



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

Report Nos.: 50-327/84-25 and 50-328/84-25

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

Docket Nos.: 50-327 and 50-328

License Nos.: DPR-77 and DPR-79

Facility Name: Sequoyah 1 and 2

Inspection Conducted: August 6 - September 5 and October 4 and 5, 1984

Inspector:

E. J. Ford
E. J. Ford

10/16/84
Date Signed

Approved by:

S. Weise
S. Weise, Section Chief
Division of Reactor Projects

10/16/84
Date Signed

SUMMARY

Scope: This routine inspection entailed 108 inspector-hours on site in the areas of Licensee Action on Previous Enforcement Matters, Operational Safety Verification, Follow-up on Events, Maintenance and Modification, Surveillance, ESF System Walkdown, Independent Inspection Effort, and LER Review.

Results: Of the eight areas inspected, no violations or deviations were identified in six areas; three violations were found in two areas (Failure to follow RHR procedure - paragraph 3.d; Failure to maintain Auxiliary Building Gas Treatment System (ABGTS) operability - paragraph 6; Failure to conduct an adequate review of a reportable occurrence - paragraph 6).

REPORT DETAILS

1. Licensee Employees Contacted

- *G. Campbell, Site Director
- #*P. R. Wallace, Plant Manager
- #*L. M. Nobles, Operations and Engineering Superintendent
- *J. B. Krell, Maintenance Superintendent
- M. R. Harding, Engineering Group Supervisor
- J. M. Anthony, Operations Group Supervisor
- *D. C. Craven, Maintenance Supervisor (E)
- D. H. Tullis, Maintenance Supervisor (M)
- *D. Elkins, Maintenance Engineer (I)
- R. W. Fortenberry, Engineering Section Supervisor
- J. R. Walker, Assistant Operations Group Supervisor
- G. G. Wilson, Assistant Operations Group Supervisor
- D. E. Crawley, Health Physics Supervisor
- J. T. Crittenden, Public Safety Service Supervisor
- S. D. Butler, Quality Assurance Supervisor
- #*R. E. Alsup, Compliance Supervisor
- W. M. Halley, Preoperational Test Supervisor
- *G. Kirk, Compliance Engineer

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

*Attended exit interview on September 27, 1984

#Attended exit interview on October 5, 1984

2. Exit Interview

The inspection scope and findings were summarized on August 14, 30, September 27, and October 5, 1984, with the Plant Superintendent and/or members of his staff. The inspection on October 4 and 5 and exit on October 5 was conducted by the Sequoyah Region II Section Chief. During the reporting period, frequent discussions are held with the Plant Superintendent and his assistants concerning inspection findings.

3. Licensee Action on Previous Enforcement Matters

- a. (Closed) Violation 327, 328/82-18-01, Failure to Install Proper Fuses In Accordance with Drawing. The inspector reviewed the licensee's supplemental response dated August 23, 1984, and their corrective actions, including a review of portions of the safety-related fuse checking program. Corrective action appeared acceptable and this item is closed.

- b. (Closed) Violation 327/84-17-01, Violation of TS 3.6.1 1, Valve 1-33-704 Not Locked. The inspector reviewed the licensee's response to this violation dated September 4, 1984, and their corrective actions including verification of valve locking and performance of TVA valve inspection. Corrective action appeared acceptable, and this item is closed.
- c. (Closed) Violation 327/84-17-02, Violation of TS 3.5.2, Debris in U1 Containment. The inspector reviewed the licensee's response to this violation dated September 4, 1984, and their corrective actions including verification of performance of personnel interviews and briefings. Corrective actions appeared acceptable, and this item is closed.
- d. (Closed) Unresolved Item 328/84-21-04, Incorrect Valve Lineup For RHR. Step 5.1 of Surveillance Instruction SI-267.74.2, "Inservice Pressure Testing of Residual Heat Removal System - Outside Containment", requires SRO permission to perform testing. Step 5.2 requires that specific permissive and operability signatures be obtained and that the RHR system is aligned or verified aligned for operation. Step 5.3 performs valve lineups per SI-632.3, "Auxiliary Building Residual Heat Removal System External Leakage" and also aligns two additional valves. Step 5.4 then requires that the A-A (or B-B) RHR pump be started on miniflow.

Unit 2 operator log entries of July 10, 1984, show that at 0223 CDT the 2A-A RHR pump was started for the SI. Log entries subsequent to 0917 show that valves identified in Step 5.3 were operated for the SI. Plant internal investigations and QA coverage of the testing confirmed that equipment manipulations were not in accordance with the sequence delineated by the procedure. Basically step 5.4 was performed prior to step 5.3.

This failure to properly implement SI-267.74.2 is identified as a violation (328/84-25-03) and closes the unresolved item. Adequacy of SI-267.74.2 was addressed in Inspection Report 50-328/84-21 and was identified to constitute a violation. The facts surrounding the failure of the unit operator to follow the specific steps in this SI revealed that the technical inadequacy of SI-267.74.2 had no effect on the actual sequential performance of this SI.

4. Unresolved Items

Unresolved items were not identified during this inspection

5. Operational Safety Verifications (71707)

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. Postings 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 testing in progress
- l. Maintenance activities in progress
- m. Health physics practice.

6. Follow-up on Events

- a. Reactor Trip Due To Feedwater Regulating Valve (FWRV) Closure (93702, 62703)

On August 28, 1984, the inspector reviewed logs, records, and interviewed personnel regarding a Unit 1 reactor trip the previous evening. Discussions with operations personnel indicated that #1 steam generator (SG) FWRV failed closed initiating a reactor trip on steam flow/feed flow mismatch coincident with a SG level of 25%. At the time, the reactor was at 100% rated thermal power, normal operating temperature and pressure.

The inspector reviewed the Trip Report (AOI-1, Appendix A - Trip Report) 1-84-11 and noted that pressure indicator PI-68-66 failed low, the volume control tank (VCT) divert valve failed open to the hold-up tanks, and that automatic control for A and C pressurizer heaters failed. Post trip investigation revealed an open breaker in rack 1-R-15 which protectively tripped when the 1-LT-68-335 circuit fuse blew. Repairs were effected and symptoms were repeated by test opening of 1-R-15, thus confirming the causal mechanism. The inspector was

accompanied by the STA, an instrument engineer, to rack 1-R-15 for discussion and examination of the pertinent equipment.

No violations or deviations were identified.

b. Auxiliary Building Secondary Containment Enclosure (ABSCE) Integrity (93702)

On the morning of August 20, 1984, a licensee supervisor discovered Auxiliary Building (AB) doors A206 and A207 blocked open, possibly preventing establishment of a negative pressure in the AB using the Auxiliary Building Gas Treatment System (ABGTS). The ABGTS was not in operation or required to be at this time. Operations personnel were informed, and both trains of ABGTS declared inoperable until the inner door was closed. These doors provide an access path to the AB roof. The outer door is a vital area boundary door and is locked closed. Construction workers had blocked open the doors to allow material passage and to run an extension cord to support activities on the AB roof. The doors were open an hour. During the afternoon of August 20, the doors were opened by a security guard for airflow and subsequently closed when workers informed the guard of the need for one door to be kept shut. Licensee Event Report (LER) 50-327/84055 was issued describing these events.

On September 5, 1984, a licensed safety engineer noticed a door from an AB stairwell, to the west valve room, cracked open. At the same time an auto-close door from the AB to the same stairwell, that would have also sealed off the valve room was blocked open for maintenance in the stairwell. With the valve room open to atmosphere, this condition could result in the ABGTS not being capable of maintaining negative pressure on the AB if the system were placed in service. This is similar to the event which occurred on August 20, 1984. The open door did not have an auto-close device installed. The licensee investigation of this third event indicated that a worker most probably failed to ensure that this heavy door was positively latched after passage. The other door had been properly removed from service in accordance with licensee procedures. LER 50-327/84053 was issued describing this event.

On October 5, 1984, the inspector reviewed these events onsite. The inspector reviewed the LERs, interviewed selected individuals involved in the August 20 events, reviewed licensee corrective actions including night orders and procedure changes, and held discussions with licensee management. Based on this review, the inspector had the following findings:

- 1) Formal licensee corrective actions were not prompt after the August 20 events. The inspector reviewed a memorandum from the Operations Supervisor dated September 7, 1984, concerning breaches of ABSCE integrity and reviewed temporary procedure change 84-1386 dated September 11, 1984, to Technical Instruction-77 for control

of ABSCE boundaries. The inspector noted that these formal controls were not instituted until after the third event and nearly three weeks after the initial events. The inspector also found that the security organization did not receive written guidance until September 10, 1984. Additionally, recurrence of the same ABSCE breach on August 20 also indicated inadequate management attention. Failure to maintain the integrity of the ABSCE, which is required to ensure that the ABGTS can maintain the required negative pressure in the auxiliary building during an accident is a violation (327/84-25-01 and 328/84-25-01). Licensee identified credit is not given due to the lack of prompt, effective corrective actions.

- 2) Additional violations of T.S. 3.7.8. on ABGTS operability were identified by the inspector. Based on Vital Area Entrance Logs and interviews with security personnel, doors A206 and A207 appeared to have been breached on August 17, 1984. This fact was not identified by the licensee during their investigation of the events. Failure to conduct an adequate review of a reportable occurrence so as to identify related occurrences is a violation (327/84-25-02 and 328/84-25-02). The previous breach identified by the inspector was caused by work activities related to the reported event.

7. Maintenance and Modifications

a. Reactor Vessel Level Indicating System (RVLIS) Modification (37700)

On several occasions during the reporting period, the inspector observed ongoing work activities on Auxiliary Building elevation 714' in the Ventilation and Purge Room. These activities included electrical conduit installation for the RVLIS. The inspector discussed the installation with workers, and noted the presence of a QA inspector. The work plan was reviewed and the work appeared to be properly authorized and documented.

No violations or deviations were identified.

b. Maintenance (62703, 93702)

On August 30, 1984, Unit 2 was undergoing startup, and steam generator (SG) water levels were being manually controlled while in the low power operating region. While attempting to transfer from the bypass to the main feedwater regulating valves, the unit experienced a turbine trip due to high-high level on #1 steam generator. Shortly thereafter, the unit experienced a reactor trip due to low-low water level on #3 steam generator. The low SG levels are a consequence of feedwater (FW) isolation valve closure due to the previous high level signal and SG inventory shrinkage.

During this event, the operators noted that FW isolation valve 2-FCV-3-47 did not close. Maintenance personnel were contacted and troubleshooting initiated. The valve's failure to close was traced to sticky relay contacts within the breaker compartment. The problem was corrected and the valve successfully stroke tested. The licensee then initiated a maintenance investigation. For the initial investigation the safety related boards containing this type of relay contactor were examined to detect any further instances of sticking contacts. Of 5,520 contacts inspected, three were found to be partially stuck and were corrected. The inspector discussed the problem and corrective actions with electrical maintenance personnel and inspected several breaker compartment interiors with the electrical maintenance supervisor to observe conditions and relay operation. No housekeeping discrepancies were noted.

No violations or deviations were identified.

8. Surveillance (61726)

On August 30, 1984, the inspector observed a portion of Surveillance Instruction SI-90.8, "Monthly Functional Test of Reactor Trip Instrumentation" which utilizes Instrument Maintenance Instruction IMI-99 SSPS, "Solid State Protection System". The testing in progress was for the B train protection system. The inspector verified that testing was being performed in compliance with the procedure in use, that communications were adequate and that personnel were utilizing independent verification. It was observed that the correct test equipment cart was utilized and its equipment had calibration tagging.

No violations or deviations were identified.

9. ESF System Walkdown (71710)

During the reporting period, the inspector performed a detailed operability review of the Unit 2 Auxiliary Feedwater System. This included a review of the FSAR and applicable Technical Specifications. The inspector utilized as-built drawings to verify the licensees' system line-up procedure, SOI 3.2 "Auxiliary Feedwater System". These documents were then used to walkdown accessible portions of the system including flow valve alignment, locking verification, instrumentation alignment and power availability checks. Both trains of equipment were checked. No discrepancies were noted.

No violations or deviations were identified.

10. Independent Inspection Effort (92706)

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

11. 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 requirement 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 license conditions

Based on this review the following LER's are closed: 328/84008 and 327/84005.