UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

Report Nos.: 50-327/89-22, 50-328/89-22

Licensee: Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

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

Facility Name: Sequoyah Units 1 and 2

Inspection Conducted: September 6, 1989 thru October 5, 1989

Lead Inspector: K. M. Jenison — Nov 7, 1989
K. Jenison, Senior Resident Inspector — Date Signed

Inspectors: P. Harmon, Senior Resident Inspector
D. Loveless, Resident Inspector

Approved by: Linda J. Watson — 11/7/89
L. J. Watson, Chief, Project Section 1 — Date Signed
TVA Projects Division,

SUMMARY

Scope:

This announced inspection involved inspection effort by the Resident Inspectors in the area of operational safety verification including control room observations, operations performance, system lineups, radiation protection, safeguards, and housekeeping inspections. Other areas inspected included maintenance observations, surveillance testing observations, review of previous inspection findings, follow-up of events, review of licensee identified items, and review of inspector follow-up items.

Results:

Management focus on TACF resolutions was considered aggressive and effective during the reporting period. The site goal for resolving long-standing TACFs was met as a result of management attention in this area.

One weakness regarding management handling of the RCS backleakage to the BIT was noted in paragraph 5.

The areas of Operations, Maintenance, and Surveillance were adequate and fully capable to support current plant operations. The observed activities of the control room operators were professional and well executed.

No violations were identified.

One unresolved item* was identified:

URI 327,328/89-22-01, Adequacy of Source Check Methodology for Radiation Monitors, paragraph 5.

No deviations or inspector follow-up items were identified.

* Unresolved items are matters which more information is required to determine whether they are acceptable or may involve violations or deviations.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

J. Bynum, Vice President, Nuclear Power Production
*J. La Point, Site Director
C. Vondra, Plant Manager
T. Arney, Quality Assurance Manager
*R. Beecken, Maintenance Superintendent
M. Burzynski, Site Licensing Staff Manager
*M. Cooper, Compliance Licensing Manager
D. Craven, Plant Support Superintendent
S. Crowe, Site Quality Manager
R. Fortenberry, Technical Support Superintendent
J. Holland, Corrective Action Program Manager
W. Lagergren, Jr., Operations Manager
*M. Lorek, Operations Superintendent
R. Pierce, Mechanical Maintenance Group Supervisor
A. Ritter, Engineering Assurance Engineer
*R. Rogers, Supervisor Engineering Support Section
M. Sullivan, Radiological Controls Superintendent
S. Spencer, Licensing Engineer
C. Whittemore, Licensing Engineer

NRC Employees

*L. J. Watson, Chief, Project Section 1
*B. A. Wilson, Assistant Director for Inspection Programs

*Attended exit interview

Acronyms and initialisms used in this report are listed in the last paragraph.

2. Operational Safety Verification (71707)

a. Control Room Observations

The inspectors conducted discussions with control room operators, verified that proper control room staffing was maintained, verified that access to the control room was properly controlled, and that operator behavior was commensurate with the plant configuration and plant activities in progress, and with on-going control room operations. The operators were observed adhering to appropriate, approved procedures, including Emergency Operating Procedures, for the on-going activities.

The inspector also verified that the licensee was operating the plant in a normal plant configuration as required by TS and when abnormal

conditions existed, that the operators were complying with the appropriate LCO action statements. The inspector verified that leak rate calculations were performed and that leakage rates were within the TS limits.

The inspectors observed instrumentation and recorder traces for abnormalities and verified the status of selected control room annunciators to ensure that control room operators understood the status of the plant. Panel indications were reviewed for the nuclear instruments, the emergency power sources, the safety parameter display system and the radiation monitors to ensure operability and operation within TS limits.

No violations or deviations were observed.

b. Control Room Logs

The inspectors observed control room operations and reviewed applicable logs including the shift logs, operating orders, night order book, clearance hold order book, and the configuration log to obtain information concerning operating trends and activities. The TACF log was reviewed to verify that the use of jumpers and lifted leads causing equipment to be inoperable was clearly noted and understood. The licensee is actively pursuing correction to conditions requiring TACFs. No issues were identified with these specific logs.

Plant chemistry reports were reviewed to confirm steam generator tube integrity in the secondary and to verify that primary plant chemistry was within TS limits.

In addition, the implementation of the licensee's sampling program was observed. Plant specific monitoring systems, including seismic, meteorological and fire detection indications, were reviewed for operability. A review of surveillance records and tagout logs was performed to confirm the operability of the RPS.

No violations or deviations were observed.

c. Safety-Related System Alignment

The inspectors walked down accessible portions of the Vital Battery I, Vital Inverter I and Associated Battery Boards on Units 1 and 2 to verify operability, power supply, and proper breaker alignment. In addition, the inspectors verified that a selected portion of the containment isolation lineup was correct.

No deviations or violations were identified.

d. Plant Tours

Tours of the diesel generator, auxiliary, control, and turbine buildings, and exterior areas were conducted to observe plant equipment conditions, potential fire hazards, control of ignition sources, fluid leaks, excessive vibrations, missile hazards, and plant housekeeping and cleanliness conditions. The plant was observed to be clean and in adequate condition. The inspectors verified that maintenance work orders had been submitted as required and that followup activities and prioritization of work was accomplished by the licensee.

Several instances of unsecured welding and test carts located throughout the auxiliary building were brought to the attention of plant management. These items were properly secured or removed.

The inspector visually inspected the major components for leakage, proper lubrication, cooling water supply, and any general condition that might prevent fulfilling their functional requirements.

The inspector observed shift turnovers and determined that necessary information concerning the plant systems status was addressed.

No violations or deviations were identified.

e. Radiation Protection

The inspectors observed HP practices and verified the implementation of radiation protection controls. On a regular basis, RWPs were reviewed and specific work activities were monitored to ensure the activities were being conducted in accordance with the applicable RWPs. Workers were observed for proper frisking upon exiting contaminated areas and the radiologically controlled area. Selected radiation protection instruments were verified operable and calibration frequencies were reviewed.

The inspector reviewed efforts to determine the cause of high radiation levels in the holdup tanks (HUT) and the HUT rooms. The rooms and tanks had increased from a nominal level of approximately 10 mr at tank contact and less than 5 mr for the tank rooms to 100 mr at tank contact and 40 mr for the general room on or about August 26, 1989. At the time of the increase, RCS back-leakage into the BIT discharge lines as described in paragraph 5, was being conducted to the HUT. The tanks were sampled to verify that spent resins flushed to waste processing two days previously had not inadvertently entered the HUT. Cover gas from the Waste Gas System was also sampled. Results of the licensee's investigation determined that the high activity levels in the tanks and rooms were caused by higher than normal activity in the cover gas being supplied to the tanks, and introduction of RCS water directly to the HUT without benefit of the degassing effects when the VCT is receiving all RCS liquids. The activity levels gradually decreased over the next several days, and were essentially normal by September 12. This

investigation appeared thorough and well planned. The inspector had no further questions.

f. Safeguards Inspection

In the course of the monthly activities, the inspectors included a review of the licensee's physical security program. The performance of various shifts of the security force was observed in the conduct of daily activities including: protected and vital area access controls; searching of personnel and packages; escorting of visitors; badge issuance and retrieval; and patrols and compensatory posts.

In addition, the inspectors observed protected area lighting, and protected and vital areas barrier integrity. The inspectors verified interfaces between the security organization and both operations and maintenance. Specifically, the Resident Inspectors:

1. witnessed firearms training and qualification
2. interviewed individuals with security concerns
3. visited central and secondary alarm station
4. verified protection of Safeguards Information
5 verified onsite/offsite communication capabilities

No violations or deviations were identified.

g. Conditions Adverse to Quality

The inspectors reviewed selected items to determine that the licensee's problem identification system as defined in AI-12, Corrective Action, was functioning. CAQR's were routinely reviewed for adequacy in addressing a problem or event. Additionally, a sample of the following documents were reviewed for adequate handling:

1. Work Requests
2. Potential Reportable Occurrences
3. Radiological Incident Reports
4. Problem Reporting Documents
5. Correct-on-the-Spot Documents
6. Licensee Event Reports

Of the items reviewed, each was found to have been identified by the licensee with immediate corrective action in place. For those issues that required long term corrective action the licensee was making adequate progress.

No violations or deviations were observed.

No trends were identified in the operational safety verification area. General conditions in the plant were adequate. The number of control room maintenance and modification items is staying fairly constant. Radiation protection and security are adequate to continue two unit operations.

3. Surveillance Observations and Review (61726)

Licensee activities were directly observed/reviewed to ascertain that surveillance of safety-related systems and components was being conducted in accordance with TS requirements.

The inspectors verified that: testing was performed in accordance with adequate procedures; test instrumentation was calibrated; LCOs were met; test results met acceptance criteria and were reviewed by personnel other than the individual directing the test; deficiencies were identified, as appropriate, and any deficiencies identified during the testing were properly reviewed and resolved by management personnel; and, system restoration was adequate. For completed tests, the inspector verified that testing frequencies were met and tests were performed by qualified individuals.

Licensee personnel performing surveillance routines on area radiation monitors determined that source checks were being performed with a light emitting diode (LED) type check source conducted directly into the detectors' photo-multiplier. TS 3.3.3.1 requires operability determinations which include source checks. Source check is a defined term in TS and specifies that the channel sensor is to be exposed to a radioactive source. The licensee made the initial determination that the detectors which use LEDs as source check devices were inoperable and entered the appropriate action statements for those instrument circuits.

After further review, the licensee determined that certain other radiation monitors used installed check sources which did not check the entire channel. Instead of exposing the check source to the sensor's crystal, the check source coupled to a secondary source crystal then to the sensor's photo-multiplier tube. The sensor's primary crystal was not involved when the source check occurred.

As a result of these determinations, the licensee disassembled those detectors having LED check sources in order to perform an adequate Channel Functional Test. A radioactive test source can then be presented at the detectors' crystal. The technical resolution of the radioactive type source checks is still being pursued by the licensee. According to the licensee, at least 35 other nuclear plants have the same type detectors with similar source check arrangements, therefore, this issue may have generic implications. The licensee is presently considering options which include requesting TS amendments, design changes to the affected detectors, or justification for continued use of the present radioactive source check method. All of the detectors involved are provided by the same manufacturer. Resolution of the operability of plant systems monitored by the detectors and handling of the potential generic aspects will be tracked by URI 327,328/89-22-01.

The following activity was observed/reviewed with no deficiencies identified:

SI-130.1.1, Turbine Driven Auxiliary Feedwater Pump 1A-S Quarterly Operability Test. (also see paragraph 4)

4. Monthly Maintenance Observations and Review (62703)

Station maintenance activities on safety-related systems and components were observed/reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides, industry codes and standards, and in conformance with T.S.

The following items were considered during this review: LCOs were met while components or systems were removed from service; redundant components were operable; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; procedures used were adequate to control the activity; troubleshooting activities were controlled and the repair records accurately reflected the activities; functional testing and/or calibrations were performed prior to returning components or systems to service; QC records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; radiological controls were implemented; QC hold points were established where required and were observed; fire prevention controls were implemented; outside contractor force activities were controlled in accordance with the approved QA program; and housekeeping was actively pursued.

The following work requests were reviewed:

a. WR B758901, Governor Valve 1-VLV-1-51 Stuck.

On September 25, 1989, the licensee performed SI-130.1.1, Turbine Driven Auxiliary Feedwater Pump 1A-S Quarterly Operability Test - Unit 1. The Unit 1 Auxiliary Feedwater pump only achieved approximately 900 rpm. The ASOS declared the pump inoperable and LCO 3.7.1.2 was entered. Later that day, the inspector observed the work in progress under WR B758901. Governor valve 1-VLV-1-51, which governs the main steam supply to the turbine driven auxiliary feedwater pump, stuck during the initial run.

Initially the WR allowed for a test run of the pump to troubleshoot the problem. After manually working the valve, the pump came up to speed and appeared to function properly. However, following the pump run, the governor valve did not come back to its normal neutral position. The valve was almost fully closed. From this position the pump would not start and operate properly. The WR was replanned to disassemble the linkage between the stem and the servo. The engineer observed a "rusty spot" when the linkage was removed. This was lubricated and replaced.

During the PMT, the governor valve still would not return to its proper position, but the pump would restart and operate properly. After several iterative replannings of the WR, portions of the valve and the servo were torn down, cleaned and lubricated under MI-46.1, Disassembly, Inspection, and Reassembly of the Auxiliary Feedwater Pump Turbine. This was accompanied by contact with the vendor.

On October 27, 1989 the governor valve was freed, the null voltage was adjusted and the governor valve worked properly. The licensee performed SI-130.1.1 satisfactorily and the pump was declared operable.

b. WP 12665, Install Piping and Instrumentation as Specified per ECN L5609

The inspector reviewed the new sample panel installed in the New Make-up De-Ionized Water Facility at the plant under WP 12665. The review was conducted to verify corrective actions associated with the issues described in PRD SQF880104P. The PRD stated that the process description and the manufacturer's information on the new sample panel at the new makeup water treatment plant at Sequoyah do not agree. The process description states that the Conoflow backpressure regulating valve should be set at approximately 25 psig and that the sum of all flows will be 800 ml/min. The manufacturers data lists 17 gallons per hour (1070 ml/min) for a set point of 25 psig.

The corrective action proposed and agreed upon was to provide this information to Operations, and request that system operating procedures (SOIs) include an instruction to set the pressure regulators for the required flow values. The information was provided to Operations on December 15, 1988, however, the SOIs associated with the system will not be generated for the system until the WP has been closed.

The inspector reviewed the design of the panel with respect to the question of over pressurization. Upon entering the panel, sample flows (of which none are greater than 200 psig) pass through a Conoflow brand pressure regulating valve model IR401 which is designed to accept an input pressure of up to 3000 psig and break it down to less than 100 psig.

Following the pressure reduction the sample flows travel through their respective Wallace and Tiernan flow controllers and associated purge meters (rotameters) where flows are adjusted. These rotameters have a design pressure rating of 250 psig. The flow is then directed through the back pressure regulator valves.

These rotameters are adjusted by the operators to achieve a flow rate of approximately 300 cc/minute. The operator's manual states that flow initiation should be accomplished by adjusting the pressure reduction valve to 30 psig. The back pressure flow regulator should be set to 25 psig. Then, the flow to each instrument should be set according to the manufacturer's requirements.

The manufacturer's (TVA's) requirements are to adjust flow into the conductivity cell to 300 cc/min and establish a bypass flow of 500 cc/min.

The operators stated in interviews that although the manual stated a sample flow pressure of 35 psig, the pressure required to achieve an adequate flow rate in all sample flows is 40-45 psig. The actions taken by the operators to achieve the flow is the same as what is anticipated in the issuance of a new SOI. The inspector noted that 45 psig was about as high a pressure as the operators could achieve.

The designer/manufacturer of the panel was TVA, and therefore, changes to the operations of the system can be approved by TVA as the vendor. The inspector had no further questions.

5. Management Activities in Support of Plant Operations

TVA management activities were reviewed on a daily basis by the NRC inspectors. Resident Inspectors observed that planning, scheduling, work control and other management meetings were effective in controlling plant activities. First line supervisors appear to be knowledgeable and involved in the day to day activities of the plant. First line supervisor involvement in the field has been observed and appeared to be adequate. Management response to those plant activities and events that occurred during this inspection period in general appeared timely and effective. In the instance described below, management oversight and control was not considered effective:

a. Unit 2 RCS Leakage through BIT Injection Check Valves

On April 6, 1989, Unit 2 experienced unidentified RCS leakage above normal but within the TS LCO. At the same time, high pressures were noted in the BIT injection lines between the BIT outlet and the RCS injection check valves. The licensee concluded that the check valves were leaking, and that the normally shut BIT isolation valves were also leaking. This resulted in RCS water leaking back to the BIT, and due to the BIT to BAT recirculation, caused dilution of the nominal 20,000 ppm boron in the BIT and BAT. This was confirmed by sampling the BIT and the BAT.

On April 11, the licensee stopped the BIT/BAT recirculation in an effort to reduce the dilution effect of the RCS backleakage. This was performed without a proper safety evaluation being performed. The inspector questioned the validity of this lineup, and the licensee responded by restoring the BIT recirculation to normal. The improper change to the BIT recirculation lineup caused the BIT to be inoperable for the time period the recirculation was stopped. This issue was pursued as part of the escalated enforcement for improper safety evaluations in IR 327, 328/89-15.

On April 25, 1989, the licensee attempted to reduce the leakage past the BIT isolation valves by increasing the seating torque on the valves. This involved de-clutching the motor operators for the BIT outlet valves, FCV 63-25 and FCV 63-26, engaging the valves' manual operating handwheels, and applying additional closing torque on the valve stems. After applying this additional closing torque, the handwheels were disengaged and the motor operators reengaged. The inspector informed the Operations Manager that the BIT isolation valves should be considered inoperable since they had been manually tightened, which invalidated the valves' stroke time test. The Operations Manager agreed. The stroke time tests were reperformed with satifactory results.

After restroking the BIT isolation valves, the RCS leakage gradually increased. A system alignment change was initiated which provided a path to reroute the RCS leakage from the BIT injection lines to the HUTs. This effectively equalized the differential pressure across the BIT outlet valves, and conducted the RCS leakage, via the ECCS check valve test header, directly to the HUT. This leakage was now being directed to the Holdup Tank, which effectively resolved the BIT/BAT dilution problem, but had no appreciable effect on the leak rate from the RCS.

On August 25, the RCS leakage had reached 1.9 gpm identified leakage and was trending upward at a fairly constant rate of approximately 0.03 gpm/day. The inspector discussed several concerns with the Plant Manager that day. The concerns included: (1) the increasing leakage, which indicated that the affected check valve leakage was probably causing erosion of the seating surface; (2) a perception that plant management was willing to accept the leakage without a clear idea of which of the four RCS loops' check valves were actually leaking; (3) using a lineup for an extended period of time to route the leakage to the HUT which introduced the possibility of several additional leakage paths to be involved in the leakoff without the operators' awareness; (4) the increased leakage that was occurring from cold leg accumulators into the test header requiring refill of the loop 4 accumulator once per 8 hour shift; and, (5) that any reduction in margin for intersystem LOCA events was a matter of concern to the NRC, and the lineup involved had reduced the barriers between the high pressure RCS and the low pressure RHR to a single isolation valve (although the potential intersystem leak path was through a 3/4 inch line). The Plant Manager agreed to revisit the issue and address the concerns presented.

On August 26, licensee personnel entered containment and determined that RCS loops 3 and 4 were leaking through.

On August 29, the plant returned the system alignment to normal and monitored the BIT outlet pressure indicator and BIT boron concentration for indication of continuing backleakage from the RCS. The results of this series of actions determined that the leakage through the check valves had stopped. Apparently, due to the valve

cycling and line flushing that preceded the lineup change to a normal configuration, the check valves had been restored to a tight seal. In addition, leakage from the cold leg accumulators had stopped.

Although plant management responded to the inspector's concerns, there appeared to be a willingness on the part of management to accept an abnormal lineup with several inherent problems, and a lack of concern with the deteriorating conditions evidenced by the increasing leakage. While the safety analysis performed to support the abnormal lineup was adequate and the leakage was well within the 10 gpm allowed by TS, there was no apparent effort to investigate the actual leak path or to find an alternative to the solution in place.

6. NRC Inspector Follow-up Items, Unresolved Items, Violations (92701, 92702)

(Closed) URI 327,328/88-47-09, Inadequate Maintenance

This URI involved maintenance activities which resulted in a reactor trip of Unit 2. The investigation into this event concluded that the practice of allowing long-standing TACFs to accumulate had reduced the effectiveness of the plant's configuration control measures. Discussions with plant management resulted in a commitment to reduce the long-standing TACFs to a manageable number by the end of the fiscal year. The goal for total Unit 1, Unit 2 and Common pre-1988 TACFs was 27 by 30 September. This represents a reduction from 80 at the beginning of the fiscal year. The TACF program was reviewed in IR 327,328/88-50. The work off and closure rate were considered acceptable in that report. The inspector reviewed the actual progress of this program on September 25, 1989. The licensee had 29 pre-1988 TACFs still open and 57 total. A large number of the remaining TACFs involve the UHI system which is tentatively scheduled to be removed during the next refueling outage. The concerns regarding the large numbers of TACFs and the lack of an aggressive program to reduce the number have been adequately addressed.

URI 327,328/88-47-09 is closed.

(Closed) IFI 327, 328/86-11-01, Followup of the Licensee's Response to NRR for Post-Trip Review

This issue has been acceptably resolved between NRR and the licensee to satisfy the requirements of GL 83-28, Item 1.2. Post-trip Review. Problems with the implementation of the post-trip review procedure were identified in inspection 327, 328/88-35 in relation to the excessive post-trip cooldowns experienced during the resart of both units in 1988. The post-trip review implementation issue is being tracked under violation 327, 328/88-35-01. Therefore, this IFI is closed.

(Closed) INF 327/80-21-01 Failure to Have Procedures for Bulletin 79-14 Walkdowns

This infraction was issued because procedures were not used during the initial walkdown inspections in 1980. During the closure inspection for bulletin 79-14 (IR 327, 328/88-48), the inspector observed that procedures used to accomplish the walkdowns associated with the licensee's 1988 79-14 bulletin submittal appeared adequate. This item is closed.

7. Inspection of Suspected Unauthorized Rad Waste Disposal Area

On September 11, 1989, the inspectors visited a rural area in Sequatchie County which had been described by an anonymous caller. The caller had been target shooting at illegally dumped trash, bottles and cardboard. When he walked up to the cardboard he had shot, he saw a placard describing hazardous material warnings, including radioactive materials. He was concerned that he had been exposed to radiation, and called the resident office after he got back home. The inspectors found the site and the placards in question. The placards appeared to be old warning signs for transporting or storing hazardous materials. The placard was intended to allow a common sign to stipulate whether the contents were poisonous, acid, explosive, or reactive. A marking scheme allowed the contents to be identified by type of environmental hazard, including radioactive material. The signs were marked to indicate that no hazardous materials were present. The inspectors surveyed the signs and the general area with a hand held digital ratemeter (Xetex 305B) and observed no radiation levels above background. The inspectors had no further questions.

8. Exit Interview (30703)

The inspection scope and findings were summarized on October 5, 1989, with those persons indicated in paragraph 1. The Senior Resident Inspector described the areas inspected and discussed in detail the inspection findings listed below. The licensee acknowledged the inspection findings and did not identify as proprietary any of the material reviewed by the inspectors during the inspection. Licensee management had no comment on any of the findings presented.

Inspection Findings:

No violations were identified.

One unresolved item was identified, concerning the adequacy of the source check methodology for radiation monitors, URI 327, 328/89-22-01, paragraph 3.

No deviations, or inspector follow-up items were identified.

One weakness regarding management handling of the RCS backleakage to the BIT was noted in paragraph 5.

9. List of Acronyms and Initialisms

ABGTS- Auxiliary Building Gas Treatment System
ABI - Auxiliary Building Isolation
ABSCE- Auxiliary Building Secondary Containment Enclosure
AFW - Auxiliary Feedwater
AI - Administrative Instruction
AOI - Abnormal Operating Instruction
AUO - Auxiliary Unit Operator
ASOS - Assistant Shift Operating Supervisor
ASTM - American Society of Testing and Materials
BIT - Boron Injection Tank
BFN - Browns Ferry Nuclear Plant
C&A - Control and Auxiliary Buildings
CAQR - Conditions Adverse to Quality Report
CCS - Component Cooling Water System
CCP - Centrifugal Charging Pump
CCTS - Corporate Commitment Tracking System
CFR - Code of Federal Regulations
COPS - Cold Overpressure Protection System
CS - Containment Spray
CSSC - Critical Structures, Systems and Components
CVCS - Chemical and Volume Control System
CVI - Containment Ventilation Isolation
DC - Direct Current
DCN - Design Change Notice
DNE - Division of Nuclear Engineering
ECN - Engineering Change Notice
ECCS - Emergency Core Cooling System
EDG - Emergency Diesel Generator
EI - Emergency Instructions
ENS - Emergency Notification System
EOP - Emergency Operating Procedure
EO - Emergency Operating Instruction
ERCW - Essential Raw Cooling Water
ESF - Engineered Safety Feature
FCV - Flow Control Valve
FSAR - Final Safety Analysis Report
GDC - General Design Criteria
GOI - General Operating Instruction
GL - Generic Letter
HIC - Hand-operated Indicating Controller
HO - Hold Order
HP - Health Physics
HUT - Holdup Tank
HVAC - Heating Ventilation and Air Conditioning
ICF - Instruction Change Form
IN - NRC Information Notice
IFI - Inspector Followup Item
IM - Instrument Maintenance
IMI - Instrument Maintenance Instruction
IR - Inspection Report

KVA - Kilovolt-Amp
KW - Kilowatt
KV - Kilovolt
LER - Licensee Event Report
LCO - Limiting Condition for Operation
LIV - Licensee Identified Violation
LOCA - Loss of Coolant Accident
M&AI - Modifications and Additions Instructions
MCR - Main Control Room
MI - Maintenance Instruction
MR - Maintenance Request
MSIV - Main Steam Isolation Valve
NB - NRC Bulletin
NOV - Notice of Violation
NQAM - Nuclear Quality Assurance Manual
NRC - Nuclear Regulatory Commission
OSLA - Operations Section Letter - Administrative
OSLT - Operations Section Letter - Training
OSP - Office of Special Projects
PLS - Precautions, Limitations, and Setpoints
PM - Preventive Maintenance
PPM - Parts Per Million
PMT - Post Modification Test
PORC - Plant Operations Review Committee
PRD - Problem Reporting Document
PRO - Potentially Reportable Occurrence
QA - Quality Assurance
QC - Quality Control
RCA - Radiologically Controlled Area
RCDT - Reactor Coolant Drain Tank
RCP - Reactor Coolant Pump
RCS - Reactor Coolant System
RG - Regulatory Guide
RHR - Residual Heat Removal
RM - Radiation Monitor
RO - Reactor Operator
RPI - Rod Position Indication
RPM - Revolutions Per Minute
RTD - Resistivity Temperature Detector
RWP - Radiation Work Permit
RWST - Refueling Water Storage Tank
SER - Safety Evaluation Report
SG - Steam Generator
SI - Surveillance Instruction
SMI - Special Maintenance Instruction
SOI - System Operating Instructions
SOS - Shift Operating Supervisor
SQM - Sequoyah Standard Practice Maintenance
SR - Surveillance Requirements
SRO - Senior Reactor Operator

SSPS - Solid State Protection System
STA - Shift Technical Advisor
STI - Special Test Instruction
TACF - Temporary Alteration Control Form
TAVE - Average Reactor Coolant Temperature
TDAFW- Turbine Driven Auxiliary Feedwater
TI - Technical Instruction
TREF - Reference Temperature
TROI - Tracking Open Items
TS - Technical Specifications
TVA - Tennessee Valley Authority
UHI - Upper Head Injection
UO - Unit Operator
URI - Unresolved Item
USQD - Unreviewed Safety Question Determination
VDC - Volts Direct Current
VAC - Volts Alternating Current
WCG - Work Control Group
WP - Work Plan
WR - Work Request