UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931

January 14, 2002

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: WATTS BAR NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT NOS. 50-390/01-04 AND 50-391/01-04

Dear Mr. Scalice:

On December 15, 2001, the NRC completed an inspection at your Watts Bar Nuclear Plant, Units 1 and 2. The enclosed report documents the inspection findings which were discussed on December 14, 2001, with Mr. L. Bryant and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, one finding that had potential safety significance greater than very low significance was identified. The associated deficiency was corrected and does not present an immediate safety concern.

Immediately following the terrorist attacks on the World Trade Center and the Pentagon, the NRC issued an advisory recommending that nuclear power plant licensees go to the highest level of security, and all promptly did so. With continued uncertainty about the possibility of additional terrorist activities, the Nation's nuclear power plants remain at the highest level of security and the NRC continues to monitor the situation. This advisory was followed by additional advisories, and although the specific actions are not releasable to the public, they generally include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with law enforcement and military authorities, and more limited access of personnel and vehicles to the sites. The NRC has conducted various audits of the Tennessee Valley Authority's response to these advisories and Watts Bar's ability to respond to terrorist attacks with the capabilities of the current design basis threat. From these audits, the NRC has concluded that the Watts Bar security program is adequate at this time.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS).

ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

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 50-390/01-04, 50-391/01-04
w/Attachment

cc w/encl: (See page 3)

cc w/encl:
Karl W. Singer
Senior Vice President
Nuclear Operations
Tennessee Valley Authority
Electronic Mail Distribution

Jon R. Rupert, Vice President (Acting)
Engineering and Technical Services
Tennessee Valley Authority
Electronic Mail Distribution

William R. Lagergren
Site Vice President
Watts Bar Nuclear Plant
Tennessee Valley Authority
Electronic Mail Distribution

General Counsel
Tennessee Valley Authority
Electronic Mail Distribution

Robert J. Adney, General Manager
Nuclear Assurance
Tennessee Valley Authority
Electronic Mail Distribution

Mark J. Burzynski, Manager
Nuclear Licensing
Tennessee Valley Authority
Electronic Mail Distribution

Paul L. Pace, Manager
Licensing and Industry Affairs
Watts Bar Nuclear Plant
Tennessee Valley Authority
Electronic Mail Distribution

Larry S. Bryant, Plant Manager
Watts Bar Nuclear Plant
Tennessee Valley Authority
Electronic Mail Distribution

County Executive
Rhea County Courthouse
375 Church Street, Suite 215
Dayton, TN 37321-1300

County Executive
Meigs County Courthouse
Decatur, TN 37322

Lawrence E. Nanney, Director
TN Dept. of Environment & Conservation
Division of Radiological Health
Electronic Mail Distribution

Ann Harris
341 Swing Loop Road
Rockwood, Tennessee 37854

John D. White, Jr., Director
Tennessee Emergency Management
Agency
Electronic Mail Distribution

Distribution w/encl: (See page 4)

Distribution w/encl:
M. L. Padovan, NRR
RIDSNRRDIPMLIPB
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Enclosure

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-390, 50-391
License Nos:	NPF-90 and Construction Permit CPPR-92
Report No:	50-390/01-04, 50-391/01-04
Licensee:	Tennessee Valley Authority (TVA)
Facility:	Watts Bar Nuclear Plant, Units 1 and 2
Location:	1260 Nuclear Plant Road Spring City TN 37381
Dates:	September 16 through December 15 , 2001
Inspectors:	J. Bartley, Senior Resident Inspector D. Rich, Resident Inspector R. Carrion, Project Engineer D. Forbes, Health Physicist L. Miller, Operations Engineer W. Sartor, Senior Emergency Preparedness Inspector
Approved by:	P. Fredrickson, Chief Reactor Projects Branch 6 Division of Reactor Projects

SUMMARY OF FINDINGS

Integrated Inspection Report 05000390-01-04, 05000391-01-04, on September 16, 2001 - December 15, 2001, Tennessee Valley Authority, Watts Bar, Units 1 & 2. Heat Sink.

The inspection was conducted by resident inspectors, a regional radiation specialist, regional emergency preparedness specialists, and a project engineer. No findings of significance were identified. The significance of issues is indicated by their color (green, white, yellow, red) and was determined by the Significance Determination Process in draft Inspection Manual Chapter 0609. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website.

A. Inspector Identified Findings

Cornerstone: Mitigating Systems

TBD An unresolved item was identified involving inadequate corrective action for clams in the essential raw cooling water (ERCW) system which potentially rendered the 1B-B residual heat removal (RHR) pump inoperable. Flow testing performed on the 1B-B RHR pump room cooler on October 24, 2001, identified that the ERCW flow was less than required. Subsequent inspection revealed that the line was blocked with clam shells. In May 2000, the licensee identified problems with clams blocking ERCW lines. Corrective actions for this event were not implemented in a timely manner and failed to prevent recurrence of a significant condition adverse to quality.

The finding was determined to have a potential safety significance greater than very low significance because (1) the degraded condition had affected the function of the 1B-B RHR pump; (2) of the high safety importance of the RHR pumps; and (3) the condition potentially existed for greater than 30 days (Section 1R07).

B. Licensee Identified Violations

None

Report Details

Summary of Plant Status

Unit 1 operated at or near 100 percent power for the entire inspection period. Unit 2 remained in a suspended construction status.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors verified that the licensee had taken actions against freezing weather conditions to limit the risk of freeze-related initiating events and adequately protect mitigating systems from its effects. The inspectors walked down selected components, including those associated with the refueling water storage tank level instruments, condensate storage tank level instruments, main feedwater flow sensing lines, main steam valve vaults, essential raw cooling water (ERCW) instrumentation and piping, and fire pumps to evaluate implementation of licensee procedures and the material condition of the selected freeze-protected components and their respective insulation. Corrective actions to items identified in relevant problem evaluation reports (PERs)/work orders (WOs) and a self-assessment of freeze protection practices and procedures were assessed for effectiveness and timeliness. The following documents were reviewed during the inspection:

- Procedure 1-PI-OPS-1-FP, Freeze Protection
- Plant Administrative Instruction (PAI)-10.17, Freeze Protection Program
- Self-Assessment WBN-M&M-01-001, Freeze Protection Program
- PERs 00-016454-000 and 00-16455-000

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope

The inspectors conducted equipment alignment partial walkdowns to evaluate the operability of selected redundant trains or backup systems, listed below, with the other train or system inoperable or out-of-service. The inspectors reviewed the functional system descriptions, Updated Final Safety Analysis Report (UFSAR), system operating procedures, and Technical Specifications (TS) to determine correct system lineups for the current plant conditions. The inspectors performed walkdowns of the systems to

verify that critical components were properly aligned and to identify any discrepancies which could affect operability of the redundant train or backup system.

- 1A motor-driven auxiliary feedwater (MDAFW) pump, System Operating Instruction (SOI) 3.02, Auxiliary Feedwater System
- 1B residual heat removal (RHR) train, SOI-74.01, Residual Heat Removal System
- 1B-B emergency diesel generator (EDG), SOI-82.02, Diesel Generator (DG) 1B-B

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors conducted tours of areas important to reactor safety, listed below, to verify the licensee's implementation of fire protection requirements as described in the Fire Protection Program; Standard Programs and Processes (SPP)-10.0, Control of Fire Protection Impairments; SPP-10.10, Control of Transient Combustibles; and SPP-10.11, Control of Ignition Sources (Hot Work). The inspectors evaluated, as appropriate, conditions related to (1) licensee control of transient combustibles and ignition sources; (2) the material condition, operational status, and operational lineup of fire protection systems, equipment, and features; and (3) the fire barriers used to prevent fire damage or fire propagation.

- 6.9 kV shutdown boardrooms (A and B train)
- 480 volt and vital AC board rooms (A and B train)
- Auxiliary building elevation 713
- EDG rooms (1A-A, 1B-B, 2A-A, 2B-B)
- Auxiliary control room

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors reviewed the licensee's heat exchanger performance program to verify that potential heat exchanger deficiencies which could mask degraded performance were identified and corrected and also verified that program documents met the licensee's commitments to Generic Letter 89-13. The inspectors observed portions of the inspection of the A train RHR pump room cooler and verified that (1) test acceptance criteria and results appropriately considered differences between testing conditions and design conditions; (2) inspection results were appropriately categorized against pre-established acceptance criteria and were acceptable; (3) frequency of testing or inspection was sufficient to detect degradation prior to loss of heat removal capabilities

below design basis values; and (4) test results considered test instrument inaccuracies and differences. The following documents were reviewed during this inspection:

- Technical Instruction (TI)-79.000, Generic Letter 89-13 Heat Exchanger Test Program, Revision 6
- WO 01-007605-000, 1A RHR Room Cooler Inspection

The inspectors also reviewed the licensee's response to discovery of inadequate ERCW flow to the 1B-B RHR pump room cooler.

b. Findings

An unresolved item (URI) was identified for inadequate corrective actions which resulted in a recurrence of clams blocking ERCW flow to a safety-related component. This licensee-identified finding was determined to have potentially greater than very low safety significance.

On October 24, 2001, while performing flow testing the licensee found that the 1B-B RHR pump room cooler had essentially no ERCW cooling water flow because the flow control valve was blocked with asiatic clam shells. The room cooler is required attendant equipment. The RHR room coolers normally have ERCW flow at all times; however, there is no installed flow instrumentation. Therefore, the time the flow blockage occurred was not known. Previous to October 24, the last successful sustained operation of the 1B-B RHR pump was July 10, 2001.

The licensee has had previous problems with silt accumulation and asiatic clam infestation in the ERCW system (reference NRC Integrated Report 50-390/00-03, Section 1R19), including flow blockage in various safety-related heat exchangers. Corrective actions were summarized in PER 00-006894-000 and included plans to implement a flow monitoring program to detect degrading flow situations in risk-significant components. The overall plan to prevent biofouling was approved in February 2001 and, even though implementation of the flow monitoring program was not accomplished, PER 00-006894-000 was closed. As of October 24, 2001, the flow monitoring program had still not been implemented.

The reduction of ERCW flow in the 1B-B RHR pump room cooler was significant because it resulted in the B train RHR system, an accident mitigation system, being potentially inoperable for up to 90 days. If the licensee had a regular flow monitoring program, the degraded condition could have been detected earlier, resulting in reduced unavailability time. The finding had a credible impact on safety because it resulted in a potential loss of function of the 1B-B RHR pump for greater than the TS allowed outage time of 72 hours.

Criterion XVI of 10 CFR 50 Appendix B requires that conditions adverse to quality be promptly identified and corrected. In the case of significant conditions adverse to quality, the cause of the condition shall be identified and corrective action taken to preclude repetition. Watts Bar PER 00-006894-000 identified biofouling as a significant condition adverse to quality and identified regular flow monitoring as one of several corrective actions. PER 00-006894-000 was closed in February 2001 prior to the

implementation of a flow monitoring program. Contrary to the requirements of 10 CFR 50 Appendix B, the licensee failed to prevent recurrence of clams blocking ERCW flow to a safety-related component. Pending the determination of the finding's safety significance, the issue is identified as URI 50-390/01-04-01, Failure to Implement Adequate Corrective Actions for Clam Blockage. This condition was documented in the licensee's corrective action program in PER 01-016011-000.

1R11 Licensed Operator Requalification

a. Inspection Scope

The inspectors observed operators in the plant's simulator during two licensed operator retraining annual simulator examinations to verify that operator performance was adequate and that training was being conducted in accordance with Procedures TRN-1, Administering Training, and TRN-11.4, Continuing Training for Licensed Personnel. In addition, the inspectors verified that the training program included risk-significant operator actions, emergency plan implementation, and lessons learned from previous plant experiences.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors sampled portions of selected structures, systems or components (SSCs), listed below, as a result of performance-based problems, to assess the effectiveness of maintenance efforts that apply to scoped SSCs and to verify that the licensee was following the requirements of TI-119, Maintenance Rule Performance Indicator Monitoring, Trending, and Reporting, 10 CFR 50.65, and SPP-6.6, Maintenance Rule Performance Indicator Monitoring, Trending, and Reporting 10 CFR 50.65. Reviews focused, as appropriate, on (1) Maintenance Rule scoping in accordance with 10 CFR 50.65; (2) characterization of failed SSCs; (3) safety significance classifications; (4) 10 CFR 50.65 (a)(1) or (a)(2) classifications; and (5) the appropriateness of performance criteria for SSCs classified as (a)(2) or goals and corrective actions for SSCs classified as (a)(1).

- Failure of instrument tube fitting on discharge of 1B centrifugal charging pump
- Safety injection pump relief valve leakage
- 1-FCV-1-4, main steam isolation valve failed to fully shut
- 1-LCV-3-171, auxiliary feedwater level control valve
- A train control room air conditioning chiller tripped
- B train MDAFW pump failed to auto start

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors evaluated, as appropriate, for the selected SSCs listed below (1) the effectiveness of the risk assessments performed before maintenance activities were conducted; (2) the management of risk; (3) that, upon identification of an unforseen situation, necessary steps were taken to plan and control the resulting emergent work activities; and (4) that maintenance risk assessments and emergent work problems were adequately identified and resolved. The inspectors verified that the licensee was complying with the requirements of 10 CFR 50.65 (a)(4); SPP-7.0, Work Control and Outage Management; SPP-7.1, Work Control Process; and TI-124, Equipment to Plant Risk Matrix.

- B train hydrogen analyzer work coincident with B train hydrogen recombiner
- 1A RHR pump outage with emergent work on 1B MDAFW pump
- Vital inverter 2-1 work coincident with A train hydrogen analyzer and lower containment radiation monitor

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-routine Plant Evolutions

a. Inspection Scope

The inspectors reviewed the licensee's response to a leak on the discharge of the 1B centrifugal charging pump on September 23, 2001. The leak was caused by a failed fitting on an instrument line to a local discharge gauge. The inspectors reviewed operator logs and plant computer data to verify that operators responded in accordance with Abnormal Operating Instruction (AOI)-6, Small Reactor Coolant System Leak; SOI-62.01, CVCS-Charging and Letdown; and the Emergency Plan Implementing Procedures.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed selected operability evaluations affecting risk-significant mitigating systems, listed below, to assess, as appropriate (1) the technical adequacy of the evaluations; (2) whether continued system operability was warranted; (3) whether other existing degraded conditions were considered as compensating measures; (4) whether the compensatory measures, if involved, were in place, would work as intended, and were appropriately controlled; (5) where continued operability was considered unjustified, the impact on TS Limiting Conditions for Operation (LCOs) and the risk significance in accordance with the Significance Determination Process. The inspectors verified that the operability evaluations were performed in accordance with SPP-3.1, Corrective Action Program, and SPP-10.6, Engineering Evaluations for Operability Determinations.

- PER 01-014142-000, failure of 1-FCV-1-36 1A main feedwater pump high pressure stop valve
- PER 01-014558-000, Foxboro modules for reactor coolant system instrumentation have broken or cracked signal cable connectors
- PER 01-014170-000, potential failure mechanism for a MDAFW pump to fail to start on Lo-Lo steam generator water level
- PER 01-015543-000, ERCW line to 1B RHR pump room cooler clogged with clams

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed post-maintenance test (PMT) procedures and/or test activities listed below to assess whether (1) the effect of testing on the plant had been adequately addressed by control room and/or engineering personnel; (2) testing was adequate for the maintenance performed; (3) acceptance criteria were clear and adequately demonstrated operational readiness consistent with design and licensing basis documents; (4) test instrumentation had current calibrations, range, and accuracy consistent with the application; (5) tests were performed as written with applicable prerequisites satisfied; (6) jumpers installed or leads lifted were properly controlled; (7) test equipment was removed following testing; and (8) equipment was returned to the status required to perform its safety function. The inspectors verified that these activities were performed in accordance with SPP-8.0, Testing Programs; SPP-6.3, Pre-/Post-Maintenance Testing; and SPP-7.1, Work Control Process.

- WO 01-004717-000, retest flush connection added to 1B Containment Spray pump room cooler
- WO 01-014747-000, replace #4 steam generator pressure transmitter

- WO 01-012647-000, replace test tee on centrifugal charging pump 1B discharge pressure sensing line
- WO 01-014392-000, repair 1-DRV-062-0541

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors witnessed surveillance tests and/or reviewed test data of selected risk-significant SSCs, listed below, to assess, as appropriate, whether the SSCs met the requirements of the TS; the UFSAR; SPP-8.0, Testing Programs; SPP-8.2, Surveillance Test Program; and SPP-9.1, ASME Section XI. The inspectors also determined whether the testing effectively demonstrated that the SSCs were operationally ready and capable of performing their intended safety functions.

- 1-SI-3-903-B, Valve Full Stroke Exercising During Plant Operation, Auxiliary Feedwater, Train B
- 1-SI-3-901-B, Motor Driven Auxiliary Feedwater Pump 1B-B, Quarterly Performance Test
- 0-SI-82-18-B, 184 Day Fast Start and Load Test DG 1B-B
- 1-SI-0-20, Hot Channel Factors Determination

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary plant modifications against the requirements of SPP-9.5, Temporary Alterations, and SPP-9.4, 10 CFR 50.59 Evaluation of Changes, Test, and Experiments, and verified that the modifications did not affect system operability or availability as described by the TS and the UFSAR. In addition, the inspectors verified that the installation of the temporary modification was in accordance with the work package, that adequate configuration control was in place, that procedures and drawings were updated, and that post-installation tests verified operability of the affected systems.

- 1-01-11-99, Auxiliary power supply for panel 1-R-7
- 1-01-10-3, “Seal In” around MDAFW pump ESFAS actuation relay

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP1 Exercise Evaluation

a. Inspection Scope

The inspectors reviewed the objectives and scenario to determine whether they were designed to test major elements of the licensee's emergency plan. The inspectors observed and evaluated the licensee's performance in the exercise, conducted on November 7, 2001, as well as selected proceedings related to the licensee's conduct of the exercise. Licensee activities inspected during the exercise included those occurring in the control room simulator, technical support center, operational support center, and central emergency control center. The NRC's assessment focused on the risk-significant activities of event classification, notification of governmental authorities, onsite protective actions, offsite protective action recommendations, and accident mitigation. The inspectors also evaluated command and control, the transfer of emergency responsibilities between facilities, communications, and adherence to emergency plan implementing procedures. The performance of the emergency response organization was evaluated against applicable licensee procedures and regulatory requirements. The inspectors attended the post-exercise critique to evaluate the licensee's self-assessment process, as well as the presentation of critique results to plant management.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes

a. Inspection Scope

The inspectors reviewed changes to the Radiological Emergency Plan (REP) against the requirements of 10 CFR 50.54(q) to determine whether any of the changes decreased REP effectiveness.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors observed a licensee-evaluated emergency preparedness drill and two licensed operator annual examinations to verify that the emergency response organization was properly classifying events in accordance with Emergency Plan Implementing Procedure (EPIP)-1, Emergency Plan Classification Flowchart, and making accurate and timely notifications and protective action recommendations in accordance with EPIP-2, Notification of Unusual Event; EPIP-3, Alert; EIPIP-4, Site Area Emergency; EPIP-5, General Emergency; and the Radiological Emergency Plan. In addition, the inspectors verified that licensee evaluators were identifying deficiencies and properly dispositioning performance against the performance indicator criteria in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas

a. Inspection Scope

The inspectors reviewed Radiological Control Instruction (RCI)-100, Control of Radiological Work, and SPP-5.1, Radiological Controls, and performed plant walkdowns to verify that postings, barricades (including locked doors to high radiation areas) and other controls of access to radiologically-controlled areas, including high radiation areas and very high radiation areas, were being implemented in accordance with the procedures. In addition, the inspectors reviewed the licensee's program with respect to control of keys to locked high radiation and very high radiation areas (as defined in RCI-100 and Physical Security Instruction 13, Site Lock and Key Program), including the key sign-out log, against the requirements of 10 CFR 20.1601 and 20.1602. The inspectors also independently measured dose rates in four posted high radiation areas to verify licensee surveys.

The inspectors observed work conducted in a posted high radiation area, including support by health physics personnel who monitored radiation fields and personnel dose while the work was being done. Associated with that work, the inspectors observed and evaluated pre-job briefings with the personnel who were scheduled to perform the tasks, which reviewed the work to be performed and included radiation work permit (RWP) and as low as reasonably achievable (ALARA) discussions to review expected radiological conditions of the work area and actions to be taken in the event that those conditions changed.

The inspectors reviewed licensee control and storage of highly activated materials (e.g., fuel channels and low power range monitor sources) under water in the spent fuel pool (SFP), which could be raised inadvertently to the pool surface thereby creating a high radiation area or extra high radiation area, as specified in TI-7.005, Storage of Material in the Spent Fuel Pool, Cask Pit, and New Fuel Pit. The inspectors also reviewed a recent inventory of these items and verified the presence of selected listed items in the cask pit.

The inspectors also reviewed selected calendar year 2001 PERs related to access control issues in the licensee's corrective action program for assignment, effectiveness of characterization, resolution/closeout timeliness, and trending. In addition, two self-assessment reports, WBN-RAD-01-004 and WBN-RAD-01-005, covering high radiation area controls and on-line radiation exposure control, respectively, were reviewed and the findings evaluated for significance and timely correction.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation

.1 Area Radiation Monitors

a. Inspection Scope

The UFSAR was reviewed to identify radiation monitors associated with transient high and very high radiation areas including those used in remote emergency assessment. The inspectors evaluated the operability and response of four area radiation monitors located in the reactor and radioactive waste buildings. The inspectors also reviewed the last calibration records for the four radiation monitors. The inspectors observed the source check of a condensate demineralizer radiation monitor located in the turbine building during a calibration of the instrument.

b. Findings

No findings of significance were identified.

.2 Portable Survey Instrumentation

a. Inspection Scope

The inspectors reviewed the accuracy, operability, calibration, and storage of various types of portable survey instruments to determine licensee compliance with 10 CFR 20.1501. The inspectors evaluated the operability and response of the whole body friskers and portal monitors utilized for monitoring personnel released from the radiologically controlled area. The inspectors observed the source check of two portal monitors.

Whole body counter calibration procedures and records were reviewed to evaluate the licensee's capability for assessing internal intakes of radioactive byproduct materials. Daily quality control checks were also reviewed.

Radiation protection technicians use of portable survey instrumentation was observed. Technicians were observed selecting instrumentation and verification of operability prior to use of the equipment in performance of radiological surveys and monitoring.

b. Findings

No findings of significance were identified.

.3 Protective Equipment Respiratory Protection - Self-Contained Breathing Apparatus (SCBA) Equipment

a. Inspection Scope

The inspectors evaluated the licensee's respiratory protection program and reviewed the status of SCBAs staged for use in the plant to determine licensee compliance with 10 CFR 20.1703. The inspectors reviewed training records and fit-test records for operators and interviewed personnel to determine their level of knowledge of SCBA locations and proper use. SCBAs staged for control room emergency use were inspected for general condition, proper air pressure, and correct number of units available. The licensee's fit-testing methods were reviewed. Licensee procedures related to respiratory protection use and maintenance were reviewed.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verifications

Licensee records were reviewed to determine whether the submitted PI statistics were calculated in accordance with the guidance contained in NEI 99-02, Regulatory Assessment Performance Indicator Guideline.

.1 Initiating Events Cornerstone

Unplanned Scrams Per 7000 Critical Hours
Scrams With Loss of Normal Heat Removal

a. Inspection Scope

The inspectors reviewed operating logs and monthly operating reports for the period of March 1 through September 31, 2001, to verify the accuracy and completeness of the Unplanned Scrams Per 7000 Critical Hours and Scrams With Loss of Normal Heat

Removal PIs. The inspectors also independently calculated the reported values to verify their accuracy.

b. Findings

No findings of significance were identified.

.2 Mitigating Systems Cornerstone

High Pressure Injection System Unavailability
Residual Heat Removal Safety System Unavailability

a. Inspection Scope

The inspectors reviewed operating logs, TS LCO entry records, weekly work schedules, and emergent work lists for the period of April 1 to September 30, 2001, to verify the accuracy and completeness of the High Pressure Injection and Residual Heat Removal Safety System Unavailability PIs.

b. Findings

No findings of significance were identified.

.3 Emergency Preparedness Cornerstone

Emergency Response Organization (ERO) Drill/Exercise Performance

a. Inspection Scope

The inspectors reviewed a sample of drill records through the third quarter of 2001 to verify the accuracy and completeness of the ERO Drill/Exercise Performance (DEP) PI. Documentation was reviewed for an ERO drill to verify the licensee's reported data regarding successes in emergency classifications, notifications, and protective action recommendations. In addition, the inspectors verified the accuracy of the licensee's determinations with respect to the 10 DEP PI opportunities through direct observation of licensee exercise conducted on November 7, 2001.

b. Findings

No findings of significance were identified.

ERO Drill Participation

a. Inspection Scope

The inspectors assessed the accuracy of the ERO Drill Participation PI through review of the training records for selected individuals assigned to key positions in the ERO as of the end of the third quarter of 2001.

b. Findings

No findings of significance were identified.

Alert and Notification System Reliability PI

a. Inspection Scope

The inspectors assessed the accuracy of the Alert and Notification System Reliability PI, through review of a sample of the licensee's records of the biweekly silent tests, monthly full–cycle, and annual growl tests conducted from October 1, 2000, to September 30, 2001.

b. Findings

No findings of significance were identified.

.4 Occupational Radiation Safety and Public Radiation Safety Cornerstones

Occupational Exposure Control Effectiveness
RETS/ODCM Radiological Effluent

a. Inspection Scope

The inspectors examined licensee corrective actions in the area of radiation protection paying particular attention to any instances of unintended exposure to verify the accuracy of performance indicators in the occupational radiation safety and public radiation safety cornerstones for the period December 2000 through November 2001. The 2000 annual effluent report was reviewed for any anomalous releases that could have provided significant dose to the public. In addition, the inspectors reviewed the licensee's procedure for the collection and analysis of performance indicator data.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up

Leak on Discharge of 1B Centrifugal Charging Pump

a. Inspection Scope

The inspectors reviewed the licensee's response to a leak on the discharge of the 1B centrifugal charging pump on September 23, 2001. The leak was caused by a failed fitting on an instrument line to a local discharge gauge. The inspectors reviewed operator logs and plant computer data to verify that mitigating systems operated properly and that the operators responded in accordance with AOI-6, Small Reactor Coolant System Leak; SOI-62.01, CVCS-Charging and Letdown; and the EPIPs. The inspectors verified that the licensee properly classified the event and made timely notifications in accordance with 10 CFR 50.72.

b. Findings

No findings of significance were identified.

4OA5 Other

.1 Unit 2 Layup Inspection (IP 92050)

a. Inspection Scope

The inspectors observed the condition of Unit 2 equipment in layup, both installed and in storage, inspected preservation and foreign material exclusion practices, and observed the general condition of the steel containment and concrete shield building, as well as Unit 2 areas inside the auxiliary building. The inspectors reviewed work control, maintenance, housekeeping and preservation procedures, reviewed identification and status lists of equipment maintained in layup, and reviewed records of maintenance performed on several components. The inspectors reviewed the most recent construction permit activity and Plant Lay-Up Program audit and also reviewed component deficiency and non-conformance records.

The following documents and procedures were reviewed:

- TVA-NQA-PLN-89-A, Nuclear Quality Assurance Plan
- Construction Administration Instruction (CAI) 1.01, Work Control for Non-Transferred Features
- CAI-1.02, Preventive Maintenance for Non-Transferred Features
- The Site-Specific Engineering Specification for Plant Layup/Equipment Preservation, N3M-935
- SPP-2.2, Administration of Site Technical Procedures
- SPP-10.7, Housekeeping/Temporary Equipment Control
- Nuclear Engineering Department Procedure (NEDP)-10, Design Output
- Nuclear Assurance Department Procedure (NADP)-2, AUDITS
- WBN Business Practice, (BP)-380, Requests for Installed Unit 2 Non-Transferred Components

- Preventive Maintenance Records for the following components:
  - 2-TURB-001-002A (12/13/00, 1/11/01, 2/6/01, 3/1/01, 3/21/01, 5/8/01, 6/7/01, 7/232/01, 8/20/01, 9/4/01)
  - 2-PSQ-03B-8032/01 (3/7/01)
  - 2-PMP-062-108 (12/15/00, 1/17/01, 4/26/01, 8/13/01)
  - 2-MTR-062-104B (12/15/99, 1/17/01, 5/15/01, 6/14/01, 7/12/01, 8/16/01, 9/20/01, 11/14/01, 2/15/01)

The inspectors observed preventive maintenance activities conducted on the following components to verify that they were accomplished in accordance with the procedures listed above.

- 2-RE-090-062, Seal Table Area Airborne Particulate Monitor
- 2-RE-090-099, Condenser Vacuum Exhaust Gaseous Monitor
- 2-RE-090-104, RCS Letdown Liquid Process Monitor
- 2-RE-090-106, Lower Containment Air Gaseous Monitor
- 2-RE-090-112, Upper Containment Air Gaseous Monitor
- 2-RE-090-119, Condenser Vacuum Exhaust Gaseous Monitor
- 2-RE-090-120, S/G Blowdown Effluent Liquid Process Monitor
- 2-RE-090-124, S/G Sample Liquid Process Monitor
- 2-RE-090-129, Condenser Vacuum Exhaust Gaseous Monitor
- 2-RI-090-061B, Incore Instrument Room Area Radiation Monitor
- 2-RI-090-106D, Lower Containment Gaseous Monitor
- 2-RI-090-112D, Upper Containment Gaseous Monitor

b. Findings and Observations

No findings of significance were identified.

.2 Institute of Nuclear Power Operations (INPO) Plant Assessment Report Review

The inspectors reviewed the final INPO plant assessment report of Watts Bar conducted in September 2001. The inspectors reviewed the report to ensure that issues identified were consistent with the NRC perspectives of licensee performance and if any significant safety issues were identified that required further NRC follow-up.

4OA6 Meetings, including Exit

The inspectors presented the inspection results to Mr. L. Bryant and other members of licensee management at the conclusion of the inspection on December 19, 2001. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

D. Boone, Radiological Control Manager
L. Bryant, Plant Manager
S. Casteel, Radiological and Chemistry Control Manager
J. Cox, Training Manager
F. Pavlechko, Emergency Preparedness Supervisor
L. Hartley, Maintenance Rule Coordinator
M. King, Acting Chemistry Manager
D. Kulisek, Operations Manager
W. Lagergren, Site Vice President
B. Marks, Corporate Emergency Preparedness Manager
D. Nelson, Business and Work Performance Manager
P. Pace, Licensing and Industry Affairs Manager
K. Parker, Maintenance and Modifications Manager
J. Roden, Operations Superintendent
J. West, Site Quality Manager

NRC

J. Bartley, Senior Resident Inspector
D. Rich, Resident Inspector

ITEMS OPENED AND CLOSED

Opened

50-390/2001-004-01	URI	Failure to Implement Adequate Corrective Actions for Clam Blockage (Section 1R07).