



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

**REGION II
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April 19, 2000

Tennessee Valley Authority
ATTN: Mr. J. A. Scalice
Chief Nuclear Officer and
Executive Vice President
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: NRC INTEGRATED INSPECTION REPORT NO. 50-390/00-02 AND
50-391/00-02

Dear Mr. Scalice:

This refers to the inspection conducted on March 5 through April 1, 2000, at the Watts Bar facility. The enclosed report presents the results of this inspection.

During the inspection period, your conduct of activities at the Watts Bar facility was generally characterized by safety-conscious operations, sound engineering and maintenance practices, and careful radiological work controls.

Based on the results of this inspection, the NRC has determined that a violation of NRC requirements occurred. This violation is being treated as a non-cited violation (NCV), consistent with Appendix C of the Enforcement Policy. This NCV is described in the subject inspection report. If you contest this violation or the severity level of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator, Region II, and the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and any response you choose to make will be placed in the NRC Public Document Room.

Should you have any questions concerning this letter, please contact us.

Sincerely,

/RA/

Paul E. Fredrickson, Chief
Reactor Projects Branch 6
Division of Reactor Projects

Docket Nos. 50-390, 50-391
License No. NPF-90 and Construction
Permit No. CPPR-92

Enclosure: NRC Inspection Report

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-390, 50-391
License Nos: NPF-90 and Construction Permit CPPR-92

Report Nos: 50-390/00-02, 50-391/00-02

Licensee: Tennessee Valley Authority

Facility: Watts Bar, Units 1 and 2

Location: 1260 Nuclear Plant Road
Spring City TN 37381

Dates: March 5 through April 1, 2000

Inspectors: P. Van Doorn, Senior Resident Inspector
D. Rich, Resident Inspector
G. Salyers, Emergency Preparedness Inspector
(Section P6.1)

Approved by: P. E. Fredrickson, Chief
Reactor Projects Branch 6
Division of Reactor Projects

Enclosure

EXECUTIVE SUMMARY

Watts Bar, Units 1 and 2 NRC Inspection Report 50-390/00-02, 50-391/00-02

This integrated inspection included aspects of licensee operations, maintenance, engineering, and plant support. The report covers a four-week period of resident inspection and regional emergency preparedness (EP) inspection.

Operations

- The conduct of Operations was professional and safety conscious. Requirements were met for control room conduct and also other areas reviewed such as turnovers, tagouts, documentation, staffing, and assistant unit operator activities (Section O1.1).
- The licensee continued to implement a strong corrective action process exhibiting a questioning attitude and conducting thorough reviews with strong management oversight. Corrective action plans were typically thorough. A PORC review was thorough (Section O7.1).

Maintenance

- Maintenance and surveillance activities observed were adequately performed. Maintenance personnel were knowledgeable and carefully followed procedures to resolve plant equipment and component problems. Work performed was typically well documented (Section M1.1).

Engineering

- Engineering activities reviewed were thorough and technically viable. Plant equipment problems were being addressed commensurate with plant safety (Section E1.1).

Plant Support

- Radiological controls were adequate. Radiological areas were properly posted and high radiation areas were labeled and locked. Personnel were attentive and followed requirements. The licensee provided thorough management oversight of chemistry results, and regulatory limits reviewed were met (Section R1.1).
- A non-cited violation was identified for multiple failures to staff the on-shift technical craft position specified in TVA's Radiological Emergency Plan with personnel of the specified technical discipline (Section P6.1).
- Security personnel were attentive, followed requirements for access control, and problems were not identified with barriers and zones.(Section S1.1).

Report Details

Summary of Plant Status

Unit 1 began this inspection period operating in Mode 1 at 100 percent reactor power. Reactor power remained at 100 percent for the remainder of the inspection period.

Unit 2 remained in a suspended construction status.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (71707)

The inspectors conducted frequent inspections and reviews of ongoing plant operations. This included observation of routine control room (CR) crew activities, mid-shift briefings and turnovers; review of logs, standing and night orders, CR staffing, and tagouts; and observation of assistant unit operator (AUO) activities.

The conduct of Operations was professional and safety conscious. Requirements were met for CR conduct and also other areas reviewed such as turnovers, tagouts, documentation, staffing, and AUO activities.

O6 Operations Organization and Administration

O7.1 Licensee Self-Assessment Activities (40500)

The inspectors reviewed various self-assessment activities which included the following:

- Observation of Management Review Committee (MRC) meetings;
- Review of selected problem evaluation reports (PERs) for adequacy of corrective actions and implementation of procedural requirements;
- Review of PER initiations; and,
- Observation of one Plant Operations Review Committee (PORC) meeting.

The licensee continued to implement a strong corrective action process exhibiting a questioning attitude and conducting thorough reviews with strong management oversight. Corrective action plans were typically thorough. The PORC review was thorough.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments

a. Inspection Scope (62707, 61726)

The inspectors observed preplanned and emergent maintenance activities including all or portions of the following work orders (WOs) and surveillance instructions (SIs) and reviewed associated documentation:

- WO 99-016177-000, 1-MVOP-067-0134, Upper Containment Cooler Discharge Isolation Valve Limitorque Operator, Maintenance Action M1380V
- WO 99-017195-000, Train B Main Control Room Air Handling Unit Suction Damper 0-FCO-31-0011 Periodic Maintenance MPM 4098V
- WO 98-006859-000, 2B 480 Volt Board Room Chiller Compressor Low Pressure Control Calibration, SSD-2-IPS-31-1726-S
- WO 99-014557-000, Ensure Orientation of Installed Deflector Plate on 2-IPS-082-0326, DG Engine 2B1 High Crankcase Pressure
- WO 00-001365-000, Inspect DG Engine 2B1 Cooling Water Heat Exchanger, 2-HTX-082-0720B1
- OTI 83.01, Hydrogen Recombiner Yearly Heatup Test, Revision 1, Train B
- WO-00-005306-000, Troubleshoot and Repair 1B Hydrogen Recombiner/Controller, 1-HTR-83-2
- 99-009043-000, Repair/Replace 1A-A Charging Pump Room Cooler Squirrel-Cage Fan Due To Weld Cracks
- 0-SI-215-43-A, Diesel Generator 2A-A Battery 18 Month Service Test And Battery Charger Test, Revision 6

b. Observations and Findings

The inspectors observed the activities identified above and determined that personnel involved in the work were qualified and knowledgeable in the tasks being performed. The work instructions were observed being followed, and problems, if encountered during the performance of the work, were properly dispositioned. Work performed was also typically well documented. Where appropriate, radiation control measures were in place.

c. Conclusions

Maintenance and surveillance activities observed were adequately performed. Maintenance personnel were knowledgeable and carefully followed procedures to resolve plant equipment and component problems. Work performed was typically well documented.

M8 Miscellaneous Maintenance Issues

- M8.1 (Closed) Licensee Event Report 50-390/2000-01 and Unresolved Item 50-390/00-01-01: Failure to perform Response Time Testing (RTT) as required by Technical Specification (TS) 3.3.2 on the train B main turbine trip solenoid valve. Notice of Enforcement Discretion number 00-6-004 was granted and an exigent TS change was issued by the NRC on March 22, 2000, which provided a one-time exception to the RTT requirement of valve 1-FSV-47-27 until the next main turbine shutdown (see IR 50-390/2000-01, Section M3.1).

The licensee performed an extent of condition analysis and found maintenance actions had been performed on some components such as relays and breakers without the required post-maintenance RTT. However, the licensee found that all components in this category had subsequently been response time tested with satisfactory results and that there were no operability issues identified. This issue is in the licensee's corrective action program as PER 00-004459-000, which includes actions to improve maintenance planning in this area. Failure to perform RTT on 1-FSV-47-27 constitutes a violation of minor significance and is not subject to formal enforcement action. This issue is closed.

III. Engineering

E1 Conduct of Engineering

- E1.1 General Observations (37551)

The inspectors observed Engineering support activities for PER evaluations, review of plant equipment problems and associated corrective action plans, and MRC and PORC meetings.

Engineering activities reviewed were thorough and technically viable. Plant equipment problems were being addressed commensurate with plant safety.

IV. Plant Support

R1 Radiological Protection and Chemistry (RP&C) Controls

- R1.1 General Comments (71750)

The inspectors routinely observed radiologically controlled areas to verify adequacy of access controls, locked areas, personnel monitoring, surveys, postings, and radiological

briefings. The inspectors also routinely reviewed primary and secondary chemistry results.

Radiological controls were adequate. Radiological areas were properly posted and high radiation areas were labeled and locked. Personnel were attentive and followed requirements. The licensee provided thorough management oversight of chemistry and results and regulatory limits reviewed were met.

P5 Staff Training and Qualification in EP

P5.1 EP On-Shift Staffing

a. Inspection Scope (82701)

This area was inspected to review the Emergency Preparedness Organization on-shift staffing commitment. Requirements applicable to this area are found in 10 CFR 50.47(b)(1) and Section IV.A of Appendix E to 10 CFR Part 50.

b. Observations and Findings

Tennessee Valley Authority's (TVA) Radiological Emergency Plan (REP), Appendix C (Watts Bar), Revision 51 to Figure 1-C, WBN TSC, OSC, and Control Room Staffing During Emergencies, requires one electrician, one I&C technician, one mechanical, and two mechanical maintenance craftsman to be on-shift at all times. A site Fix It Now (FIN) Team was established to meet the on-shift technical craft position requirements in Figure 1-C of the REP.

The licensee conducted a review of the Watts Bar's FIN Team maintenance staffing for the period of October 1, 1999 through December 31, 1999. The review determined that there were 920 man-shifts during this period (92 days times 2 shifts per day times 5 technicians per shift), and that there were 193 occurrences (man-shifts) in which one or more of the scheduled on-shift FIN Team members were absent. The review also determined the following: on 84 of the 193 occasions, the FIN Team vacancies were filled by technicians of the appropriate discipline; on 72 of the occurrences, the shift manager or the foreman filling the position was qualified in the same technical discipline as the vacancy; and on the remaining 37 occurrences, the substitute shift manager or foreman were not qualified in the appropriate technical discipline. Additionally, there were three separate occasions of short duration in which only four of the five FIN Team maintenance technician positions were filled. Based on this review, the licensee wrote PER 00-2571-000 to document and track the corrective actions associated with this issue.

10 CFR 50.34 (b)(6)(v), requires the licensee to have a Radiological Emergency Plan in accordance with the requirements of 10 CFR Part 50, Appendix E. Tennessee Valley Authority's (TVA) Radiological Emergency Plan (REP), Appendix C (Watts Bar), Revision 51 to Figure 1-C, WBN TSC, OSC, and Control Room Staffing During Emergencies, requires one electrician, one I&C technician, one mechanical, and two mechanical maintenance craftsman to be on-shift at all times.

Contrary to the above, between the period of October 1, 1999, and December 31, 1999, on 37 occasions, the substitute shift manager or foreman was not qualified for the technical craft position to which he was assigned. In addition, there were three separate occasions of short duration in which only four of the five FIN Team maintenance technician positions were filled. Consistent with the provisions in Section VII.B.1.a, of the NRC Enforcement Policy, this violation of Watts Bar's REP was identified as a non-cited violation, 50-390,391/00-02-01: Failure to Meet On-Shift Emergency Plan Technical Craft Staffing Requirements.

c. Conclusions

There were 37 instances between October 1, 1999 and December 31, 1999, in which the on-shift technical craft specified in TVA's REP, Appendix C (Watts Bar), Revision 51, to Figure 1-C, were not staffed with personnel of the specified technical discipline.

S1 Conduct of Security and Safeguards Activities

S1.1 General Observations (71750)

The inspectors routinely observed security activities for conformance to requirements which included protected area barriers, isolation zones, personnel access, and package inspections. Security personnel were attentive, followed requirements for access control, and problems were not identified with barriers and zones.

V. Management Meetings

X1 Exit Meeting Summary

The resident inspectors presented inspection findings and results to licensee management on March 31, 2000. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Beecken, Maintenance and Modifications Manager
 D. Boone, Radiological Control Manager
 L. Bryant, Assistant Plant Manager
 S. Casteel, Radiological and Chemistry Control Manager
 J. Cox, Training Manager
 L. Hartley, Maintenance Rule Coordinator
 M. King, Acting Chemistry Manager
 D. Kulisek, Operations Manager
 W. Lagergren, Plant Manager
 D. Nelson, Business and Work Performance Manager

P. Pace, Licensing and Industry Affairs Manager
 R. Purcell, Site Vice President
 J. Roden, Operations Superintendent
 S. Spencer, Site Nuclear Assurance Manager
 J. West, Assistant Plant Manager

NRC

P. Van Doorn, Senior Resident Inspector
 D. Rich, Resident Inspector

INSPECTION PROCEDURES USED

IP 37551	Onsite Engineering
IP 40500	Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
IP 61726	Surveillance Observations
IP 62707	Maintenance Observation
IP 71707	Plant Operations
IP 71750	Plant Support Activities
IP 82701	Operational Status Of The Emergency Preparedness Program

ITEMS OPENED AND CLOSED

Opened

50-390/391-00-02-01	NCV	Failure to Meet On-Shift Emergency Plan Technical Craft Staffing Requirements (Section P5.1).
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Closed

50-390/2000-01	LER	Response Time Testing of Train B Turbine Trip Solenoid Valve (Section M8.1).
50-390/00-01-01	URI	Failure to Perform Response Time Testing as Required (Section M8.1).
50-390/391-00-02-01	NCV	Failure to Meet On-Shift Emergency Plan Technical Craft Staffing Requirements (Section P5.1).