



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION II  
101 MARIETTA ST., N.W., SUITE 3100  
ATLANTA, GEORGIA 30303

Report Nos. 50-390/80-26 and 50-391/80-20

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

Facility Name: Watts Bar

License Nos. CPPR-91 and CPPR-92

Inspection at Watts Bar Nuclear Plant near Spring City, TN

Inspector: C. Julian for 9/30/80  
J. A. McDonald Date Signed

Approved by: HC Dance 9/30/80  
H. C. Dance, Section Chief, RONS Branch Date Signed

SUMMARY

Inspection on August 1-31, 1980

Areas Inspected

This routine, announced inspection involved 12 inspector-hours on site in the areas of preoperational test procedure review and plant tour.

Results

Of the two areas inspected, no apparent items of noncompliance or deviations were identified in one area; one apparent deviation was found in one area (Deviation - failure to provide test acceptance criteria, Paragraph 5.a).

8012020441

## DETAILS

### 1. Persons Contacted

#### Licensee Employees

- C. Mason, Acting Power Plant Superintendent
- \*J. Cross, Results Section Supervisor
- \*E. Ennis, Acting Assistant Power Plant Superintendent
- \*M. Jones, Preop Test Section Supervisor
- \*B. Willis, Quality Assurance Supervisor

\*Attended exit interview

2. The inspection scope and findings were summarized on August 15, 1980, with those persons indicated in Paragraph 1 above. The Licensee acknowledged the findings and stated that commitment dates for resolution of the open items would be provided two weeks after the exit interview.

### 3. Licensee Action on Previous Inspection Findings

Not inspected.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

### 5. Preoperational Test Procedural Review

The inspector continued discussion with site personnel of the adequacy of the Upper Head Injection (UHI) system test W-10.8, the ability to sample the system, and the resolution of spent fuel rack nonconformances based upon results of dimensional checks and drag tests performed under W-6.2B. Findings were acceptable except as follows:

- a. TVA letter A27 800321 019 dated March 21, 1980, provided the basis for not performing the high pressure blowdown portion of the UHI system test at Watts Bar Units 1 and 2 and Sequoyah Unit 2 based upon the performance of the high pressure blowdown test at Sequoyah Unit 1, which was designed to have virtually identical construction of this system. The water level setpoint for closure of UHI system isolation valves was to be utilized from the Sequoyah Unit 1 test as well as blowdown acceptance criteria to demonstrate hydraulic equivalency between Sequoyah Unit 1 and the other units.

Test personnel were required by the FSAR Section 14.2.3.1 to have acceptance criteria for the tests they perform; however, the Watts Bar

Preoperational Test Section performed the modified W10.8 without the test acceptance criteria or utilization of the Sequoyah Unit 1 water level setpoint as committed to the Commission. The failure to conduct this test in accordance with commitments to the Commission constitutes a deviation (50-390/80-26-01). In response to this item the Licensee should also discuss whether or not the performance of W-10.8 at Sequoyah Unit 1 verified the high pressure blowdown closing times of UHI system isolation valves and whether or not the water level setpoint established at Sequoyah Unit 1 is transferable to the Watts Bar configuration.

- b. The corrective action for out of specification timed closure of the UHI isolation valves FCV-87-21 through 24 during a low pressure blowdown (Step 5.5.34 of W-10.8, Upper Head Injection) is to reset the stroke times under no flow conditions (Steps 5.3.3 through 5.5.3.9). It appears this resetting of the valves should be retested under low pressure blowdown conditions to demonstrate that the valve performance was not being affected by differential pressure. Until the licensee reviews this concern and makes any necessary procedural changes and retesting, this item is open (50-390/80-26-02, 50-391/80-20-01).
- c. The precise valve closure times for UHI hydraulic isolation valves FCV-87-21 through -24 ( $3.5 + 0.05$  seconds) is ascertained by instrumentation connected to the stem mounted closed limit switch. This switch is assumed to operate at a valve position of 100% closed. The actual accuracy of this setting and the direct effect it has on valve stroke time should be determined, as one test acceptance criteria was that the hydraulic isolation valve closing time be identical to Sequoyah Unit 1. Until the licensee reviews the accuracy of valve stroke time determination and makes any appropriate revisions, this item is open (50-390/80-26-03 and 50-391/80-20-02).
- d. Step 5.3.2.8 of W-10.8, Upper Head Injection, does not provide clear guidance in determining when the flow control valve accumulator has the correct hydraulic/nitrogen charge. It also does not describe the means of determining the difference between this normal condition and the alarm condition for too much hydraulic loading. The licensee believes that the resolution to testing difficulties with the weight switch will be by design change. Until the existing test is modified to thoroughly address the testing of the accumulator weight switch or its replacement, this item is open (50-390/80-26-04, 50-391/80-20-03).
- e. The Unit 1 Upper Head Injection system surge tank sample line terminates approximately ten (10) inches above the floor and one inch from an electrical conduit. It would appear difficult, at best, to draw a pressurized (1300 psi) sample of potentially contaminated water from this location. Design Change Request 266 has been initiated to correct this situation. Until the licensee establishes adequate means of sampling the UHI surge tank, this item is open (50-390/80-26-05, 50-391/80-20-04).

f. As a result of nonconforming construction of numerous cells within the spent fuel racks, the licensee has developed usage restrictions intended to preclude the potential for damage to nuclear fuel which is scheduled for further reactor use. These restrictions are:

- (1) Cells out of verticality which meet the drag test criteria with a standard size fuel dummy, yet do not meet the drag criteria for an oversize dummy, will be restricted to the storage of spent fuel which will not be reinstalled in the reactor. These cells may have temporary plugs installed.
- (2) Cells out of verticality which do not meet either the oversize dummy drag test criteria or the standard dummy test criteria will be permanently plugged.
- (3) Cells out of levelness which pass an insertion test will be restricted to long-term storage and may have temporary plugs installed.

Until the licensee revises his procedures to appropriately address spent fuel rack usage restrictions, this item is open (50-390/80-26-06, 50-391/80-20-05). The licensee plans to have these revisions complete by September, 1980.



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ATLANTA, GEORGIA 30303

NOV 20 1980

In Reply Refer To:  
RII:CJ  
50-390/80-26  
50-391/80-20

Tennessee Valley Authority  
ATTN: H. G. Parris  
Manager of Power  
500A Chestnut Street Tower II  
Chattanooga, TN 37401

Gentlemen:

Thank you for your letter of October 27, 1980, informing us of steps you have taken to correct the item of deviation concerning activities under NRC Construction Permit No. CPPR-91 brought to your attention in our letter of September 30, 1980. We will examine your corrective actions and plans during subsequent inspections.

We appreciate your cooperation with us.

Sincerely,

*R.C. Lewis*  
R. C. Lewis, Acting Chief  
Reactor Operations and Nuclear  
Support Branch

cc: C. C. Mason, Acting Plant  
Superintendent  
J. E. Wilkins, Project  
Manager  
J. F. Cox, Supervisor,  
Nuclear Licensing  
Section  
D. P. Ormsby, Project  
Engineer  
H. N. Culver, Nuclear  
Safety Review Staff

801220408

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401  
400 Chestnut Street Tower II

October 27, 1980 P 2: 21

Mr. James P. O'Reilly, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Region II - Suite 3100  
101 Marietta Street  
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

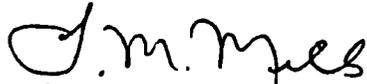
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - NRC INSPECTION REPORT 50-390/80-26  
AND 50-391/80-20 - RESPONSE TO DEVIATION 50-390/80-26-01

The subject inspection report dated September 30, 1980, cited TVA with one  
deviation concerning UHI preoperational testing. Enclosed is TVA's  
response.

If you have any questions, please get in touch with D. L. Lambert at  
FTS 857-2581.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



L. M. Mills, Manager  
Nuclear Regulation and Safety

Enclosure

cc: Mr. Victor Stello, Director (Enclosure)  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

~~8012020412~~

OFFICIAL COPY

ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2  
RESPONSE TO DEVIATION 50-390/80-26-01

Deviation 50-390/80-26-01

A letter from L. M. Mills to L. S. Rubenstein dated March 21, 1980, committed to the provision of test acceptance criteria for evaluating the low pressure blowdown portion of the Upper Head Injection (UHI) system test at Watts Bar with respect to the Sequoyah unit 1 performance. Also, the Sequoyah unit 1 water level setpoint was committed to be utilized at Watts Bar.

Contrary to the above, as of July 6, 1980, the UHI system low pressure blowdown test was performed without provisions of the test acceptance criteria to the personnel performing the test and without utilization of the Sequoyah unit 1 water level setpoint.

Corrective Actions

Acceptance criteria will be provided by Westinghouse to TVA for evaluating the Watts Bar unit 1 low-pressure blowdown portion of the upper head injection (UHI) system test. The UHI system test scoping document and test instruction will be revised to incorporate the additional acceptance criteria and utilize the Sequoyah unit 1 water level setpoint. An evaluation of the data collected during the low-pressure blowdown for unit 1 at Watts Bar will be conducted using the revised test criteria and a retest conducted if any criteria are not met.

The implications of this deviation relating to the quality of the overall preoperational test program have been evaluated. It has been concluded that this incident does not demonstrate a generic weakness in the test program because of the unusual circumstances surrounding this deviation.

The scope of testing for the UHI system test underwent a major revision by deleting the high-pressure blowdown test just prior to the planned start of testing. Even though the Engineering Design (EN DES) test representative was aware that Westinghouse still had to provide acceptance criteria for the low-pressure blowdown test, he approved a change to the test instruction which deleted the high-pressure blowdown test and contained only general acceptance criteria. The EN DES test representative felt that specific acceptance criteria would be available by the time the preoperational test results were received for his review. The Nuclear Power (NUC PR) test director initiated the change to the test instruction without ensuring that all required specific acceptance criteria were addressed. The approval of the change was an error in judgment on the part of the EN DES test representative. The NUC PR test director and other personnel involved in review and approval of preoperational test documents who may have identified the procedural error were unaware of the commitment by Westinghouse to supply the acceptance criteria.

#### Corrective Actions To Avoid Further Deviations

To verify that the deviation is not indicative of a generic procedural problem, a sample of preoperational test instructions will be reviewed by EN DES to determine that no inconsistencies exist between commitments and test instruction requirements. The EN DES procedures for preoperational testing have been reviewed and clearly require that acceptance criteria be available prior to EN DES approval of

preoperational test instructions. A special precaution will be added to EN DES EP-6.01 to further ensure that acceptance criteria have been identified to the test director prior to test performance. A review of acceptance criteria for preoperational test scoping documents and test instructions for incompleted tests will be performed by NUC PR to ensure that specific acceptance criteria are defined.

Date Corrective Actions Will Be Completed

All corrective actions will be completed by December 6, 1980.



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SEP 3 0 1980

In Reply Refer To:  
RII:JAM  
50-390/80-26  
50-391/80-20

Tennessee Valley Authority  
ATTN: H. G. Parris  
Manager of Power  
500A Chestnut Street Tower II  
Chattanooga, TN 37401

Gentlemen:

This refers to the inspection conducted by J. A. McDonald of this office on August 1 through 31, 1980 of activities authorized by NRC Construction Permit Nos. CPPR-91 and CPPR-92 for the Watts Bar facility, and to the discussion of our findings held with E. R. Ennis 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.

During the inspection it was found that certain activities under your license appear to deviate from commitments to the Commission and have safety significance. This item is identified in the Notice of Deviation enclosed herewith as Appendix A. Please provide us in writing within 20 days of your receipt of this letter your comments including a description of corrective actions that have been or will be taken, corrective actions which will be taken to avoid further deviations, and the date corrective actions were or will be completed.

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.

~~8012020433~~

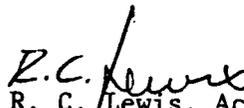
SEP 3 0 1980

Tennessee Valley Authority

-2-

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

Sincerely,

  
R. C. Lewis, Acting Chief  
Reactor Operations and Nuclear  
Support Branch

Enclosures:

1. Appendix A, Notice of Deviation
2. Inspection Report Nos. 50-390/80-26  
and 50-391/80-20

cc w/encl:

C. C. Mason, Acting Plant  
Superintendent  
J. E. Wilkins, Project Manager  
J. F. Cox, Supervisor, Nuclear  
Licensing Section  
D. P. Ormsby, Project Engineer  
H. N. Culver, Chief, Nuclear  
Safety Review Staff

APPENDIX A

NOTICE OF DEVIATION

Tennessee Valley Authority  
Watts Bar Nuclear Plant

License No. CPPR-91

Based on the NRC inspection conducted on August 1-31, 1980, certain of your activities appear to deviate from your commitments to the Commission as indicated below:

TVA Letter A27 800321 019 dated March 21, 1980, committed to the provision of test acceptance criteria for evaluating the low pressure blowdown portion of the Upper Head Injection (UHI) system test at Watts Bar with respect to the Sequoyah Unit 1 performance. Also, the Sequoyah Unit 1 Water level setpoint was committed to be utilized at Watts Bar.

Contrary to the above, as of July 6, 1980, the UHI system low pressure blowdown test was performed without provisions of the test acceptance criteria to the personnel performing the test and without utilization of the Sequoyah Unit 1 water level setpoint.

~~8012020436~~



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