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

April 14, 2006

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

SUBJECT: SEQUOYAH NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT 05000327/2006002 AND 05000328/2006002 AND ANNUAL ASSESSMENT MEETING SUMMARY

Dear Mr. Singer:

On March 31, 2006, the United States Nuclear Regulatory Commission (NRC) completed an inspection at your Sequoyah Nuclear Plant Units 1 and 2. The enclosed integrated inspection report documents the inspection results, which were discussed on April 5, 2006, with Mr. R. Douet and other members of your staff.

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

This report documents two NRC-identified findings of very low safety significance (Green). Both of these findings were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the United States Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Sequoyah Nuclear Plant.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publically Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Malcolm T. Widmann , Chief
Reactor Projects Branch 6
Division of Reactor Projects

Docket Nos.: 50-327, 50-328
License Nos.: DPR-77, DPR-79

Enclosure: Inspection Report 05000327/2006002 and 05000328/2006002
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

cc w/encl:
Ashok S. Bhatnagar
Senior Vice President
Nuclear Operations
Tennessee Valley Authority
Electronic Mail Distribution

Larry S. Bryant, Vice President
Nuclear Engineering &
Technical Services
Tennessee Valley Authority
Electronic Mail Distribution

Randy Douet
Site Vice President
Sequoyah Nuclear Plant
Electronic Mail Distribution

Robert J. Beecken, Vice President
Nuclear Support
Tennessee Valley Authority
Electronic Mail Distribution

General Counsel
Tennessee Valley Authority
Electronic Mail Distribution

John C. Fornicola, Manager
Nuclear Assurance and Licensing
Tennessee Valley Authority
Electronic Mail Distribution

Glenn W. Morris, Manager
Corporate Nuclear Licensing and
Industry Affairs
Tennessee Valley Authority
Electronic Mail Distribution

Paul L. Pace, Manager
Licensing and Industry Affairs
ATTN: James D. Smith
Sequoyah Nuclear Plant
Tennessee Valley Authority
Electronic Mail Distribution

David A. Kulisek, Plant Manager
Sequoyah Nuclear Plant
Tennessee Valley Authority
Electronic Mail Distribution

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

County Mayor
Hamilton County Courthouse
Chattanooga, TN 37402-2801

Ann Harris
341 Swing Loop
Rockwood, TN 37854

James H. Bassham, Director
Tennessee Emergency Management
Agency
Electronic Mail Distribution

Distribution w/encl: (See page 4)

Distribution w/encl:
D. Pickett, NRR
L. Slack, RII EICS
RIDSNRRDIPMLIPB
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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-327, 50-328
License Nos:	DPR-77, DPR-79
Report No:	05000327/2006002 and 05000328/2006002
Licensee:	Tennessee Valley Authority (TVA)
Facility:	Sequoyah Nuclear Plant
Location:	Sequoyah Access Road Soddy-Daisy, TN 37379
Dates:	January 1, 2006 - March 31, 2006
Inspectors:	S. Freeman, Senior Resident Inspector M. Speck, Resident Inspector F. Ehrhardt, Operations Engineer (Section 1R11.2)
Approved by:	M. Widmann, Chief Reactor Projects Branch 6 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000327/2006002, IR 05000328/2006002; 01/01/2006 - 03/31/2006; Sequoyah Nuclear Plant, Units 1 & 2; Fire Protection, Operability Evaluations.

The report covered a three-month period of inspection by resident inspectors. Two green findings, both of which were non-cited violations (NCVs), were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of Sequoyah Operating Licenses DPR-077, Section 2.C.(16) and DPR-079, Section 2.C.(13) for failure to establish adequate compensatory actions for obstructed fire sprinklers in the cable spreading room. Due to an inadequate maintenance procedure, licensee personnel failed to evaluate scaffolding in the cable spreading room for the effect on fire protection and therefore did not implement a fire watch as required by the fire protection program. The licensee entered the problem into their corrective action program to correct the procedure and immediately implemented the fire watch.

  This finding was more than minor because if left uncorrected, future scaffolding construction would result in similar unevaluated fire protection impairments and would become a more significant safety concern. In addition, the finding involved the Protection Against External Factors (fire) attribute of the Mitigating Systems cornerstone in that the licensee's ability to quickly extinguish a fire in the area was reduced due to the inoperable sprinkler head. This finding was of very low safety significance because the degradation rating was low due to the minimal impact of the limited number of sprinkler heads being partially obstructed (Section 1R05).

- Green. The inspectors identified a non-cited violation of Technical Specification 6.8.1 for failure to fully implement the compensatory measures needed to ensure the operability of the motor driven auxiliary feedwater pumps when using the essential raw cooling water system as the water source. The implementing procedure contained instructions to implement the compensatory measures on only one of two essential raw cooling water system discharge headers. The licensee entered the problem into their corrective action program and corrected the procedure.

This finding was more than minor because it affected the procedure quality attribute of the mitigating systems cornerstone by creating the situation that one essential raw cooling water discharge header would be in a flow condition that was conducive to air accumulation without monitoring as specified by the compensatory measures. This finding was of very low safety significance because the degraded condition did not result in an actual loss of safety function and was not potentially risk-significant due to possible external events (Section 1R15).

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status:

Unit 1 operated at or near 100% rated thermal power (RTP) during the inspection period until March 17, 2006, when it began a coast down to the spring refueling outage. Unit 1 ended the period at 90% RTP.

Unit 2 operated at or near 100% RTP until January 17, 2006, when power was reduced to 14% RTP and the main generator was removed from service due to transformer problems. Following main transformer realignment, the generator was returned to service and the unit reached 100% RTP on January 19, 2006. Unit 2 remained at or near 100% RTP until March 22, 2006, when a faulty rubber gasket caused a short in the isophase bus that resulted in a turbine trip and a subsequent automatic reactor trip. Following repairs, the unit was restarted on March 25, 2006, and returned to 100% RTP on March 27, 2006. The unit remained at or near 100% RTP through the end of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment

a. Inspection Scope

Partial System Walkdowns. The inspectors performed a partial walkdown of the following four systems to verify the operability of redundant or diverse trains and components when safety equipment was inoperable. The inspection's focus was to identify any discrepancies that could impact the function of the system and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, walked down control system components, and verified that selected breakers, valves, and support equipment were in the correct position to support system operation. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program. Documents reviewed are listed in the Attachment.

- Residual Heat Removal (RHR) Train 2B during maintenance on Train 2A
- Motor-Driven Auxiliary Feedwater (AFW) Train 2A and Unit 2 Turbine-Driven AFW during maintenance on Motor-Driven AFW Train 2B
- Emergency Core Cooling Systems (ECCSs) Train 1B during Charging Pump 1A outage
- Emergency Diesels 2A, 1B, and 2B during Diesel 1A Outage

Complete System Walkdown. The inspectors performed a complete system walk-down of the Component Cooling System B-Train associated with safety-related equipment to verify proper equipment alignment, identify any discrepancies that could impact the function of the system and increase risk, and to verify that the licensee properly

identified and resolved equipment alignment problems that could cause events or impact the functional capability of the system.

The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR), system procedures, system drawings, and system design documents to determine the correct lineup and then examined system components and their configuration and labeling to identify any discrepancies between the existing system equipment lineup and the correct lineup. The inspectors examined operating pumps for excessive vibration, overheating, and pump leakoff and examined heat exchangers, piping, and supports for signs of leakage and water hammer. The inspectors examined the supporting electrical system for proper configuration and labeling. In addition, the inspectors interviewed the system engineer to discuss system health reports. The inspectors reviewed system corrective action program documents, outstanding maintenance work requests, and design issues on the system to determine whether any condition described in those documents could adversely impact current system operability. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors conducted a tour of the nine areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that combustibles and ignition sources were controlled in accordance with the licensee's administrative procedures, fire detection and suppression equipment was available for use, passive fire barriers were maintained in good material condition, and compensatory measures for out-of-service, degraded, or inoperable fire protection equipment were implemented in accordance with the licensee's fire plan.

- Emergency Diesel Generator Building
- Control Building Elevation 706 (Cable Spreading Room)
- Control Building Elevation 669 (Mechanical Equipment Room, 250-VDC Battery and Battery Board Rooms)
- Control Building Elevation 685 (Auxiliary Instrument Rooms)
- Auxiliary Building Elevation 714 (Corridor)
- Control Building Elevation 732 (Mechanical Equipment Room and Relay Room)
- Auxiliary Building Elevation 734 (Shutdown Board and Battery Board Rooms)
- Auxiliary Building Elevation 749 (480V Board Rooms and Battery Rooms)
- Auxiliary Building Elevation 690 (Corridor)

b. Findings

Introduction: The inspectors identified a Green NCV for failure to establish compensatory actions for an obstructed fire sprinkler in the cable spreading room. As a result of an inadequate maintenance procedure for erecting scaffolding, licensee personnel failed to evaluate installed scaffolding and to establish compensatory actions.

Description: Prior to January 30, 2006, the licensee erected several scaffolds to support maintenance in the Control Building Cable Spreading Room. The inspectors noted that one of these scaffolds, which was approximately 36 inches in width, was placed in close proximity to a sprinkler head. The observed scaffold was placed directly below, and less than 18 inches from, the sprinkler head, rendering it inoperable.

Licensee procedure MMDP-11, Erection of Scaffolds/Temporary Work Platforms and Ladders, Revision 3S1, required that scaffolding not impair equipment or systems from performing their intended design functions and identified blocked sprinkler system (heads) as an attribute. This procedure also required that scaffolds with dimensions greater than four feet in both directions (length and width) be reviewed by Fire Operations personnel for potential fire protection impairments. The procedural guidance did not recognize that scaffold boards less than four feet in one dimension, if placed close to a sprinkler head, could render it unable to perform its safety function. As the observed scaffold was less than four feet in width, no review by Fire Operations personnel was performed and the blocked sprinkler head was not identified.

Licensee Fire Protection Report FOR/LCO 3.7.11.2 Action a.1.a required that adequate compensatory measures (hourly fire watch) be established when a sprinkler head was inoperable. This previously undetected condition of a 36-inch wide scaffolding blocking a sprinkler head existed until identified by inspectors on January 30, 2006. When informed by inspectors, licensee personnel immediately inspected the area and established the required fire watch.

Analysis: This finding was more than minor because, if left uncorrected, future scaffolding construction would result in similar unevaluated fire protection impairments and would become a more significant safety concern. In addition, the finding involved the Protection Against External Factors (fire) attribute of the Mitigating Systems cornerstone in that the licensee's ability to quickly extinguish a fire in the area was reduced due to the inoperable sprinkler head. The inspectors evaluated this issue using Inspection Manual Chapter (IMC 0609), Appendix F, Fire Protection Significance Determination Process. The finding category identified was Fixed Fire Protection Systems and the inspectors assigned a degradation rating of low due to the minimal impact of the limited number of sprinkler heads being partially obstructed. The low degradation resulted in a initial qualitative screening of very low safety significance (Green).

Enforcement: Sequoyah Operating Licenses DPR-077, Section 2.C.(16) and DPR-079, Section 2.C.(13), state, in part, that the licensee shall implement and maintain in effect all provisions of the approved fire protection program. Sequoyah Fire Protection Report FOR/LCO 3.7.11.2, Action a.1.a. requires that adequate compensatory actions (hourly fire watch) be established when a sprinkler system is inoperable. Contrary to the above, on January 30, 2006, the licensee failed to establish adequate compensatory measures for blocked fire sprinklers in the cable spreading room. Inadequacies in licensee Procedure MMDP-11, resulted in failure to evaluate scaffolds less than four feet in both dimensions for possible fire sprinkler impairment. Because this violation was of very low safety significance it is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy, and is identified as NCV 05000327,328/2006002-01, Inadequate Procedure Results in Blocked Sprinkler Head Without Compensatory Actions. This was entered into the licensee's corrective action program under Problem Evaluation Report (PER) 96224.

1R06 Flood Protection Measures

Internal Flooding

a. Inspection Scope

The inspectors reviewed the auxiliary building flood design to verify that equipment essential for reactor shutdown was properly protected from a flood caused by pipe breaks in the building. Specifically, the inspectors reviewed the internal flood analysis in the Sequoyah Individual Plant Examination, the licensee's moderate energy line break flooding study, and the design of the passive sump in order to fully understand the licensee's auxiliary building flood mitigation strategy. The inspectors then reviewed the moderate energy line break study in more detail to verify that the assumptions and results remained valid. The inspectors also walked down Elevation 653 of the Auxiliary Building to verify the entry points for the passive sump and to ensure that failure of the various dropout panels would not impact more than one train of ECCS equipment. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

.1 Quarterly Inspection by Resident Staff

a. Inspection Scope

The inspectors observed as-found simulator training on February 13, 2006. The training involved a partial loss of heater drain flow and subsequent turbine runback followed by a steam generator tube leak that increased to the point of requiring a reactor trip and safety injection. The inspectors observed crew performance in terms of

communications; ability to take timely and proper actions; prioritizing, interpreting and verifying alarms; correct use and implementation of procedures, including the alarm response procedures; timely control board operation and manipulation, including high risk operator actions; oversight and direction provided by shift manager, including the ability to identify and implement appropriate Technical Specifications (TS) actions; and group dynamics involved in crew performance. The inspectors also observed the evaluators' critique and reviewed simulator fidelity to verify that it matched actual plant response. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

.2 Annual Review of Licensee Requalification Examination Results

a. Inspection Scope

On December 8, 2005, the licensee completed the annual operating tests required to be given to all licensed operators by 10 CFR 55.59(a)(2). The inspectors performed an in-office review of the overall pass/fail results of the individual operating tests and the crew simulator operating tests. These results were compared to the thresholds established in Manual Chapter 609 Appendix I, Operator Requalification Human Performance Significance Determination Process.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the following two maintenance activities to verify the effectiveness of the activities in terms of: 1) appropriate work practices, 2) identifying and addressing common cause failures, 3) scoping in accordance with 10 CFR 50.65 (b), 4) characterizing reliability issues for performance, 5) trending key parameters for condition monitoring, 6) charging unavailability for performance, 7) classification in accordance with 10 CFR 50.65(a)(1) or (a)(2), 8) appropriateness of performance criteria for System, Structures, and Components (SSCs) and functions classified as (a)(2), and 9) appropriateness of goals and corrective actions for SSCs and functions classified as (a)(1). Documents reviewed are listed in the Attachment.

- Shutdown Board Room, Electric Board Room, and Main Control Room Chillers
- Component Cooling System Train B

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the following seven activities to verify that the appropriate risk assessments were performed prior to removing equipment from service for maintenance. The inspectors verified that risk assessments were performed as required by 10 CFR 50.65 (a)(4), and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors verified the appropriate use of the licensee's risk assessment tool and risk categories in accordance with Procedure SPP-7.1, On-Line Work Management, Revision 7, and Instruction 0-TI-DSM-000-007.1, Risk Assessment Guidelines, Revision 8. Documents reviewed are listed in the Attachment.

- Maintenance on RHR Pump 2A
- Concurrent Maintenance on the Motor Driven AFW Pump 2B, Main Control Room Chiller B, Essential Raw Cooling Water (ERCW) Header 1A, and Component Cooling System Heat Exchanger 0B1
- ERCW Pump M-B removed from service for Relay Meter Calibration
- Diesel Generator 1A Outage Concurrent with Switchyard Work, ERCW Train 1A, Emergency Gas Treatment System (EGTS) Train A Maintenance and Component Cooling System Pump 2A Performance Testing
- Maintenance on Common Station Service Transformer-C Supply Breaker, Vital Battery II Replacement, Mixed Bed Demineralizer 1A Resin Transfer, and Unplanned 6.9KV Shutdown Board Room Chiller A Outage
- Motor-Driven AFW Pump 1B Performance Testing Concurrent with ERCW Train 1A Outage and 6.9 KV Shutdown Board 2B Supply Breaker Relay Calibration and Functional Testing
- Component Cooling System Pump 2B Performance Testing Concurrent with Elevation 669/690/714 Engineered Safeguard Feature (ESF) Room and Pipe Chase Cooler Outages

b. Findings

No findings of significance were identified.

1R14 Non-Routine Events

a. Inspection Scope

On January 17, 2006, inspectors observed operator actions during an unplanned power reduction and main turbine trip to support main bank transformer replacement. The replacement was deemed necessary based on a marked increase in total dissolved

combustible gas concentration in the 2B Main Bank Transformer. Inspectors observed shift management perform command and control functions in the control room; observed crew performance in terms of communications, procedural use, response to reactivity transients and reactor control actions; and observed operation of various plant systems during non-routine activities. Inspectors also observed operators and plant support staff work through plant problems as they occurred. Following the evolution, the inspectors reviewed operator logs for accuracy and completeness. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

For the seven operability evaluations described in the PERs listed below, the inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available, such that no unrecognized increase in risk occurred. The inspectors reviewed the UFSAR to verify that the system or component remained available to perform its intended function. In addition, the inspectors reviewed compensatory measures implemented to verify that the measures worked as stated and were adequately controlled. The inspectors also reviewed a sampling of PERs to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment.

- PER 96224, Scaffolding Blocking Fire Suppression Sprinkler in Cable Spreading Room
- PER 96236, Air in ERCW A-Train Discharge Header
- PER 76606, Emergency Diesel Generator (EDG) 2B Fuel Consumption
- PER 71206, Failed Atmospheric Relief Valve Controller
- PER 98358, Incorrect Schedule Used in Piping Analysis
- PER 90145, RM 90-101 Inop Flow Sensor (Past Op/Reportability)
- PER 99854, As-Found Fuel Consumption of Diesel Generator 1B-B Exceeds Acceptance Criteria

b. Findings

Introduction: The inspectors identified a Green NCV for failure to fully implement compensatory measures needed to ensure the operability of the Motor Driven AFW pumps when using the ERCW system as the water source.

Description: In response to operating experience from Watts Bar Nuclear Plant regarding air voids in the ERCW discharge headers, the licensee performed ultrasonic inspections of the ERCW discharge headers to check for air. They inspected the B

header on January 27, 2006 and found it to be full of water. On January 30, 2006, they inspected the A Header and found the 30-inch portion to contain approximately three inches of air. The licensee removed the air by increasing flow through the A Discharge Header.

The licensee performed a functional evaluation of this situation and concluded that a degraded condition existed but that excessive air would not be ingested into the motor driven AFW pumps if at least 21 inches of water remained in the 30-inch portion of each ERCW discharge header and 16 inches of water remained in the 20-inch portion of the header. The evaluation further concluded that an individual ERCW discharge header flow of greater than or equal to 9450 gallons per minute (gpm) would ensure air pockets did not accumulate. If the desired flow could not be maintained, the evaluation included a compensatory measure that required monitoring be initiated to verify that an air pocket was not accumulating. The licensee revised Procedure 0-SO-67-1, Essential Raw Cooling Water, to address the conclusions of the evaluation. The inspectors reviewed the functional evaluation and Procedure 0-SO-67-1, Revision 53, and noted that the procedure only included the specified compensatory measures for ERCW Discharge Header A. The licensee stated that it would be difficult for air to accumulate in the B header because is it would be very unusual for flow in the header to be less than 9450 gpm. However, the inspectors observed that the procedure included steps that would allow operators to reduce ERCW Discharge Header B flow below 9450 gpm. From these observations the inspectors concluded that, while the compensatory measures assured AFW operability, they were not properly implemented by procedure.

Analysis: This finding was more than minor because the licensee failed to fully implement compensatory measures for a degraded condition. Failure to do so affected the procedure quality attribute of the mitigating systems cornerstone by creating the possibility that ERCW Discharge Header B would be in a flow condition that was conducive to air accumulation without monitoring as specified by the functional evaluation. Since this degraded condition did not result in an actual loss of safety function and was not potentially risk-significant due to possible external events, the inspectors determined that it was of very low safety significance (Green). The issue is in the licensee's corrective action program in PER 98212.

Enforcement: TS 6.8.1a required that procedures be implemented covering the activities in Regulatory Guide 1.33, Revision 2, Appendix A. Paragraph 3.m of Appendix A required procedures for the startup, operation, and shutdown of safety related service water systems. Contrary to this, as of February 17, 2006, Procedure 0-SO-67-1 did not adequately implement the compensatory measures necessary to ensure that flow in ERCW Discharge Header B was maintained greater than or equal to 9450 gpm or that monitoring for air accumulation was conducted. Because this violation was determined to be of very low safety significance (Green), it is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy and is identified as NCV 05000327,05000328/2006002-02, Failure to Fully Implement Compensatory Measures Necessary for Air in the ERCW Discharge. This violation is in the licensee's corrective action program as PER 98212.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed the six post-maintenance tests listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the licensee's test procedure to verify that the procedure adequately tested the safety function(s) that may have been affected by the maintenance activity, that the acceptance criteria in the procedure were consistent with information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed the test data to verify that test results adequately demonstrated restoration of the affected safety function(s). Documents reviewed are listed in the Attachment.

- Work Order (WO) 05-753860-000, Bridge and Megger Safety Injection (SI) Pump Motor 2B
- WO 06-990090-000, Replace Eagle 21 Analog Input Card in Protection Set III
- WO 05-778723-000, 05-778652-000, 05-778724, Charging Pump 1B Outage
- WO 05-778954-000, Replace Unit 1 Rod Control Bank D, Group 2 Step Counter
- WO 05-774174-000, Replace Vital Battery II
- WO 04-774840-000, Diesel Generator 1A Power Pack Replacement

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the six surveillance tests identified below, by witnessing testing and/or reviewing the test data, the inspectors verified that the SSCs involved in these tests satisfied the requirements described in the TS surveillance requirements, the UFSAR, and applicable licensee procedures, and that the tests demonstrated that the SSCs were capable of performing their intended safety functions. Documents reviewed are listed in the Attachment. Those tests included the following:

- 2-SI-IFT-099-90.8A, Reactor Trip Instrumentation Monthly Functional Test (SSPS) Train A, Revision 8
- 0-SI-NUC-000-007.0, Measurement of the At-Power Moderator Temperature Coefficient (Unit 1), Revision 13
- 0-SI-SXP-067-210.Q, Essential Raw Cooling Water Pump Q-A Performance Test, Revision 9*
- 2-SI-SXP-003-201.A, Motor Driven Auxiliary Feed Water Pump 2A-A Performance Test, Revision 13*

- 2-SI-OPS-000-002.0, Shift Log (Main Control Room), Revision 70
- 0-SI-SLT-030-258.1, Containment Isolation Valve Local Leak Rate Test Purge Air - Unit 2, Revision 4**

*This procedure included inservice testing requirements.
**This procedure included testing of a containment isolation valve.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the two temporary modifications listed below and the associated 10 CFR 50.59 screening, and compared each against the UFSAR and TS to verify that the modification did not affect operability or availability of any safety system. The inspectors walked down each modification to ensure it was installed in accordance with the modification documents and reviewed post installation and removal testing to verify the actual impact on permanent systems was adequately verified by the tests. The inspectors also verified that permanent plant documents were updated to reflect the modification to ensure that plant configuration control was maintained. Documents reviewed are listed in the Attachment.

- TACF 1-06-005-063, Install Temporary Palliative Reinforcing Structure on the Class G SI Test Header Pipe, Revision 0
- TACF 1-06-001-068, Reactor Vessel Head Vent Temporary Setpoint Change, Revision 0

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

a. Inspection Scope

Resident inspectors evaluated the conduct of a routine licensee emergency drill on February 23, 2006 to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation (PAR) development activities. The inspectors observed emergency response operations in the simulated control room to verify that event classification and notifications were done in accordance with EPIP-1, Emergency Plan Classification Matrix, Revision 37.

The inspectors also attended the licensee critique of the drill to compare any inspector-observed weakness with those identified by the licensee in order to verify whether the licensee was properly identifying failures.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors sampled licensee submittals for the two PIs listed below for the period from January 1, 2004, through December 31, 2005. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in NEI 99-02, Regulatory Assessment Indicator Guideline, Revision 3, were used to verify the basis in reporting for each data element.

Cornerstone: Barrier Integrity

- Reactor Coolant System Activity
- Reactor Coolant System Leakage

The inspectors reviewed portions of the operator and chemistry logs to verify that the licensee had accurately determined the Reactor Coolant System (RCS) activity and leakage during the previous eight quarters for both units. The inspectors also observed the performance of Procedure 0-SI-OPS-068-137.0, RCS Water Inventory, which determines the amount of RCS leakage. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

.1 Daily Review

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. This was accomplished by reviewing the description of each new PER and attending daily management review committee meetings.

.2 Annual Sample Review of Problems with ABB Breakers

a. Inspection Scope

In July 2005, operators discovered the red indicating lights for the 6.9KV Shutdown Board 1A normal feeder breaker not burning and later found that the breaker was incapable of opening electrically. The licensee declared the associated emergency diesel generator inoperable, replaced the breaker, and then restored the diesel to operable status. Because of this, and previous problems with 6.9KV breakers, the inspectors reviewed licensee actions to resolve this issue. The inspectors reviewed the PER dealing with this event, PER 85306, and several other PERs, including PER 80797 which dealt with programmatic breaker problems. The inspectors also interviewed maintenance and engineering personnel, and observed several of the corrective actions. Documents reviewed are listed in the Attachment.

b. Findings and Observations

No findings of significance were identified; however, the inspectors noted that the licensee was in the process of establishing an on-site breaker rebuild and refurbishment facility and using that shop to refurbish recently purchased ABB breakers from the Bellefonte Nuclear Plant. The inspectors toured the shop and observed three hydraulic lift tables for working on breakers and several breakers in various stages of disassembly stacked on storage containers around the periphery of the room. Personnel from ABB, accompanied by several licensee maintenance technicians, were working on two breakers. The maintenance personnel were in the process of qualifying to refurbish breakers. Each breaker had its own WO.

.3 Annual Sample Review of Degraded or Non-Conforming Items Extended Beyond One Cycle

a. Inspection Scope

The inspectors reviewed the degraded or non-conforming items not repaired by the licensee within one cycle to ensure that the reasons for delay complied with 10 CFR 50 Appendix B, Criterion XVI. Specifically, the inspectors reviewed the licensee's degraded and non-conforming list, reviewed several PERs related to items on the list, and discussed the items with engineering personnel. Documents reviewed are listed in the Attachment.

b. Findings and Observations

No findings of significance were identified.

4OA3 Event Followup

Unit 2 Automatic Reactor Trip

On March 22, 2006, following a Unit 2 automatic reactor trip due to turbine trip resulting from a faulted condition on the main generator, the inspectors evaluated plant status, mitigating actions, and the licensee's classification of the event, to enable the NRC to determine an appropriate NRC response. A piece of rubber gasket material fell across the generator isophase bus causing a short to the ductwork and a generator neutral overcurrent. This resulted in a turbine trip and a reactor trip. The event was reported to the NRC as event notification 42444 and documented in the licensee corrective action program as PER 99755. Documents reviewed are listed in the Attachment.

4OA5 Other Activities

Review of the Operation of an Independent Spent Fuel Storage Installation (60855.1)

a. Inspection Scope

The inspectors reviewed the second dry cask loading campaign of the Independent Spent Fuel Storage Installation (ISFSI) to verify that operations were conducted in a safe manner in accordance with approved procedures and without undue risk to the health and safety of the public. The inspectors observed fuel loading operations and other processes on several multipurpose canisters (MPC) to verify that the specified fuel assemblies were placed in the correct locations and that other MPC processes were implemented in accordance with approved procedures. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

.1 Exit Meeting Summary

On April 5, 2006, the resident inspectors presented the inspection results to Mr. Randy Douet and other members of his staff, who acknowledged the findings. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Annual Assessment Meeting Summary

Subsequent to the end of this inspection period, on April 5, 2006, the NRC's Chief of Reactor Project's Branch 6 and the Senior Resident Inspector assigned to the Sequoyah Nuclear Plant met with the Tennessee Valley Authority (TVA) to discuss the NRC's Reactor Oversight Process (ROP) and the Sequoyah annual assessment of

safety performance for the period of January through December 2005. The major topics addressed were: the NRC's assessment program, the results of the Sequoyah assessment, and NRC inspection plans. Attendees included Sequoyah site management and members of site staff. One member of the public attended.

This meeting was open to the public. The presentation material used for the discussion and list of attendees are available from the NRC's document system (ADAMS) as accession number ML061040007. ADAMS is accessible from the NRC Web site at http://www/reading-rm/pdr.html (the Public Electronic Reading Room).

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

SUPPLEMENTAL INFORMATION
PARTIAL LIST OF PERSONS CONTACTED

Licensee personnel:

J. Bajraszewski, Licensing Engineer
D. Bodine, Chemistry/Environmental Manager
R. Bruno, Training Manager
K. Clayton, Maintenance Manager
B. Dungan, Outage and Scheduling Manager
R. Douet, Site Vice President
Z. Kitts, Licensing Engineer
D. Kulisek, Plant Manager
A. Little, (Acting) Site Security Manager
G. Morris, Manager Corporate Licensing
T. Niessen, Site Quality Manager
M. A. Palmer, Radiation Protection Manager
M. H. Palmer, Operations Manager
K. Parker, Maintenance and Modifications Manager
R. Proffitt, Licensing Engineer
R. Rogers, Engineering Manager
J. Smith, Site Licensing Supervisor
K. Wilkes, Emergency Preparedness Manager

NRC personnel:

R. Bernhard, Region II, Senior Reactor Analyst
D. Pickett, Project Manager, Office of Nuclear Reactor Regulation

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000327,328/2006002-01	NCV	Inadequate Procedure Results in Blocked Sprinkler Head Without Compensatory Actions (Section 1R05)
05000327,328/2006002-02	NCV	Failure to Fully Implement Compensatory Measures Necessary for Air in the ERCW Discharge (Section 1R15)

Discussed

None

Attachment

LIST OF DOCUMENTS REVIEWED

Section R04: Equipment Alignment

1,2-47W810-1, Flow Diagram - Residual Heat Removal System, Revision 47
2-47W811-1, Flow Diagram - Safety Injection System, Revision 57
1,2-47W803, Flow Diagram - Auxiliary Feedwater System, Revision 61
2-SO-3-2, Attachment 1, Auxiliary Feedwater System Power Checklist, Change 12
1,2-45N749-4, Wiring Diagram 480V Shutdown Board 1B2-B Single Line, Revision 47
1,2-45N749-3, Wiring Diagram 480V Shutdown Board 1B1-B Single Line, Revision 46

Section R06: Flood Protection Measures

SQS40056, Moderate Energy Line Break Flooding Study, Revision 11
SQS40056, Moderate Energy Line Break Flooding Study, Revision 0
Sequoyah Individual Plant Examination, Revision 1
PER SQ971878PER, Evaluation of Passive Sump Capacity
PER SQNCEB8408, Pressure Relief Panel Bolts Relief Panel Too High, Revision 0
PER SQNCEB8408, Pressure Relief Panel Bolts Relief Panel Too High, Revision 1
NUREG-0800, Standard Review Plan, Chapter 3.6.1, Plant Design for Protection Against Postulated Piping Failures in Fluid Systems Outside Containment
NUREG-0800, Standard Review Plan, Chapter 3.6.2, Determination of Rupture Locations and Dynamic Effects Associated with the Postulated Rupture of Piping
1-47K437-51, Isometric of Containment Spray Piping from Heat Exchangers to RWST, Revision 1
1,2-47K435-50; Isometric of RHR, CS, and SIS Pump Supply Piping; Revision 1
A14CF, Auxiliary Building Calculation- Miscellaneous Steel Covers & Frames, Revision 5

Section R11: Licensed Operator Requalification

E-0, Reactor Trip of Safety Injection, Revision 27
E-3, Steam Generator Tube Rupture, Revision 15

Section R12: Maintenance Rule Implementation

List of Open PERs for System 70 dated January 23, 2006
Open/Closed Work Orders for System 70 dated January 20, 2006
PER Keyword Searches for System 70, Component Cooling for 2004 and 2005
System Health Report Cards for Component Cooling FY2006
PER 76227, CCS Sense Lines Clogged by Corrosion Products

Section R13: Maintenance Risk Assessments and Emergent Work Evaluation

Sentinel Run, January 16-23, 2006
SQN Plan-of-the-Day, January 20, 2006
SQN MSS-OPS Daily Schedule Report 24 Hour Look-Ahead, January 19, 2006

Daily Schedule OPS 7-Day Bar Chart, T-0 dated January 19, 2006
Sentinel Run, January 16- February 5, 2006
Daily Schedule OPS 7-Day Bar Chart, T-0 dated January 23, 2006
Sentinel Run, February 6-26, 2006
Daily Schedule 7-Day Bar Chart, T-0 dated February 14, 2006
SQN Plan-of-the-Day, February 15, 2006
Sentinel Run, February 25-March 12, 2006
Daily Schedule 7-Day Bar Chart, T-0 dated February 27, 2006
SQN Plan-of-the-Day, February 28, 2006
Sentinel Run, February 27-March 18, 2006
SQN Plan-of-the-Day, March 9, 2006
Daily Schedule 7-Day Bar Chart, T-0 dated March 20, 2006
SQN Plan-of-the-Day, March 21, 2006
Sentinel Run, March 13-April 2, 2006

Section R14: Personnel Performance During Non-routine Plant Evolutions

0-GO-5, Normal Power Operation, Revision 44
0-GO-11, Turbine Shutdown Without Reactor Shutdown, Revision 19

Section R15: Operability Evaluations

FE 41326, Degraded Condition Due to Scaffolding Blocking Cable Spreading Room Fire Suppression
0-PI-OPS-018-004.0, Diesel Generator 2B-B Fuel Oil Consumption Test, Revision 0
0-PI-OPS-018-004.0, Diesel Generator 2B-B Fuel Oil Consumption Test, Revision 1
FSAR Section 8.3.1.1, Fuel Consumption Tests
FSAR Section 9.5.4, DG Fuel Oil System
TI-28, Figure C.16, Curve Book Seven Day Tank Level vs. Volume, Revision 99
50.59 Screening Review for 0-PI-OPS-018-001.1,-002.0,-003.0, and -004.0, Revision 0
0-PI-OPS-018-002.0, Diesel Generator 1B-B Fuel Oil Consumption Test, Revision 1
0-PI-OPS-018-001.0, Diesel Generator 1A-A Fuel Oil Consumption Test, Revision 1
0-PI-OPS-018-003.0, Diesel Generator 2A-A Fuel Oil Consumption Test, Revision 1
FSAR Section 10.3, Main Steam Supply System
FSAR Section 7.4, Systems Required for Fire Safe Shutdown
SQN Fire Protection Report, Part III-Safe Shutdown Capabilities, Section 3.4.4 Decay Heat Removal
1-SI-ICC-001-19C.3, Channel Calibration of Steam Generator Pressure 3 Pressure Loop P-1-19C, Revision 4
CAD530HCGLCS113082, SQN AFW System Motor Driven and Turbine Driven Pump NPSH Analysis
NUREG 1022, Event Reporting Guidelines 10 CFR 50.72 and 50.73, Revision 2, Section 3.2.9
1,2-47W866-2, Flow Diagram - Heating and Ventilation Air Flow, Revision 11
1,2-47W866-10, Flow Diagram - Heating and Ventilation Air Flow, Revision 19
1-SI-OPS-000-002.0, Shift Log, Appendix E, Vent Flow Rate Monitor Inoperable Flow Rate Estimate, Revision 77

FSAR Section 9.4.2, Heating, Ventilating, Air Conditioning - Auxiliary Building
FE 41382, Diesel Generator 1B-B Fuel Consumption Rate and 7-Day Tank Fuel Volume

Section R19: Post Maintenance Testing

0-MI-EMV-317-112.0, Corrective Maintenance Procedure for Limitorque SB-00, SMB-00 and SMB-000 Actuators, Revision 8
0-SI-EBT-250-100.4, Modified Performance Testing of 125Vdc Vital Battery and 125Vdc Vital Battery Charger Test, Revision 15
0-SI-EBT-250-100.2, 125Vdc Vital Battery Quarterly Test, Revision 11
0-PI-EBM-000-001.2, Battery Bank High Level Equalize Charge, Revision 15
0-SI-OPS-085-011.0, Reactivity Control Systems Moveable Control Assemblies, Revision 21

Section R22: Surveillance Testing

2-47W866-1, Flow Diagram Heating and Ventilation, Revision 34

Section R23: Temporary Plant Modifications

2-47W811-1, Flow Diagram - Safety Injection System, Revision 57

Section 4OA1: Performance Indicator Verification

NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 2
Sequoyah Nuclear Chemistry Department Sample Reports for 2004/2005
0-TI-CEM-000-001.3, Primary Chemistry Specifications, Appendix A, RCS Specific Activity, Revision 24
PER 85864, DEI Data Incorrectly Logged
0-SI-OPS-068-137.0, Reactor Coolant System Water Inventory, Revision 16

Section 4OA2: Identification and Resolution of Problems

PER 86800, Auxiliary Contacts 52a and 52b on RHR Pump 1B Under Rotated
PER 87029, Increase in Scope for Number of Breakers Associated with PER 85306
PER 87056, ERCW Pump J-A Breaker Closing Springs Failed to Discharge during Tagout
PER 87849, Past Operability Concerns for RHR Pump 1B Breaker (S/N 54350D-2-12852)
PER 22700, ERCW Cable Insulation Treeing
PER 68785, Inadequate Process in Place for Probable Maximum Precipitation
PER 64337, 2-PCV-82-262 Blowdown Issues
Letter from H. R. Rogers to R. Douet Regarding GL 91-18 Issues Open Following U1C13 Outage, dated November 17, 2004
Letter from H. R. Rogers to R. Douet Regarding GL 91-18 Issues Open Following U2C13 Outage, dated May 25, 2005

Section 4OA3: Event Followup

PER 99755, Unit 2 Reactor Trip Report - Loss of Generator

Section 4OA5: Other Activities

WO 05-778863, Second Dry Cask Campaign Using MPC SN-0007 and Hi-Storm SN-0076
0-SF-DCS-079-003.0, MPC Fuel Loading, Revision 12
0-SF-DCS-079-004.0, MPC Processing, Revision 13
0-SF-DCS-079-004.0, MPC Processing, Revision 14
PFE-735, Execution of NFTP-100 Procedure for SQN Dry Cask Campaign 2, Revision 0

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