UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report Nos. 50-327/82-31 and 50-328/82-31

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

Facility Name: Sequoyah Nuclear Plant

Docket Nos. 50-327 and 50-328

License Nos. DPR-77 and DPR-79

Inspection at Sequoyah site near Soddy Daisy, Tennessee

Inspectors: L J. Watson for E. J. Ford — 12/29/82 Date Signed

L J. Watson for S. D. Butler — 12/29/82 Date Signed

Approved by: for D. R. Quick, Section Chief, Division of Project and Resident Programs — 12/29/82 Date Signed

SUMMARY

Inspection on November 6 - December 5, 1982

Areas Inspected

This routine unannounced inspection involved 144 inspector-hours on site in the areas of Operational Safety Verification, Unit 1 Refueling Outage, Licensee Event Report Review, Follow-up on Plant Incidents and Independent Inspection Effort.

Results

Of the five areas inspected, no violations or deviations were identified in four areas; one violation was found in one area, (Failure to train, determine prior dose and issue dosimetry to worker entering Unit 1 containment, paragraph 8).

DETAILS

1. Persons Contacted

   Licensee Employees

   C. C. Mason, Plant Superintendent
   J. E. Cross, Assistant Plant Superintendent
   P. R. Wallace, Assistant Plant Superintendent
   J. M. McGriff, Assistant Plant Superintendent
   J. W. Doty, Maintenance Supervisor (M)
   B. M. Patterson, Maintenance Supervisor (I)
   D. C. Craven, Maintenance Supervisor (E)
   L. M. Nobles, Operations Supervisor
   R. W. Fortenberry, Engineering Supervisor
   R. J. Kitts, Health Physics Supervisor
   J. T. Crittenden, Public Safety Service Supervisor
   R. L. Hamilton, Quality Assurance Supervisor
   M. R. Harding, Compliance Supervisor
   W. M. Halley, Preoperational Test Supervisor
   J. Robinson, Field Services Group Director

   Other licensee employees contacted included field services craftsmen, technicians, operators, shift engineers, security force members, engineers, maintenance personnel, contractor personnel and corporate office personnel.

2. Exit Interview

   The inspection scope and findings were summarized with the Plant Superintendent and/or members of his staff on December 7, 1982. The violation contained in Appendix A was discussed and the licensee acknowledged the inspection finding.

   During the reporting period, frequent discussions were held with the Plant Superintendent and his assistants concerning inspection findings.

3. Licensee Action on Previous Enforcement Matters.

   Not inspected.

4. Unresolved Items

   Unresolved items were not identified during this inspection.

5. Operational Safety Verification

   The inspector toured various areas of the plant on a routine basis throughout the reporting period. The following activities were reviewed/verified:

a. Adherence to limiting conditions for operation which were directly observable from the control room panels.

b. Control board instrumentation and recorder traces.

c. Proper control room and shift manning.

d. The use of approved operating procedures.

e. Unit operator and shift engineer logs.

f. General shift operating practices.

g. Housekeeping practices.

h. Posting of hold tags, caution tags and temporary alteration tags.

i. Personnel, package, and vehicle access control for the plant protected area.

j. General shift security practices on post manning, vital area access control and security force response to alarms.

k. Surveillance, start-up and peroperational testing in progress.

l. Maintenance activities in progress.

m. Health physics practices.

On November 12 Unit 2 was shutdown from full power for a scheduled surveillance and maintenance outage. On November 26 the inspector received a concern from a plant worker that firewatches were not being properly maintained in the diesel generator building during third shift on November 25. The inspector reviewed the applicable requirements for inoperability of the diesel generator building CO_2 system and discussed the situation with the Field Services Group labor foreman, an assistant shift engineer, the plant Safety Engineer and the Operations Supervisor. The inspector determined that the labor foreman involved was forced, because of manpower constraints to deviate from his normal firewatch assignment after obtaining permission from the shift engineer. The inspector concluded that the firewatch that was subsequently established, after obtaining shift engineer approval, met the requirements of Technical Specification 3.7.11.3 for inoperability of the CO_2 fire suppression system in the diesel generator building. A Region II investigative staff member was informed of the employee's concern and the inspector's findings.

On November 30 the inspector toured the 1A and 2A diesel generator rooms to verify operability of the machines after they were returned to service following modifications to the lube oil systems and the air start systems. The inspector traced the modified piping, checked switch and valve alignment and inspected the general area for housekeeping and completion of work. The

inspector noted that an additional AC and DC lube oil pump was added to each engine to ensure adequate oil pressure to the turbo charger drive gear for a hot restart of the engine. The backup DC pumps were not connected electrically. These modifications were discussed with the Assistant Plant Superintendent, Field Service engineering personnel and the Operations Supervisor. The inspector determined that an adequate evaluation had been conducted to ensure the operability of the diesels. The modifications will be completed as material becomes available. The licensee has added air dryer units to the air start systems for each engine as part of license condition 2.C.(15). The units appeared to be properly piped in, aligned and powered-up for operation. The modifications to the B train diesel generators are presently in progress and scheduled to be completed prior to restarting Unit 2.

No violations or deviations were identified.

6. Unit 1 Refueling Outage

On November 16 the inspector reviewed the completed Surveillance Instruction SI-260," SIS/BIT Injection Flow Balance Test Following Modifications." The test was performed on Unit 1 during the current refueling outage for the following purposes: to rebalance emergency core cooling (ECCS) flow after valve maintenance and system modification, to verify minimum and runout flow rates for ECCS pumps as required by Technical Specification 3.5.2 and to perform ASME Section XI testing on ECCS pumps and check valves. The inspector reviewed the completed procedure to ensure prerequisites were met and properly calibrated test equipment was used for the testing. The test data for Residual Heat Removal pumps appeared satisfactory. The inspector had previously learned that a flow element in one of the Safety Injection (SIS) cold leg injection lines was found to have been installed backwards during initial system walkdown and was correctly reinstalled prior to measuring SIS flow. Initial data for A train SIS flow was below the minimum Technical Specification value of 462 gpm. The throttle valves were adjusted to give adequate flow. The inspector discussed the discrepancy with licensee personnel and reviewed preoperational test data. The licensee concluded that the error caused by the reversed flow elements during preoperational testing was conservative and the Technical Specification flow limits were satisfied. The inspector concurred with this determination. All other ECCS flow elements were reported to be properly installed. The flow measured through the Boron Injection Tank (BIT) flow path from the centrifugal charging pumps (CCP) met Technical Specification requirements, however the licensee took additional data to draw pump head curves for the CCP's and the new curves fell below the curves used in the Final Safety Analysis Report (FSAR). The area of the curves in question is near runout flow and the licensee is presently requesting a determination from Westinghouse as to whether safety analysis assumptions are affected. The inspector will continue to follow this discrepancy until it is resolved. Other minor test discrepancies were discussed with the test director and resolved.

On November 24 the inspector learned that approximately 6-8 gallons of very small Asiatic clams were found in the "C" Component Cooling Water (CCW) heat exchanger. The heat exchanger was opened for eddy current testing of the tubes. The inspector observed the final removal of clams from the heat exchanger. The clams were in the outlet water box of the heat exchanger and it did not appear that there were enough to significantly reduce cooling water flow. The inspector discussed with the Compliance Supervisor the licensee's plans to open and inspect other coolers and heat exchangers during the current outage. Region II supervision was informed of the clams found in the "C" CCW heat exchanger.

No violations or deviations were identified.

7. Licensee Event Report (LER) Review

During the reporting period, LER's were reviewed on a routine basis as they were received from the licensee. Each LER was reviewed to determine that:

a. The report accurately described the event

b. The reported cause was accurate and the LER form reflected the proper cause code

c. The report satisfied the Technical Specification reporting requirements with respect to information provided and timing of submittal

d. Corrective action appeared appropriate to correct the cause of the event

e. Corrective action has been or is being taken

f. Generic implications, if identified, were incorporated in corrective action.

g. Corrective action taken or to be taken was adequate, particularly to prevent recurrence

h. The event did not involve continued operation in violation of regulatory requirements or licensee conditions.

The inspector has continued to monitor the licensee's resolution of the Unit 1 Main Steam (MS) check valve failure as reported in LER SQRO-50-327/82-126 (see IE report 327/82-28). The licensee has completed inspecting the Unit 2 MS check valve discs and determined that there are no indications of stud failure. The inspector has discussed corrective action with licensee maintenance and metallurgical personnel, who seemed to agree that the major contributor to the stud failure on the Unit 1 valves was the improper operation of the counter weight arms which allowed the disc to slam repeatedly against the stop causing fatigue failure of the stud. The counterweight arms were previously modified on both units to prevent the weights from slipping down the arms during operation. The licensee has

repaired the loop #1 valve disc for reuse and fabricated new studs for both the loop #1 and loop #2 check valves using the same type of material as the original studs. Other possible modifications have been evaluated but it has been concluded that the original design and material would have been adequate if the counterweight assemblies had operated properly. No further modifications are planned for the valves at this time.

No violations or deviations were identified.

8. Followup on Plant Incidents

On November 26 the inspector was informed that on November 25 a Field Services group electrician had entered Unit 1 containment and worked for approximately two hours without proper health physics training and personal dosimetry as required by Radiological Control Instructions RCI-2 "Radiological Hygiene Training" and RCI-3 "Personnel Monitoring." The worker had reported on site the previous day and was to have been assigned to unrestricted area work until he could be trained and issued dosimetry. The worker was inadvertently assigned to a crew working in the Unit 1 containment on November 25 and his escort was apparently unaware that he had not received health physics training. It was discovered by licensee personnel when the worker was exiting the regulated area that he did not have dosimetry. The worker's dose was estimated based on the dose received by other workers in the crew and it was well within regulatory limits. He was assigned to health physics training class on November 26.

The licensee is in the final stages of a management review of the occurance to determine the root causes of the problem and determine final corrective action. Permitting an individual to enter a restricted area without proper training, determination of prior occupational dose, and issuance of personnel monitoring equipment is identified as a violation of 10 CFR 19.12, 20.102 and 20.202 respectively, (327, 328/82-31-01).

9. Independent Inspection Effort

The inspector routinely attended the morning scheduling and staff meetings during the reporting period. These meetings provide a daily status report on the operational and maintenance activities in progress as well as a discussion of significant problems or incidents associated with the refueling and operations effort.

No violations or deviations were identified.