

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

Report No. 50-328/81-34

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

Facility Name: Sequoyah Unit 2

Docket No. 50-328

License No. CPPR-73

Inspection at Sequoyah Site Near Chattanooga, TN

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Inspectors:

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Approved by:

C. E. Murphy, Coef Engineering Inspection Branch Engineering and Technical Inspection Division

7-31-87 Date Signed

7-31-81 Date Signed

31/81 Date Signed

SUMMARY

Inspection on June 21-24, 1981

Areas Inspected

This routine, announced inspection involved 78 inspector-hours onsite in the areas of integrated engineering safeguards activation testing and undervoltage starting bus evaluation.

Results

No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

1. 1. 1.

- ∟ censee Employees
- *J. A. McGriff, Assistant Superintendent
- *P. T. Garrett, Pre-Op Engineer
- *B. W. Williams, EN DES, Nuclear Engineer
- *R. A. Bollinger, Nuclear Power, Nuclear Engineer
- *M. A. McBurnett, Power-RS, Nuclear Engineer
- *E. A. Condon, Nuclear Power Pre-Op Test Staff
- *W. T. Cottle, Assistant Plant Superintendent
- J. M. Ballentine, Plant Superintendent
- J. Nicely, Engineering Design
- S. Thickman, Engineering Design
- M. Skarzinski, Pre-Op Engineer

NRC Resident Inspectors

- *E. J. Ford
- S. Butler

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on June 24, 1981 with those persons indicated in paragraph 1 above.

3 Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. One new unresolved item identified during this inspection is discussed in paragraph 6.

5. Integrated Essential Safeguard Features System Test (ESF)

The inspectors observed the performance of the Integrated Essential Safeguard Features System Test conducted in accordance with TVA Test No. W-6.1F. The first two sections of the test as performed, consisted of the disabling of one train of safeguards equipment and initiating a safety injection signal to demonstrate the following:

- proper operation of air and motor operated valves assigned to the operable safeguards train,
- b. proper operation of the injection pumps in the operable train, and
- c. proper containment isolation

The third section of the test was designed to demonstrate the proper operation of equipment during a loss of offsite power in conjunction with a safety injection signal.

During the test several exceptions were taken to the procedure which were in part due to the short time in which the procedure was developed. In every case identified the exceptions were justified and determined to be a problem with the procedure and not the equipment or systems. It was further noted that the number of test deficiencies declined as each section of the test was performed.

No major equipment failed to perform its intended function as denoted in the procedure. Several valves did not position properly during certain phases of the test but in general were dete mined to have responded properly, with the procedure being in error.

The deficiencies and exceptions will require evaluation by the licensee. These evaluations will be reviewed during subsequence inspections.

Within the areas inspected, no violations were identified.

6. Loss of Offsite Power (LOP)

Testing as part of the integrated ESF testing a LOP was initiated. All pumps started in sequence as designed and came to full flow conditions within the required time, with one exception. The safety injection pump motor did not come to full load current originally. Investigation revealed that the discharge valves were closed and the only loading of the pump was the recirculation or mini flow load. It was determined that the discharge valves FCV-63-152 and FCV-63-153 had been closed during the filling of the accumulators per System Operating Instruction (SOI) 63.1A. It was also found that the 480V circuit breaker for the accumulator block valves had been racked out to keep them from opening accidently. These breakers had remained racked out during the initial part of the LOP test, therefore the accumulator block valves did not open.

The two FCV's were opened and the SI pumps started, with the diesel generators supplying power, and full flow conditions were met. The accumulator dump valves had opened during the first two sections of testing so there was little doubt that the block valves would open on signal. Further, racking in the breakers before the safety injection signal was reset immediately led to opening of the valves. The inspectors commented to licensee management that there appeared to be a lack of valve control as evidenced by the conditions described. The licensee representatives stated that they were concerned and would review the SOI's to determine if the instructions are inadequate or if there was a failure on the part of the operating staff to follow the SOI.

This apparent failure to exercise adequate valve control has been identified as Unresolved Item 328/81-34-01 pending licensee review of the adequacy of valve control through SOI's. Within the area examined, no violations were identified.

7. Reduced Voltage Test

In conjunction with the ESF test the licensee reduced the voltage at the 6900 KV Start Boards to a value of 6651V. With the start of all pumps on initiation of the safety injection signal the voltage dropped to 6236V (as recorded by a Brush recorder) and recovered in approximately 5½ seconds. During this time the meters on the 480V Start Board 2A1-A were observed. The readings at Board 2A1-A before the start of safety injection was 470 volts, 175 amps and 475 KW. At initiation of the SI signal, the voltage sagged to 425 volts and recovered to 465 volts, 890 amps, and 640 KW. No trips due to undervoltage or overcurrent were noted.

The lowest voltage recorded for the 6.9 KV system was above the minimum voltages listed in table 8.2-1 of the FSAR which lists the worst-case load conditions.

Within the areas examined, no violations were identified.