



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

Report Nos. 50-390/80-30 and 50-391/80-23

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

Facility Name: Watts Bar Nuclear Facility

Docket Nos. 50-390 and 50-391

License Nos. CPPR-91 and CPPR-92

Inspection at Watts Bar site near Spring City, Tennessee

Inspectors: C. Julian for
 J. A. McDonald

11/20/80
 Date Signed

C. Julian for
 T. L. Heatherly

11/20/80
 Date Signed

Approved by: H. C. Dance
 H. C. Dance, Section Chief, RONS Branch

11/20/80
 Date Signed

SUMMARY

Inspection on September 1 - October 17, 1980

Areas Inspected

This routine, announced inspection involved 116 resident inspector-hours on site in the areas of licensee action on previous findings, licensee identified items, independent inspection, and special nuclear material license amendment.

Results

Of the four areas inspected, no items of noncompliance or deviations were identified in two areas; one item of noncompliance was found in two areas collectively. (Infraction - failure to report significant deficiencies - paragraph 3.a and 6).

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DETAILS

1. Persons Contacted

Licensee Employees

- C. C. Mason, Acting Plant Superintendent
- *E. R. Ennis, Acting Assistant Plant Superintendent
- J. Ballard, Mechanical Engineer
- *J. E. Cross, Supervisor, Results Section
- E. E. Gibbs, Supervisor, Outage Group
- L. Johnson, Supervisor, Mechanical Engineering Unit B
- *S. Johnson, Assistant Construction Engineer, Mechanical
- *M. K. Jones, Supervisor, Preoperational Test Section

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on October 17, 1980 with those persons indicated in Paragraph 1 above. The licensee acknowledged the findings and stated that commitments for resolution of open items and unresolved items would be made by October 31, 1980. The Preoperational Test Supervisor commented that there was no requirement for performance of the oversize dummy fuel assembly drag test which the inspector had presented as an example of noncompliance (see paragraph 6.a.c). He stated that the oversize dummy drag test was performed only to gain information which could support the acceptability of cells which were out of vertical tolerance. He also believed that the spent fuel rack manufacturer had been required to check cell clearance only with a go no-go gage and not by an oversize dummy drag test. The inspector reviewed Section 16.0 of TVA Specification 3344 and found it required the contractor to perform the oversize dummy drag test on all cells. Furthermore, Section 6.7 of Division of Construction Quality Control Procedure 4.22 required the site to perform a dummy fuel drag test, and referenced the TVA Specification 3344 which did specify the oversize dummy. The inspector stated that regardless of how the "official" nature of the test was perceived, the resolution and reporting of nonconforming equipment performance is required. Personnel supervising the drag tests did recognize that some cells did not meet the acceptance criteria. Therefore, the inspector's finding was not changed.

3. Licensee Action on Previous Inspection Findings

- a. (closed) Unresolved Item (50-390/80-21-08): Valve construction certifications do not meet procurement specifications. A review of progress of this items revealed that the licensee had known for approximately two months that the two inspector-identified cases were part of a

generic problem which encompassed hundreds of valves installed in systems including the Safety Injection System. The recognition of this significant deficiency was not reported to the Commission as required by 10 CFR 50.55(e). This example combined with similar examples in paragraph 6 constitutes an item of noncompliance (50-390/80-30-01, 50-391/80-23-01).

- b. (Closed) Infraction (50-390/80-13-02): Failure to follow drawing control procedures. The inspector reviewed the effectiveness of the retraining and reinstruction conducted in these areas. Established procedures are now being followed. However, it was determined that administrative controls for tracking Field Change Request (FCR) status from initiation to completion were not adequate. Responsibility for marking and maintaining FCR status on current print room master drawings was not specifically addressed in Construction Quality Control instructions. There was no requirement to mark FCR changes to drawings in a timely manner. Requirements for highlighting FCR data on drawings was addressed for FCR submittal to Engineering Design; however, highlighting was not required when marking the on-site print room master drawings. Until FCR control is reviewed and appropriate procedural revisions made, this item is open (50-390/80-30-02, 50-391/80-23-02).
- c. (Closed) Open Item (50-390/78-29-01): Testing of diesel generator fuel oil pumps per ASME Section XI. Amendment 41 to the FSAR removes this equipment from the scope of ASME testing.
- d. (Closed) Open Item (50-390/79-29-04): Starting time for Chemical and Volume Control System (CVCS) pumps after safety injection. Amendment 41 to the FSAR has clarified the nominal starting time so as to not conflict with the information provided for the safety injection sequence.
- e. (Closed) Open Item (50-390/79-46-01): Incorporation of ASME Section XI testing of valve operability in surveillance instruction. The four valves noted have been removed from the draft inservice inspection program. The total program, including these four valves, will be inspected by NRC prior to approval of the program.
- f. (Closed) Open Item (50-390/80-13-04): Incorporation of relief valves in ASME Section XI surveillance instructions. The current procedures address all safety-related relief valves. Those that are not incorporated in the ASME Section XI program are intended to be annotated accordingly, but left in the instruction.
- g. (Closed) Open Item (50-390/80-13-10): No requirement for issuance of legible prints. WBNP-QCI-1.1 has been revised to provide appropriate requirements for the issuance of legible prints from the print room.
- h. (Closed) Open Item (50-391/80-15-04): W-10.7A, Containment Spray System updating. The licensee has issued Change 1 for Unit 2 to properly control the system valves added by the design change designated ECN 2162.

- i. (Closed) Open Item (50-390/80-26-06, 391/80-20-05): Administrative control of new fuel storage in spent fuel racks. Technical Instruction 1 has been revised to incorporate the current guidance on spent fuel rack storage restrictions.
- j. (Open) Infraction (50-390/80-16-01): Failure to follow procedures. One of the four examples of this noncompliance was reviewed. It was found that a procedural revision of WBNP-QCP-1.8 had been put into effect and did identify record retention periods. The remainder of the 50-390/80-16-01 is still open. Furthermore, Quality Control Instruction (QCI) 1.8, "Quality Assurance Records", Section 4.4, stated that Duration of Construction (DOC) records were to be retained for the duration of construction activities and were not required to be transferred to the Division of Nuclear Power. Attachment "B" to QCI 1.8, "Typical Non Permanent Quality Assurance Records" stated that Welding Personnel Qualification Records, the Inspection Report for Stored Items Records, and the Special Tool Calibration Records are all non-permanent (DOC) records. Attachment 2 of the Watts Bar Standard Practice Manual, Section 3.2.1, "Typical Index of Construction and EN DES Records to be Indexed and Stored in Lifetime Records Storage Facility", required these records to be transferred and stored in the Lifetime Records Storage Facility. Until the licensee revises procedures to correctly and consistently identify requirements for transfer of and retention times for DOC records, this item is open (50-390/80-30-03).

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve noncompliance or deviations. New unresolved items identified during this inspection are discussed in paragraphs 5.a and 5.b.

5. Independent Inspection Effort

During plant tours and discussions with licensee personnel, the following problems were identified:

- a. Kerotest drawings TVD-D-9954X03-(1) and TVD-D-10080-1, Note 3 stated that 3/4" and 1/2" series 1513# Y-type globe valves will weigh approximately 13 lbs. \pm 106%. TVA drawing 47B001-2, Rev. 2, "Mechanical Branch Valve Connection Seismic Support," stated maximum valve weights for piping will be as follows:

1/2" pipe - 12.0 lbs.
3/4" pipe - 13.5 lbs.

The inspector requested that a sample of the above size ASME Code Class I and II valves be weighed. Twenty-one valves of the sixty valves weighed were found to be overweight (1 oz. to 1.75 lbs) with respect to drawing 47B001-2, Revision 2, specifications. Until the licensee evaluates the conflict between seismic support design and

valve procurement, this item is unresolved (50-390/80-30-04, 50-391/80-23-03).

- b. Nonconforming Condition Reports (NCR) SQN EEB-8018 and -8019 were determined to be significant by Engineering Design (EN DES) and appeared to generically apply to Watts Bar. As of October 16, 1980, no formal transmittal from EN DES had been sent to the Watts Bar project, nor had the project initiated any action to resolve the issues brought out in the NCRs. Until the licensee investigates the generic implications of these NCR's and takes appropriate corrective action, this item is unresolved (50-390/80-30-05, 50-391/80-23-04).
- c. Quality Control Procedure 3.1 "Handling, Storage, and Maintenance of Permanent Electrical and Instrumentation Material", Section 6.3.2.8 required storage areas for Class IE Cable in the construction area to be identified by an appropriate sign bearing the words "EEU - Approved Cable Storage Area". Several areas on site, both inside and outside, are labeled "Storage Areas". These areas are in fact staging areas and have different storage requirements. Until the licensee correctly designates staging and storage areas or updates procedures to reflect actual activities, this item is open (50-390/80-30-06, 50-391/80-23-05).

6. Special Nuclear Material License Amendment

The licensee had applied for Amendment 2 to Special Nuclear Material License 1861 which would allow storage of new nuclear fuel in spent fuel storage racks, beyond that allowed by Amendment 1. As the inspector reviewed activities in progress it became readily apparent that some incomplete and/or inaccurate information had been acquired during the inspection which supported Amendment 1 (see detail 7 of report 50-390/80-21, 50-391/80-15). As of September 22, 1980 the NRC established that resolution of these issues was prerequisite to issuance of Amendment 2.

After further review of fuel storage authorized by Amendment 1 the licensee and the inspector concurred that storage of new fuel in locations A-31, F-40, and G-39 of rack #20 was not acceptable. Subsequently the licensee removed the new fuel from the two unacceptable locations in use and stored it in locations acceptable to the licensee, NRC and the fuel supplier. The inspector's review of this area is not complete; however, the following interim finding has been identified. Significant deficiencies in spent fuel rack construction or performance were not reported to the NRC as required by 10 CFR 50.55(e):

- a. Over several months in 1979 and 1980 the licensee identified that approximately one third of the 1312 individual spent fuel rack cells did not meet the fuel manufacturers acceptance criteria for verticality. A greater fraction did not meet the licensee specified acceptance criteria. An extensive evaluation was conducted in an effort to support relaxation of the acceptance criteria.

- b. Approximately forty spent fuel rack cells did not meet the acceptance criteria for levelness of the cell base and required extensive repair to establish their adequacy.
- c. Approximately eighty spent fuel rack cells failed the performance specification for resistance to the insertion and withdrawal of an oversized dummy fuel assembly and will require extensive evaluation or repair to establish their adequacy.

These examples of failure to report three spent fuel rack significant deficiencies to the Commission combined with another example in paragraph 3.a constitute an item of noncompliance (50-390/80-30-01 50-391/80-23-01).

7. Licensee Identified Item

On October 16, 1980 the licensee reported to the resident inspector that a sealed neutron source had been received on site which contained 58 millicuries of Americium-241. This exceeded the Byproduct Materials License limit of 50 millicuries. With the concurrence of the Regional Office the licensee shipped the source to Sequoyah Nuclear Plant on October 21, 1980. Administrative controls over source receipt were upgraded and concerns over TVA actions during this particular event are closed. Though not a contributing factor to this event, it was noted that positive control of the quantity of isotope ordered was not established. The licensee committed to revisions to procurement practices and until they are implemented this item is open (50-390/80-30-07, 50-391/80-23-06).

The apparent failure of the neutron source supplier to ship the licensee a source within the quantity allowed by the license is a matter referred to the Regional Office.