a range of 340 to 360 psig. The licensee is committed to the 1986 Edition of the ASME Pressure Vessel Code. The 1986 Edition of the ASME Code, Section VIII UG-125 (c), states that all pressure vessels shall be protected by a pressure-relieving device that shall prevent pressure from rising more than 10% above the maximum allowable working pressure (operating condition) of the system. Contrary to the ASME code, the DG starting air system relief valves were set above the allowable limit of 330 psig and this is considered to be a violation (VIO 50 327 328/96-11-04).

c. Conclusions

The failure to properly adjust the DG starting air system relief valve (8) setpoints is considered to be a violation.

E8 Miscellaneous Engineering Issues (92902, TI 2515/118)

E8.1 (CLOSED) IFI 95-03-01: Generic Letter (GL) 89-13 Actions on Dead Leg Flushing, Chemical Treatment, High Pressure Fire Protection (HPFP) System and Airside Cooler Testing

This IFI identified that the licensee's GL 89-13 committed actions were not fully implemented. Neither the licensee's actions nor the docketed GL 89-13 response fully encompassed the HPFP system. Also, the licensee's docketed GL 89-13 response omitted discussion of room cooler air side testing.

The inspector toured the ERCW intake pumping station and inspected the ERCW pumps, strainers, traveling screens, and flood mode sump pumps. Additionally, the inspector noted the chemical chlorination injection line was being replaced.

Regarding room cooler air side testing, the licensee's GL 89-13 response, dated September 22, 1995, discussed that periodic air flow testing was performed on the air side of the Emergency Safeguards Features (ESF) room/area coolers and lower containment vent coolers to confirm minimum air flow requirements. The inspector determined that this periodic testing was adequate.

Regarding the HPFP system, the licensee's position was that the HPFP system was not a safety-related system and the HPFP system was not included as a service water system as defined by GL 89-13 because it did not add heat to the ultimate heat sink. The inspector concurred with the licensee's position that the HPFP was not a service water system as defined by GL 89-13. However, based on Technical Specification requirements, the licensee was maintaining the HPFP comparable to the GL 89-13 requirements.

E8.2 (CLOSED) VIO 95-03-02: Inadequate Design Control Measures for ERCW, HPFP, and DG Batteries

This was a four-part violation that identified numerous deficiencies in design control measures associated with ERCW strainer plugging, use of the HPFP system for flood mitigation, acceptability of replacement DG batteries, and the setpoint calculation for turbine building isolation. The inspectors reviewed the corrective actions contained in the licensee's response dated May 22, 1995. Based on the inspectors review, these corrective actions had been implemented and adequately addressed the deficiencies. Accordingly, this violation is closed.

E8.3 (CLOSED) URI 95-03-03: Interpretation of Design Basis Flood

This Unresolved Item (URI) questioned whether the licensee's categorization of the design basis for two 100% capacity ERCW upper deck sump pumps as an "event" versus an "accident" was consistent with NRC regulations. Due to the licensee's classification that the upper deck sump pumps were required to mitigate certain "events" but not the consequences of an accident, the sump pumps had not been included in any pump testing or maintenance program.

The inspectors concluded that the upper deck sump pumps would not be considered safety-related by any existing regulation. However, occurrences such as fires, floods, missiles, storms, or earthquakes were considered "events" and any event can lead to or cause an accident that requires analysis under Chapter 15 of the UFSAR. Since the sump pumps have some importance to safety, the licensee should have a testing program to comply with General Design Criteria (GDC) I. GDC I requires components important to safety be tested to quality standards commensurate with the importance of the safety function to be performed. The inspector verified the licensee had placed the ERCW sump pumps in the second ten-year inspection interval for ASME Section XI. Since ASME Section XI testing clearly meets the requirements of GDC I, this URI is closed.

E8.4 (CLOSED) VIO 95-03-04: Inadequate Procedures or Improper Procedure Implementation

This violation identified five examples of deficiencies with either procedure quality or adherence. The examples cited were inadequate review of procedure Abnormal Operating Instruction (AOI)-7, Probable Maximum Flood, failure to post a transient fire load permit, failure to

place a work request sticker on inoperable control room instrumentation, and inadequate performance of an equalivancy evaluation. The inspectors reviewed the corrective actions contained in the licensee's response dated May 22, 1995. Based on the inspectors review, these corrective actions had been implemented and adequately addressed the deficiencies. Accordingly, this violation is closed.

During the review of corrective actions for inadequate review of procedure AOI-7, the inspectors noted that a licensee Quality Assurance (QA) audit had identified procedure Abnormal Operating Procedure (AOP)-N.03, Flooding, Revision 0, contained references to procedure 0-FP-MXX-000-003 and did not contain actions that were in AOI-7. The licensee had canceled procedure 0-FP-MXX-000-003, Flood Preparation - Parts, Tools, and Equipment to be Moved Above Elevation 723.1, and included a list of supplies and equipment that were to be moved above the flood level in procedure AOP-N.03. The licensee had issued PER No. SQ962256PER dated August 2, 1996 to document these QA audit findings. The licensee issued AOP-N.03 revision 1 effective September 6, 1996 to address the QA audit findings.

10 CFR 50, Appendix B, Criterion III, "Design Control," states in part that "Measures shall be established to assure that applicable regulatory requirements and the design basis . . . are correctly translated into specifications, drawings, procedures, and instructions." Contrary to the above, the licensee failed to ensure the procedural guidance provided in AOI-7 was properly translated to AOP-N.03. However, the licensee had identified the problem and taken prompt corrective action. This licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. This item is identified as NCV 50-327, 328/96-11-05, Inadequate Translation of Procedural Guidance During AOP Upgrade Program.

E8.5 (Closed) VIO 95-03-05: Failure to Identify Conditions Adverse to Quality

This violation identified three examples for failing to initiate a problem evaluation report of conditions adverse to quality. The examples cited were multiple calculations that were not adequately documented for stand-alone review, multiple deficiencies with plant service water system identified during the licensee's self-assessments in 1993 and 1994, and failure to comply with TS 6.2.3.4. The inspectors reviewed the corrective actions contained in the licensee's response dated May 22, 1995. Based on the inspectors review, these corrective actions had been implemented and adequately addressed the deficiencies. Accordingly, this violation is closed.

E8.6 (CLOSED) IFI 95-03-08: LCO Considerations for Select Room Coolers

The licensee had issued a memorandum to Operations personnel providing guidance on entry into LCOs when room coolers were removed from service. The memorandum contained a matrix that related room coolers to the

applicable LCO and the unit or units affected. The inspectors concluded the memorandum provided sufficient guidance to the operators.

E8.7 (CLOSED) IFI 95-03-10: Implementation of New Ultrasonic Testing Methodology

This IFI identified the licensee's ultrasonic testing (UT) of piping had not been optimized. The UT was a pass/fail test without attempting to quantify the corrosion rate or predict through-wall failures. Within the past year, the licensee began to gather data to determine corrosion rate or predict through-wall failure. The program had not been in effect long enough to produce quantifiable results.

The inspector held discussions with the engineering personnel involved in the wall thickness inspections and reviewed the test data for two areas inspected using UT identified as 1-67-D-G057 and 1-67-W-G024. Licensee trending of UT data indicated that base material thickness for piping area 1-67-W-G024 was approaching minimum wall thickness and was recently replaced. Based on the inspectors evaluation, this program was found to be adequate.

IV. Plant Support

P1 Conduct of EP Activities

P1.1 Observation of Radiological Emergency Preparedness (REP) Drill

a. Inspection Scope (82301)

On October 2, 1996, the inspector observed portions of an REP drill which the licensee conducted in preparation for the November 6 full scale REP Graded Exercise. On October 4, 1996, the inspector attended the licensee's formal critique of the October 2 drill.

b. Findings and Observations

The inspector observed the activation of the Technical Support Center (TSC) during this total loss of all offsite AC electrical power drill scenario. To give a realistic effect, the TSC normal lighting was disabled and the TSC was illuminated only by installed emergency lighting and hand carried flashlights. The TSC was staffed expeditiously and appeared to function smoothly even with limited lighting. The inspector observed that the licensee experienced problems with the Integrated Computer System (ICS), an initial shortage of phone headsets, and telecommunication problems with the corporate emergency response center. These deficiencies were discussed by the licensee at the formal critique following the drill.

c. Conclusions

The inspector concluded that the licensee conducted a challenging REP drill scenario in preparation for the November 6, 1996, graded REP exercise. During the drill critique, the licensee was quick to identify drill deficiencies and discussed ways to make improvements in the EP program.

P1.2 Followup

a. Inspection Scope (82701)

The inspection focused on program initiatives to correct program deficiencies that were identified in an emergency preparedness inspection conducted in April 1996 and documented in Inspection Report 50-327, 50-328/96-04.

b. Observations and Findings

Since the April inspection the licensee had conducted a self-assessment of the emergency preparedness program and completed the 50.54(q) review of the program. The reviews resulted in some minor inconsistencies being corrected but both the self-assessment and 50.54(q) review validated an effective program. The inspector's review of 1) documentation addressing the maintenance of the emergency preparedness program, 2) equipment and facilities, and 3) review of training documents and training was accomplished with no safety-significant issues identified.

The focus of inspection observations was on the open items from the April inspection. The inspector reviewed the radiological monitoring instrumentation in the Control Room against the instrumentation ranges and nomenclature identified in the EALs. No issues were identified, which closed IFI 50-327, 328/96-04-05. The inspector reviewed selected copies of the Emergency Plan and Implementing Procedures to verify that controlled copies were being properly maintained. No discrepancies were noted, thus closing VIO 50-327, 50-328/96-04-06. The inspector reviewed the status of the batteries for the OSC radios. The batteries were fully charged, with 11 spares available. The licensee had implemented a program for maintaining the batteries. This closed VIO 50-327, 50-328/96-04-07. The inspector reviewed the licensee's implementation of its tracking and closing of items identified as issues during drills. The inspector found the licensee to be extremely aggressive in tracking items and assigning responsibility for corrective action. This closed IFI 50-327, 50-328/96-04-09.

c. Conclusions

The inspector's observations verified that the program was being managed effectively, and that good corrective actions had been taken to previously identified issues. Two open violations (50-327, 50-328/96-04-08 and 50-327, 328/96-04-10) were not reviewed because

additional information had been provided to NRC and a reply had yet to be provided.

The emergency program was observed to be well managed and receiving management support. Effective corrective actions taken to previous open items permitted the closure of two violations and two IFIs.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on November 5, 1996. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials would be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

- *Adney, R., Site Vice President
- *Beasley, J., Acting Site Quality Manager
- *Bryant, L., Outage Manager
- *Burzynski, M., Engineering & Materials Manager
- Driscoll, D., Training Manager
- *Fecht, M., Nuclear Assurance & Licensing Manager
- Fink, F., Business and Work Performance Manager
- *Flippo, T., Site Support Manager
- *Harrington, W., Acting Maintenance Manager
- *Herron, J., Plant Manager
- Kent, C., Radcon/Chemistry Manager
- Lagergren, B., Operations Manager
- Rausch, R., Maintenance and Modifications Manager
- Reynolds, J., Operations Superintendent
- *Rupert, J., Engineering and Support Services Manager
- *Shell, R., Manager of Licensing and Industry Affairs
- Skarzinski, M., Technical Support Manager
- *Smith, J., Licensing Supervisor
- Summy, J., Assistant Plant Manager
- Symonds, J., Modifications Manager

* Attended exit interview

INSPECTION PROCEDURES USED

- IP 37551: Onsite Engineering
- IP 40500: Effectiveness of Licensee Controls In Identifying, Resolving, & Preventing Problems
- IP 61726: Surveillance Observations

IP 62707: Maintenance Observations
 IP 71707: Plant Operations
 IP 71750: Plant Support Activities
 IP 82301: Evaluation of Exercises for Power Reactors
 IP 92902: Followup Maintenance
 TI 2515/118: Service Water System Operational Performance Inspection
 IO 82701: Operational Status of the Emergency Preparedness Program

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

<u>Type</u>	<u>Item Number</u>	<u>Status</u>	<u>Description and Reference</u>
NCV	50-327, 328/96-11-01	Open/ Closed	Failure to Implement EGTS System Operating Procedure When Operating EGTS (Section 01.2).
IFI	50-327, 328/96-11-02	Open	Review corrective Action of PER No. SQ962511PER Related to ABI Function of Radiation Monitor 0-RM-90-101C (Section 02.1).
VIO	50-327, 328/96-11-03	Open	Failure to Install Temporary Missile Protection for ERCW Piping as Required by SSP-7.4 (Section M2.3).
VIO	50-327, 328/96-11-04	Open	Failure to Set DG Starting Air System Relief Valves with the ASME Code Limit (Section E2.1).
NCV	50-327, 328/96-11-05	Open/ Closed	Inadequate Translation of Procedural Guidance During AOP Upgrade Program. (Section E8.4)

Closed

<u>Type</u>	<u>Item Number</u>	<u>Status</u>	<u>Description and Reference</u>
IFI	95-03-01	CLOSED	GL Actions on Deadleg Flushing, Chemical Treatment, HPFP System & Airside Cooler Testing (Section E8.1)
VIO	95-03-02	CLOSED	Inadequate Design Control Measures for ERCW, HPFP, and EDG Batteries (Section E8.2)
URI	95-03-03	CLOSED	Interpretation of Design Basis Flood (Section E8.3)

VIO	95-03-04	CLOSED	Inadequate Procedures or Improper Procedure Implementation (Section E8.4)
VIO	95-03-05	CLOSED	Failure to Identify Conditions Adverse to Quality (Section E8.5)
IFI	95-03-08	CLOSED	LCO Considerations for Select Room Coolers (Section E8.6)
IFI	95-03-10	CLOSED	Implementation of New Ultrasonic Testing Methodology (Section E8.7)
IFI	96-04-05	CLOSED	Inconsistency between Nomenclature in the EALs and Control Room, and Proper Terminology in the EALs (Section P1.2)
VIO	96-04-06	CLOSED	Failure to Maintain Controlled Volumes of the EIPs up-to-date (Section P1.2)
VIO	96-04-07	CLOSED	Failure to Maintain Operational Readiness of the Batteries for the Emergency Two-way Radios in the OSC (Section P1.2)
IFI	96-04-09	CLOSED	Verify the Tracking and Resolution of Corrective Action Items and Items Needing Improvement Identified in Drill Reports (Section 1.2)

LIST OF ACRONYMS USED

ABI	-	Auxiliary Building Isolation
AC	-	Alternating Current
AFW	-	Auxiliary Feedwater
AOI	-	Abnormal Operating Instruction
AOP	-	Abnormal Operating Procedure
ASME	-	American Society of Mechanical Engineers
AUO	-	Assistant Unit Operator
CCP	-	Centrifugal Charging Pump
CFR	-	Code of Federal Regulations
CLA	-	Cold Leg Accumulator
DG	-	Diesel Generator
DRP	-	Division of Reactor Projects
ECCS	-	Emergency Core Cooling Systems
EDG	-	Emergency Diesel Generator
EGTS	-	Emergency Gas Treatment System
EHC	-	Electro-Hydraulic Control
EP	-	Emergency Preparedness
ERCW	-	Essential Raw Cooling Water
ESF	-	Engineered Safeguard Features
GDC	-	General Design Criteria
GL	-	Generic Letter
gph	-	Gallons per hour

HV	-	High Voltage
ICS	-	Integrated Computer System
IFI	-	Inspector Followup Item
IR	-	Inspection Report
KV	-	Kilo-Volt
LCO	-	Limiting Condition for Operation
LER	-	Licensee Event Report
MI	-	Maintenance Instruction
MSIV	-	Main Steam Isolation Valve
MCR	-	Main Control Room
NIS	-	Nuclear Instrumentation System
NOUE	-	Notification of Unusual Event
NCV	-	Non-cited Violation
NRC	-	Nuclear Regulatory Commission
NRR	-	Nuclear Reactor Regulation
ODCM	-	Offsite Dose Calculation Manual
PCF	-	Procedure Change Form
PER	-	Problem Evaluation Report
PM	-	Preventive Maintenance
PMT	-	Post Maintenance Test
POD	-	Plan of the Day
PT	-	Potential Transformer
psig	-	pounds per square inch gage
QA	-	Quality Assurance
QC	-	Quality Control
RCS	-	Reactor Coolant System
REP	-	Radiological Emergency Plan
RHR	-	Residual Heat Removal
RM	-	Radiation Monitor
rpm	-	Revolutions per Minute
RVLIS	-	Reactor Vessel Level Indication System
SALP	-	Systematic Assessment of Licensee Performance
SFP	-	Spent Fuel Pit/Pool
SI	-	Surveillance Instruction
SRO	-	Senior Reactor Operator
SSP	-	Site Standard Practice
SSPS	-	Solid State Protection System
TI	-	Temporary Instruction
TS	-	Technical Specifications
TSC	-	Technical Support Center
TVA	-	Tennessee Valley Authority
UFSAR	-	Updated Final Safety Analysis Report
UT	-	Ultrasonic Testing
URI	-	Unresolved Item
VCT	-	Volume Control Tank
VDC	-	Volts Direct Current
VIO	-	Violation
WO	-	Work Order
WR	-	Work Request