



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
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ATLANTA, GEORGIA 30303-8931

July 30, 2007

Tennessee Valley Authority  
ATTN: Mr. William R. Campbell, Jr.  
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  
05000327/2007003 AND 05000328/2007003

Dear Mr. Campbell:

On June 30, 2007, the U.S. 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 July 6, 2007, with Mr. R. Douet 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, no findings of significance were identified.

In accordance with 10 *Code of Federal Regulations* (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 Publicly 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/

Gerald J. McCoy, Acting Chief  
Reactor Projects Branch 6  
Division of Reactor Projects

Docket Nos.: 50-327, 50-328, 72-034  
License Nos.: DPR-77, DPR-79

Enclosure: Inspection Report 05000327/2007003 and 05000328/2007003  
w/Attachment: Supplemental Information

cc w/encl: (See next page)

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-327, 50-328, 72-034

License Nos: DPR-77, DPR-79

Report No: 05000327/2007003 and 05000328/2007003

Licensee: Tennessee Valley Authority (TVA)

Facility: Sequoyah Nuclear Plant

Location: Sequoyah Access Road  
Soddy-Daisy, TN 37379

Dates: April 1, 2007 - June 30, 2007

Inspectors: S. Freeman, Senior Resident Inspector  
M. Speck, Resident Inspector

Approved by: G. McCoy, Acting Chief  
Reactor Projects Branch 6  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000327/2007-003, IR 05000328/2007-003; 04/01/2007 - 06/30/2007; Sequoyah Nuclear Plant, Units 1 and 2; resident inspector integrated inspection report.

The report covered a three-month period of inspection by resident inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

None.

B. Licensee-Identified Violations

None.

## REPORT DETAILS

### Summary of Plant Status:

Unit 1 operated at or near 100% rated thermal power (RTP) for the entire inspection period.

Unit 2 operated at or near 100% RTP for the entire inspection period.

### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

#### 1R01 Adverse Weather Protection

##### a. Inspection Scope

The inspectors observed the licensee response to a tornado watch on April 26, 2007. The inspectors reviewed licensee Procedure AOP-N.02, Tornado Watch/Warning, Revision 20 for its effectiveness to limit the risk of tornado-related initiating events and to adequately protect mitigating systems from the effects of a tornado. In addition, the inspectors verified the Emergency Diesel Generator (EDG) room intake dampers were properly failed open and verified that no loose debris was in the 500kV and 161kV Switchyards which could serve as missile hazards during a tornado. Documents reviewed are listed in the Attachment.

##### b. Findings

No findings of significance were identified.

#### 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 inspectors attempted 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.

- Unit 1 Containment Spray (CS) Pump Train B during maintenance on CS Pump 1A
- Unit 1 Motor-Driven Auxiliary Feedwater (MDAFW) Train A and Turbine-Driven Auxiliary Feedwater (TDAFW) during MDAFW Pump B maintenance and testing

- EDGs 2A, 1B, and 2B during EDG 1A Outage
- Unit 1 Residual Heat Removal (RHR) Train B during RHR Train A maintenance

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; that passive fire barriers were maintained in good material condition; and that compensatory measures for out-of-service, degraded, or inoperable fire protection equipment were implemented in accordance with the licensee's fire plan.

- EDG Building
- Control Building Elevation 706 (Cable Spreading Room)
- Control Building Elevation 669 (Mechanical Equipment Room, 250-VDC Battery and Battery Board Rooms)
- Auxiliary Building Elevation 690 (Corridor)
- Control Building Elevation 685 (Auxiliary Instrument Rooms)
- Auxiliary Building Elevation 734 (Switchgear Rooms and Battery Board Rooms)
- Auxiliary Building Elevation 714 (Corridor)
- Control Building Elevation 732 (Mechanical Equipment Room and Relay Room)
- Auxiliary Building Elevation 669 (Unit 2 Turbine-Driven AFW Pump Room)

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

.1 Internal Flooding

a. Inspection Scope

The inspectors reviewed the EDG 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 licensee's moderate energy line break flooding study in order to fully understand the licensee's flood mitigation strategy and then verified that the assumptions and results remained valid. The inspectors also walked down the EDG buildings to verify the assumed flooding sources, adequacy of common area drainage, integrity of conduit seals, and status of building compartmentalization to ensure that a flooding event would not impact more than one EDG. The inspectors reviewed licensee Procedure AOP-M.01, Loss of

Essential Raw Cooling Water (ERCW), Revision 15, to ensure that if a break occurred, procedures existed to identify and isolate the leak. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

.2 External Flooding

a. Inspection Scope

The inspectors reviewed the turbine building external flood protection design to assess the susceptibility to heavy rains and its potential to result in an initiating event, (e.g., plant trip). The inspectors reviewed flood analysis and design documents including the Updated Final Safety Analysis Report (UFSAR) Sections 2.3, 2.4, and Appendix 2.4A, Flood Protection Plan. The inspectors walked down flood protection barriers around the 6.9 kV Unit Boards to verify their proper installation and examined gutter drains, conduits and hydrostatic concrete seals which could possibly provide a bypass around the installed barriers. The inspectors also reviewed Problem Evaluation Report (PER) 66945, written in 2004 following a heavy downpour, to verify that the corrective actions remained adequate. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

a. Inspection Scope

The inspectors observed as-found simulator training on June 18, 2007. The training involved a control air system leak requiring isolation: a Chemical and Volume Control System (CVCS) pressure transmitter failure requiring an operator take manual control of letdown flow followed by a feedwater header break. Operators initiated a manual reactor trip and a steam generator tube rupture ensued, which required manual initiation of safety injection and plant cooldown and depressurization. Anomalies included loss of the TDAFW pump and A-train MDAFW pump. 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 Specification (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.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed Work Order (WO) 07-777633-000, Adverse Trend on Leading Edge Flow Measurement System Feed Flow Transducer Performance, to verify the effectiveness 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); and 8) appropriateness of performance criteria for structures, systems, or components (SSCs) and functions classified as (a)(2).

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 9, and Instruction 0-TI-DSM-000-007.1, Risk Assessment Guidelines, Revision 8. Documents reviewed are listed in the Attachment.

- Removal of Unit 2 TDAFW Pump from service for testing
- Concurrent maintenance on Common Station Service Transformer C and one 500kV Supply Breaker to Inter-Tie Transformer
- Removal of MDAFW Pump 1B from service for maintenance and testing
- Realignment of Component Cooling System (CCS) Pump 2B concurrent with EDG 1B Outage
- Multiple CCS alignment changes to perform CCS Pump C-S Discharge Check Valve testing and CCS Pump 1B-B performance testing
- Emergent Work in 161kV Switchyard during TDAFW Outage
- Removal of MDAFW Pump 1A from service for maintenance and testing

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 compensatory measures worked as stated and the measures 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 121872, Changing Modes With AFW Flow Indicator Channel Inoperable
- PER 123704, Ventilation Access Cover Off in Common Flow Path to Both Trains of Auxiliary Building Gas Treatment System (ABGTS)
- PER 121955, Valve 1-67-1601B Out of Normal Full-Open Position Reducing Available ERCW Flow to Main Control Room (MCR) Chiller B-B
- PER 117954, ERCW Flow to MCR Chiller A-A in Accident Conditions Below Design
- PER 125245, EDG 2A-A Generator and Electric Panel Vent Fan Failed to Auto-Start
- PER 123056, Unit 2 TDAFW Slow to Trip on Mechanical Linkage
- PER 124102, Leakage Through ERCW Pump Air Release Valve

### b. Findings

No findings of significance were identified.

## 1R19 Post-Maintenance Testing

### a. Inspection Scope

The inspectors reviewed the five 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.

- WO 06-779697-000, Change Oil on CS Pump 1A
- WO 04-771117-000, Rebuild ERCW Pump P-B
- WO 07-770514-000, EDG 1B Overspeed Trip Check

- WO 07-776935-000, Troubleshoot and Repair EDG 2A-A Generator and Electric Panel Fan
- WO 05-779694-000, Rackout and Inspect ERCW Pump L-B 6.9kV Breaker

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the five 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, 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:

- 1-SI-OPS-082-024.A, 1A-A D/G 24-Hour Run and Load Rejection Testing, Revision 15
- 0-SI-SXP-067-201.L, Essential Raw Cooling Water Pump L-B Performance Test, Revision 10\*
- 0-SI-SLT-030-258.1, Containment Isolation Valve Local Leak Rate Test Purge Air, Revision 5 (Unit 1)\*\*
- 2-SI-ICC-003-121.0, Calibration of Condensate Storage Tank Suction Header Pressure Switches to Auxiliary Feedwater System (PS-3-121A, PS-3-121B, and PS-3-121D), Revision 15
- 0-SI-OPS-068-137.0, Reactor Coolant System Water Inventory, Revision 19 (Unit 1)\*\*\*

\*This procedure included inservice testing requirements.

\*\*This procedure included testing of a large containment isolation valve.

\*\*\*This procedure included an RCS leakage detection surveillance.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed WO 06-781106-000, Hook Up Temporary Water and In-line Heater to Boric Acid Batching Tank, the associated 10 CFR 50.59 screening, and the included technical evaluation against the UFSAR, the TS, and the licensee's procedure for temporary alterations to verify that the work did not affect the operability or availability of any safety system. The inspectors walked down the WO to ensure it was installed in accordance with the included instructions and reviewed post installation

testing to verify the actual impact on permanent systems was adequately verified by the tests. The inspectors also verified that the procedure for using the batching tank was updated to reflect the work and to ensure that plant configuration control was maintained. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

a. Inspection Scope

Resident inspectors observed the conduct of two routine licensee emergency drills during the inspection period: An off-year annual exercise on April 18, 2007 and a simulator observation of a regular drill on June 4, 2007. The inspectors evaluated the drills 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 and Technical Support Center (TSC) to verify that event classification and notifications were done in accordance with Procedure EPIP-1, Emergency Plan Classification Matrix, Revision 39. 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. Documents reviewed are listed in the Attachment.

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 three PIs listed below for the period April 1, 2006 through March 30, 2007 for Unit 1 and Unit 2. To verify the accuracy of the Performance Indicator (PI) data reported during that period, PI definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Indicator Guideline", Revision 4, were used to verify the basis in reporting for each data element.

Cornerstone: Initiating Events

- Unplanned Scrams per 7000 Critical Hours
- Scrams with Loss of Normal Heat Removal
- Unplanned Power Changes per 7000 Critical Hours

The inspectors reviewed selected Licensee Event Reports (LERs) and portions of the operator logs to verify that the licensee had accurately identified the number of scrams and unplanned power changes greater than 20 percent that occurred during the previous four quarters for both units. The inspectors also reviewed the accuracy of the number of critical hours reported and the licensee's basis for crediting normal heat removal capability for each of the reported scrams.

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 Licensee Followup on Actions from Mid-Cycle Self-Assessment

a. Inspection Scope

Following a mid-cycle self-assessment in September 2005, modeled on the biennial Institute of Nuclear Power Operations (INPO) evaluation, the licensee identified that shortfalls in meeting management standards had not been formally evaluated and corrected. Because these types of programmatic problems can develop into bigger issues the inspectors reviewed licensee actions to resolve this issue. The inspectors reviewed PER 90052 dealing with this event; interviewed personnel in corrective actions, operations, maintenance and engineering departments; and reviewed several of the corrective actions. Documents reviewed are listed in the Attachment.

b. Findings and Observations

There were no findings of significance identified during this review. The inspectors determined that the root cause analysis was thorough and that immediate and long-term corrective actions appeared to be adequate. The root cause team performed a common cause barrier analysis using the Performance Improvement International (PII) methodology for evaluating human error and determined that the site had not completely implemented actions from the previous World Association of Nuclear Operators' (WANO) evaluation in 2004. The licensee developed several actions to address this cause and implemented them between October 2005 and January 2007. These included plus/delta logbooks for supervisors to observe and correct behaviors that did not meet expectations and department clock resets, which provided a set of indicators

that would drive the correct behaviors. The inspectors reviewed these actions and verified that they addressed the cause and were actually being implemented.

.3 Annual Sample of Elevated Dose Rates in Unit 1 Piping

a. Inspection Scope

From March 12 to March 14, 2006, significantly increased dose rates (two to three times normal) were found in charging pump rooms, pipe chases, and mixed resin bed valve locations of Unit 1. The licensee restricted access to affected areas and changed the posting for the Unit 1 Elevation 690 Pipe Chase from a Radiation Area to a High Radiation Area. The licensee replaced the Reactor Coolant System (RCS) filter and flushed system piping to reduce radiation levels. Because of the sudden increase in radiation levels and the potential for increased personnel exposure, the inspectors reviewed licensee actions to resolve this issue. The inspectors reviewed PER 99184 dealing with this event and the associated root cause analysis. The inspectors also interviewed personnel in the chemistry, operations, and training departments and reviewed several of the corrective actions. Documents reviewed are listed in the Attachment.

b. Findings and Observations

No findings of significance were identified. The inspectors noted that no personnel exceeded any exposure limits as a result of the elevated dose rates. The root cause investigation was performed by a multi-discipline team of Engineering, Chemistry, Operations and Radcon personnel using Kepner-Tregoe analysis and Event and Causal Factor Charting. The root cause of the event was attributed to a knowledge deficiency regarding the behavior of macroporous resin and the need to flush the resin bed prior to placing it back in service after a brief period of no flow. In this event, activated particulate corrosion products trapped in the bed accumulated during the cycle carried over to an already highly loaded RCS filter and subsequently to plant piping, raising radiation levels. The inspectors reviewed training materials for operations, chemistry, and radiation protection personnel and determined that they adequately conveyed lessons learned from this event and verified that required procedural changes had been completed. The inspectors noted that a corrective action requiring a procedure change was closed to a procedure change request, instead of the actual change, which was not in accordance with the licensee's corrective action procedure, SPP-3.1; however, this had been noted by the licensee's Nuclear Assurance personnel and documented in PER 117769. The licensee indicated that corrective action effectiveness would be assessed by monitoring RCS particulate activity and area dose rates during end-of-cycle deboration for Unit 2 Cycle 14 and Unit 1 Cycle 15. No adverse indications were noted prior to the Unit 2 outage of October to December 2006. None have been noted for the current cycle (Cycle 15) for Unit 1.

#### .4 Semi-Annual Trend Review

##### a. Inspection Scope

As required by Inspection Procedure 71152, the inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also included licensee trending efforts and licensee human performance results. The inspectors' review nominally considered the six-month period of January 2007 through June 2007, although some examples expanded beyond those dates when the scope of the trend warranted. Specifically, the inspectors consolidated the results of daily inspector screening discussed in Section 4OA2.1 into a log, reviewed the log, and compared it to licensee trend reports for the period from October 2006 through March 2007 in order to determine the existence of any adverse trends that the licensee may not have previously identified. The inspectors also independently reviewed RCS leakage data for the six-month period of January 2007 through June 2007.

##### b. Findings and Observations

No findings of significance were identified. In general, the licensee had identified trends and appropriately addressed them in their corrective action program. The inspectors evaluated the licensee trending methodology and observed that the licensee had performed a detailed review. The licensee routinely reviewed cause codes, involved organizations, key words, and system links to identify potential trends in their data. The inspectors compared the licensee process results with the results of the inspectors' daily screening and did not identify any discrepancies or potential trends that the licensee had failed to identify.

Following the end of the Cycle 14 outage in December 2006 the licensee noticed higher levels of formaldehyde, two to three ppm, in the Unit 2 containment atmosphere prior to each weekly entry. To ensure worker safety, the licensee began increased purging of the Unit 2 containment prior to entry in order to reduce concentrations down to less than 0.5 ppm. This was a conservative decision as other methods were available to control the concentration; however, at the end of the inspection period the licensee had used 624 hours out of the 1000 allowed by TS for purging the containment and had not been successful in locating the source. Formaldehyde concentrations had recently decreased to approximately 1 ppm prior to entry. The licensee extrapolated the purge time to the end of the year and estimated that the time would exceed the 1000-hour limit sometime in late October 2007. The licensee has developed plans to install a filtration unit in the containment to reduce formaldehyde levels and purge times.

#### 4OA3 Event Followup

- .1 (Closed) Licensee Event Report (LER) 050000327/2006-001, Potential Loss of Component Cooling Water to the Seal Water Heat Exchanger During an Appendix R Fire

On February 9, 2006, during an operating experience review, licensee personnel identified a scenario in which a 10 CFR 50 Appendix R fire event could result in a loss of CCS to the chemical and volume control system seal water heat exchanger. This loss of CCS would result in high suction temperature on the running Centrifugal Charging Pump (CCP) causing a lack of adequate suction head. The temperature could be high enough to potentially damage both the CCP and the Reactor Coolant Pump (RCP) seals. The enforcement aspects of this finding are discussed in Section 4OA7. This LER is closed.

.2 (Closed) Licensee Event Report (LER) 05000328/2007-002-00, Unit 2 Manual Reactor Trip Following Partial Loss of Main Feedwater Flow

On March 13, 2007, Unit 2 was manually tripped following a partial loss of main feedwater flow to all steam generators. The immediate cause was failure of the Main Feedwater Pump 2A control system due to a faulty local/remote switch internal to the pump speed indicating controller. The inspectors reviewed the LER and PER 121526, Unit 2 Manual Reactor Trip Due to Loss of Main Feed Water Flow, which documented this event in the licensee corrective action program, to verify that the cause of the reactor trip was identified and that corrective actions were appropriate. The inspectors also verified that timely notifications were made in accordance with 10 CFR 50.72, that licensee staff properly implemented the appropriate plant procedures, and that plant equipment performed as required. No findings of significance were identified and no violation of NRC requirements occurred. This LER is closed.

4OA5 Other Activities

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

a. Inspection Scope

The inspectors reviewed the third dry-cask-loading campaign of the 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 multi-purpose 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. The inspectors also reviewed ISFSI document control practices to verify that changes to the required ISFSI procedures and equipment were performed in accordance with guidelines established in local procedures and 10CFR72.48. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

.1 Exit Meeting Summary

On July 6, 2007, 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.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee personnel

D. Bodine, Chemistry/Environmental Manager  
D. Boone, Radiation Protection Manager  
K. Clayton, Maintenance Manager  
R. Douet, Site Vice President  
B. Dungan, Outage and Site Scheduling Manager  
R. Gladney, Systems Engineering Manager  
K. Jones, Engineering Manager  
Z. Kitts, Licensing Engineer  
D. Kulisek, Plant Manager  
G. Laurie, Modifications Manager  
T. Marshall, Operations Superintendent  
J. McGuire, Nuclear Assurance  
G. Morris, Licensing and Industry Affairs Manager  
M. Palmer, Operations Manager  
K. Parker, Maintenance and Modifications Manager  
J. Proffitt, (Acting) Site Licensing Supervisor  
R. Reynolds, Site Security Manager  
R. Rogers, Engineering Manager  
N. Thomas, Licensing Engineer  
S. Varner, Modifications  
T. Wallace, Training Manager  
K. Wilkes, Emergency Preparedness Manager  
T. Whitten, Operations Superintendent

#### NRC personnel:

R. Bernhard, Region II, Senior Reactor Analyst  
B. Moroney, Project Manager, Office of Nuclear Reactor Regulation

### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

#### Closed

|                     |     |   |
|---------------------|-----|---|
| 05000327/2006001-00 | LER | Potential Loss of Component Cooling Water to the Seal Water Heat Exchanger During an Appendix R Fire (Section 4OA3) |
| 05000328/2007002-00 | LER | Unit 2 Manual Reactor Trip Following Partial Loss of Main Feedwater Flow (Section 4OA3)                             |

## LIST OF DOCUMENTS REVIEWED

### **Section R01: Adverse Weather Protection**

AOP-N.02, Tornado Watch/Warning, Revision 19  
BP-128, Site Tornado Procedure, Revision 0

### **Section R04: Equipment Alignment**

1-TO-2007-0017 on Containment Spray Pump 1A  
0-SO-72-1, Containment Spray Systems, Revision 31  
0-SO-72-1 Attachment 3, Containment Spray Systems Power Checklist 1-72-1.02, Change 10  
1,2-47W812-1, Flow Diagram Containment Spray System, Revision 43  
1,2-47W803-2, Flow Diagram Auxiliary Feedwater, Revision 62  
1,2-47W810-1, Flow Diagram Residual Heat Removal System, Revision 49

### **Section R06: Flooding**

AOP-N.05, Earthquake, Revision 12  
AOP-M.01, Loss of Essential Raw Cooling Water, Revision 15  
Regulatory Guide 1.102, Flood Protection for Nuclear Power Plants, Revision 1  
SQS40056, Moderate Energy Line Break Flooding Study, Revision 12  
UFSAR Section 2.4, Hydrologic Engineering  
UFSAR Section 3.6, Protection Against Effects Associated With the Postulated Rupture of Piping  
IN 2007-01, Recent Operating Experience Concerning Hydrostatic Barriers  
1,2-45W804-1, Turbine Building El. 706 Conduit and Grounding Floor Plan, Columns A-E, Revision 19  
1,2-45W880-31-1, Conduit Sealing for MELB/Flooding, Revision 0  
1,2-45W880-31, Conduit Sealing for MELB/Flooding, Revision 1  
1,2-45W880-31-1, Conduit Sealing for MELB/Flooding, Revision 0  
1,2-45W832-1, Conduit and Grounding Floor El. 722.0 Floor Plan, Revision 0  
1,2-47W475-1, Turbine Building Mechanical Embedded Piping Fill Slab, Revision 2  
0-TI-CEM-000-016.7, Sampling Methods - Miscellaneous Systems, Section 6.15 Emergency Diesel Generator 7-Day Tanks, Revision 23

### **Section R11: Licensed Operator Requalification**

EPIP-1, Emergency Plan Classification Matrix, Revision 39  
E-0, Reactor Trip or Safety Injection, Revision 29  
ES-0.1, Reactor Trip Response, Revision 30  
E-3, Steam Generator Tube Rupture, Revision 16  
1,2-47W846-1, Flow Diagram Control and Service Air System, Revision 71

### **Section R13: Maintenance Risk Assessments and Emergent Work Evaluation**

Sentinel Printout for April 2, 2007 to April 22, 2007  
 Maintenance Shift Supervisor Daily Schedule 24-hour Look-ahead of April 6, 2007  
 Sentinel Printout for April 16, 2007 to May 6, 2007  
 Sentinel Printout for April 23, 2007 to May 13, 2007  
 Sentinel Printout for May 7, 2007 to May 25, 2007  
 Sentinel Printout for May 21, 2007 to June 10, 2007  
 0-SO-70-1, Component Cooling Water System "B" Train, Revision 35  
 Sentinel Printout for May 29, 2007 to June 18, 2007  
 Sentinel Printout for June 11, 2007 to June 29, 2007

### **Section R15: Operability Evaluations**

NEDP-22, Functional Evaluations, Revision 4  
 WO 07-770683-000, Troubleshoot AFW Flow Indication Loop 2-F-3-163  
 2-SI-ICC-003-163.0, Channel Calibration of Steam Generator 1 Auxiliary Feedwater Inlet Flow Loop 2-F-3-163, Revision 8  
 FE 41966, Access Panel Door Found Removed from Common Duct Work Used By ABGTS  
 UFSAR Section 6.2.3.2.3, Auxiliary Building Gas Treatment System  
 1,2-47W866-11, Flow Diagram Heating and Ventilating Air Flow - Auxiliary Building, Revision 9  
 1,2-47W866-10, Flow Diagram Heating and Ventilating Air Flow - Auxiliary Building, Revision 17  
 1-47W845-6A, Connectivity Diagram Essential Raw Cooling Water System, Revision 2  
 Functional Evaluation, ERCW Flow to the B-B Main Control Room Chiller

### **Section R19: Post Maintenance Testing**

1-SI-SXP-072-201.A, Containment Spray Pump 1A-A Performance Test, Revision 14  
 0-SI-SXP-067-201.P, Essential Raw Cooling Water Pump P-B Performance Test, Revision 15  
 WO 06-779486-000, ERCW Pump P-B Time Delay Relay Testing  
 MMDP-3, Guidelines for Planning and Execution of Troubleshooting Activities, Revision 3  
 WO 07-776622-000, Troubleshoot Governor Actuator for EDG 1B per MMDP-3  
 1-SI-OPS-082-007B, Electrical Power System Diesel Generator 1B-B, Revision 42  
 1,2-45N767-3, 6900V Diesel Generators Schematic Diagram Sheet 3, Revision 24  
 0-SO-67-1, Essential Raw Cooling Water, Revision 70

### **Section R22: Surveillance Testing**

Regulatory Guide 1.9, Selection, Design, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electric Power Systems at Nuclear Power Plants, Revision 3  
 1,2-47W600-65, Mechanical Instruments and Controls, Revision 8  
 2-47W427-1, Mechanical Feedwater Piping, Revision 9  
 1,2-45N657-5, Wiring Diagrams Separation & Misc Aux Relays Schematic Diagrams Sheet 5, Revision 18  
 1,2-45N779-10, Wiring Diagrams 480V Shutdown Aux Power Schematic Diagrams Sheet 10, Revision 28

2-45W646-6, Wiring Diagrams Feedwater Pump and Turbines Schematic Diagrams, Revision 17  
 2-45N2635-84, Wiring Diagrams Local Instrument Panels 2-L-381 Connection Diagrams, Revision 4  
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 2-45W2614-11, Wiring Diagram Auxiliary Feedwater Pump & Turbines Connection Diagrams, Revision 2  
 2-45W2614-12, Wiring Diagram Auxiliary Feedwater Pump & Turbines Connection Diagrams, Revision 0  
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### **Section R23: Temporary Plant Modifications**

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 0-SO-62-10, Boric Acid Batch, Transfer, and Storage System, Revision 29  
 Technical Evaluation and 10CFR 50.59 Screening Review for 0-SO-62-10, Revision 27  
 PER 123335, Temporary In-line Heaters Do Not Have Required Documentation

### **Section 1EP6: Drill Evaluation**

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### **Section 40A2: Identification and Resolution of Problems**

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 2-SO-77-8, CVCS Cation Bed Demineralizer Resin Replacement, Revision 16  
 0-GO-14-1, Operator Rounds - Aux Building 1 Round, Revision 12  
 0-GO-14-2, Operator Rounds - Aux Building 2 Round, Revision 13  
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 0-MI-MRR-068-083.0, Reactor Coolant Filter Changeout, Revision 10  
 Sequoyah Nuclear Plant Integrated Quarterly Trend Report for October 2006 to December 2006  
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### **Section 40A5: Other Activities**

0-SI-DCS-079-007.0, HI-STORM Surface Dose Rates NRC COC #1014, Amendment 2, Revision 1  
 CTP-DCS-100.6, Hi-Storm and MPC Storage and Pre-Use Inspections, Revision 1  
 SQN-DCS-200.1, SQN-Dry Cask Preparations, Start Up and Shut Down, Revision 2  
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CTP-DCS-300.1, Spent Fuel Cask Loading Verification, Revision 0  
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10 CFR 48 Screening, Revision of SQN-DCS-200.1, SQN-Dry Cask Preparations  
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Guidelines  
10 CFR 48/50.59 Screenings, Auxiliary Building Crane Truck Replacements  
10 CFR 48 Screening, Revision of CTP-DCS-100.1, HI-STORM Receipt Inspection  
10 CFR 48 Screening, Implement DCN D22156, Incorporating HOLTEC CoC 1014 Amendment  
2, MPC Volume Determination, ISFSI Pad Icing, and Material Change for HI-TRAC Pool Lid  
Bolts