



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

*Washington PDR
50-327*

OCT 13 1978

In Reply Refer To:
RII:TJD
50-327/78-28

Tennessee Valley Authority
Attn: Mr. N. B. Hughes
Manager of Power
830 Power Building
Chattanooga, Tennessee 37401

Gentlemen:

This refers to the inspection conducted by Mr. T. J. Donat of this office on September 20-23, 1978, of activities authorized by NRC Construction Permit No. CPPR-72 for the Sequoyah Unit 1 facility, and to the discussion of our findings held with Mr. J. Ballentine at the conclusion of the inspection.

Areas examined during the inspection and our findings are discussed in the enclosed inspection report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Within the scope of this inspection, no items of noncompliance were disclosed.

In accordance with Section 2.790 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you (or your contractor) believe to be proprietary, it is necessary that you make a written application within 20 days to this office to withhold such information from public disclosure. Any such application must include a full statement of the reasons on the basis of which it is claimed that the information is proprietary, and should be prepared so that proprietary information identified in the application is contained in a separate part of the document. If we do not hear from you in this regard within the specified period, the report will be placed in the Public Document Room.

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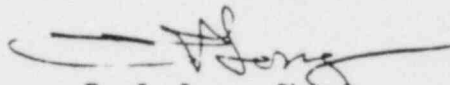
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Tennessee Valley Authority

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Should you have any questions concerning this letter, we will be glad to discuss them with you.

Sincerely,



F. J. Long, Chief
Reactor Operations and
Nuclear Support Branch

Enclosure: Inspection Report No.
50-327/78-28

cc w/encl:

Mr. J. E. Gilleland
Assistant Manager of Power
830 Power Building
Chattanooga, Tennessee 37401

Mr. G. G. Stack, Project Manager
Sequoyah Nuclear Plant
P. O. Box 2000
Daisy, Tennessee 37319

Mr. J. M. Ballentine
Plant Superintendent
Sequoyah Nuclear Plant
P. O. Box 2000
Daisy, Tennessee 37319

Mr. J. F. Cox
400 Commerce Street
W9D214
Knoxville, Tennessee 37902



UNITED STATES
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101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Report No.: 50-327/78-28

Docket No.: 50-327

License No.: CPPR-72

Licensee: Tennessee Valley Authority
830 Power Building
Chattanooga, Tennessee 37401

Facility Name: Sequoyah Unit 1

Inspection at: Sequoyah site, Daisy, Tennessee

Inspection conducted: September 13-15, 1978

Inspector: T. J. Donat

Approved by: _____

R. D. Martin
R. D. Martin, Chief
Nuclear Support Section No. 1
Reactor Operations and Nuclear Support Branch

10/12/78
Date

Inspection Summary

Inspection on September 13-15, 1978 (Report No. 50-327/78-28)

Areas Inspected: Routine, unannounced inspection relating to the followup on previous unresolved items, witnessing the performance of preoperational tests, verification of preoperational test prerequisites, review of preoperational test procedures, and a facility tour. The inspection involved thirty hours onsite by one NRC inspector.

Results: Within the areas inspected, no items of noncompliance or deviations were identified.

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DETAILS I

Prepared by:

T. J. Donat
 T. J. Donat, Reactor Inspector
 Nuclear Support Section No. 1
 Reactor Operations and Nuclear Support Branch

10/12/78
 Date

Dates of Inspection: September 13-15, 1978

Reviewed by:

R. D. Martin
 R. D. Martin, Chief
 Nuclear Support Section No. 1
 Reactor Operations and Nuclear Support Branch

10/12/78
 Date

1. Individuals ContactedTennessee Valley Authority

- *J. M. Ballentine, Plant Superintendent
- *W. F. Popp, Assistant Plant Superintendent
- *W. E. Andrews, Supervisor Quality Assurance Department
- *G. W. Killion, Supervisor Quality Assurance Operations Section
- *E. A. Condon, Supervisor Preoperational Test Section
- S. M. Franks, Nuclear Engineer
- C. N. Guhne, Electrical Engineer
- J. O. Vantrease, Mechanical Engineer
- W. M. Halley, Nuclear Engineer
- R. M. Mooney, Mechanical Engineer
- J. A. Holland, Mechanical Engineer
- R. H. Smith, Electrical Engineer
- N. B. Le, Electrical Engineer
- F. M. Siler, Instrumentation Engineer

*Denotes those present at Exit Interview.

2. Licensee Action on Previous Inspection Findings

Not inspected.

3. Unresolved Items

None

4. Exit Interview

The inspector met with Mr. J. M. Ballentine and his staff at the conclusion of the inspection on September 15, 1978. The inspector

summarized, as reported in the following paragraphs, the purpose and findings of the inspection. Within the areas inspected no items of noncompliance or deviations were identified.

5. Inspector Identified Item From Previous Inspections

- a. In IE Report 50-327/77-20, Details I.5, it was requested that the licensee evaluate system vibration - specifically on pumps, motors, piping restraints, snubbers, and check valves - when the Emergency Core Cooling Systems were being operated during the preoperational test program. Specific tests which did not monitor the components for excessive vibration included W-6.1A1, W-6.1A2, W-6.1A3, W-6.1B and W-6.1D. The inspector has reviewed test procedures W-6.1A1, W-6.1B, W-6.1D, and W-6.1E and has verified that the revised procedures do contain steps requiring observing the system components for excessive vibration when operating and that the procedures do measure valve operating time when the valves are operated against the maximum expected differential pressure. The inspector has no further comments on these procedures and will review W-6.1A2 and W-6.1A3 when they have been revised.
- b. In IE Report 50-327/78-04, Details I.5, the inspector noted that in preoperational test W-6.2, the Upper Head Injection Hydraulic Isolation Valve closing time was specified as 4.0 ± 0.2 sec while the FSAR in Table 6.3-1 states a time of 4 sec. It was also noted that the valve closing operation was not being performed with the maximum expected differential pressure across the valve. The inspector has reviewed Revision 0 of W-6.2 dated September 15, 1978, and found that a separate section has been added to perform a blowdown of the accumulators into the vessel with the accumulator at design pressure and the vessel at atmospheric which constitutes the maximum expected differential pressure. The hydraulic isolation valve closure time is measured during the blowdown test as well as earlier in the procedure when there was no differential pressure across the valve and where a closure time of 3.5 ± 0.05 seconds is obtained by adjusting the actuator if necessary. Also FSAR Table 6.3-1 was changed to state that the 4 sec closure time of the UHI isolation valve is only an approximate value. Based on the revised procedure and FSAR revision the inspector considered this item closed.
- c. In IE Report 50-327/78-04, Details I.6 pertained to ECCS pumps being lined up for recirculation instead of the normal accident condition lineup during safety injection system integrated

testing. A review was made of TVA-13B(2) Rev. 0 Chg. 1 which incorporates a section to repeat the loss of offsite power portion of the test except that now the ECCS pumps will be lined up for normal operation instead of being in the recirculation lineup. The inspector reviewed the added test section and has no further comments on the procedure and considers this item closed.

- d. In IE Report 50-327/78-11, Details I.6.a pertained to test procedures TVA-9A and 9C in that acceptance criteria did not clearly reference either specific steps in the test procedures or successful completion of data sheets. It was also noted that the scope of the HEPA filter testing in these procedures should be better defined by referring to specific sections of TI-9. The inspector reviewed Rev. 0 to TVA-9C dated May 19, 1978, and Change 1 to TVA-9A (Interim) dated July 5, 1978, and noted that in each, the acceptance criteria now references either a completed data sheet and/or a specific test step and that specific sections of TI-9 were being referenced for use. The inspector considers this item closed.
- e. In IE Report 50-327/78-17, Details I.6.b.1 identified that the UHI system tests did not contain any provision to monitor the vibration of the system during operation. The inspector reviewed test W-6.2, "Upper Head Injection", and noted that each subsection of the test, including the normal pressure blowdown section, contained a signoff step that a walk down of the system had been completed while monitoring for excessive vibration. This item is considered closed.

6. Preoperational Test Witnessing

- a. While at the site the inspector witnessed the performance of preoperational test W-6.1A1, "Integrated Flow Test" by the TVA Sequoyah test section personnel. Prior to the conduct of the test the inspector verified that a current copy of the procedure was stamped as the "Official Copy" and it was the only copy in which verification signatures were made. The following were also verified prior to the test: (1) that a complete and up-to-date set of drawings as listed in the official copy of the procedure accompanied the test procedure, (2) that the portions of the other Safety Injection System Preoperation Tests (W-6.1C, W-3.3, W-6.1D, and W-6.1E) required by the Prerequisite List had been completed, (3) that the reactor vessel head and internals had been removed, the refueling seal had been installed and the water level had been established at the vessel flange, and (4) that

provisions had been made to remove water from the refueling cavity. The original attempt to perform the test occurred between 10:00 p.m. on September 13, 1978, and 2:00 a.m. on September 14, 1978. The test was aborted when Centrifugal Charging Pump 1B-B oil pump failed to start due to an improper lineup. After draining the refueling cavity and refilling the RWST, the test was successfully performed. The inspector has no comments on either the test prerequisites or the conduct of the test.

- b. The inspector also verified that the most current revision and changes to preoperational test TVA-20B (Component Cooling System Test) were being used in the official copy and that the official test drawing package contained the most up-to-date drawings which had been marked showing turnover boundaries and which had Construction, Engineering Design, and Power Production signatures signifying that the drawings show the as-built system configuration. A similar review of the official copy of the test procedure and test drawing package was performed on test TVA-13B(1), "Onsite Power Distribution Test - Diesel Load Sequencing". The inspector had no comments on the manner in which either test was being prepared for.

7. Preoperational Test Procedure Review

The following Preoperational Test Procedures were reviewed for conformance to Regulatory Guide 1.68, FSAR Sections 6.2.4.2, 6.2.4.4, 7.7.1.7, 7.7.1.8, 6.6.4, and 8.3.1, Table 14.1, and the FSAR's Proposed Technical Specifications:

TVA-6 - "Air Return Fans" - Rev. 0, Chg. 1
TVA-41 - "Containment Isolation System" - Rev. 1
W-10.2 - "Automatic Steam Generator Water Level Control System" - Rev. 0
W-10.5 - "Automatic Steam Dump Control System" - Rev. 0
TVA-13B(1) - On Site Power Distribution System (Diesel Load Sequencing)
Test - Rev. 0

The inspector had no comments concerning preoperational tests TVA-6, W-10.2, and W-10.5. The inspector noted that there were several inconsistencies in prerequisite sections 2.1, "Construction Prerequisite", and 2.2, "Power Production Prerequisites" and section 5.0, "Test Instructions". This was brought to the attention of the Test Engineer who arranged to have the cross references between the sections corrected. The inspector has no comments on the modified procedure.

During the review of Preop Test TVA-13B(1), the inspector noted that the test acceptance criteria allowed for load sequence times in excess of those listed in the FSAR Table 8.3-3. When this was brought to the attention of the Sequoyah Nuclear Plant Preoperational Test Section Personnel, they stated that they considered these FSAR values as nominal rather than as limiting values. The NRC inspector stated that unless indicated differently in the FSAR, since these times are related to engineered safety features of the Sequoyah Nuclear Plant, they should be considered as limiting values. Sequoyah Nuclear Plant management and TVA Engineering Design personnel indicated that they understood the reason for the inspector's position and would pursue an FSAR change to Table 8.3-3 to specify either a tolerance for each load sequence time or a separate band for each load sequence time. The inspector considers this an open item which he will review when the FSAR change is proposed. (327/78-28-01)

8. Plant Tour

The inspector toured portions of the Unit 1 and 2 auxiliary building, the control building, and the Unit 1 reactor building. During the tour of the Unit 1 reactor building the inspector noted a large piece of plastic floating in the reactor cavity which the Shift Engineer had removed since there was a possibility it could have interfered with testing scheduled for later during that shift. In general good housekeeping and plant cleanliness were observed and no deficiencies were identified.