



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

November 1, 2018

Joseph W. Shea, Vice President
Nuclear Regulatory Affairs
and Support Services
Tennessee Valley Authority
1101 Market Street, LP 4A
Chattanooga, TN 37402-2801

**SUBJECT: REISSUED - SEQUOYAH NUCLEAR PLANT – NUCLEAR REGULATORY
COMMISSION INTEGRATED INSPECTION REPORT 05000327/2018002,
05000328/2018002, AND 05000327/2018011**

Dear Mr. Shea:

On August 7, 2018, the U.S. Nuclear Regulatory Commission (NRC) issued the subject inspection report for Sequoyah Nuclear Plant, Agencywide Document and Management System (ADAMS) Accession Number ML18219A654. After the inspection report was issued, the NRC noted that the inspection report number for the Unit 1 License Renewal Inspection was inadvertently omitted from the report subject line. Accordingly, we have revised Inspection Report (IR) 05000327/2018002 and 05000327/2018002, to document the necessary changes. Please replace the original report with the report enclosed. This reissued report does not change any NRC position that has been communicated in the previously issued report.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Anthony D. Masters, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket Nos.: 05000327, 05000328

License Nos.: DPR-77, DPR-79

Enclosure:

IIR 05000327/2018002, 05000328/2018002,
and 05000327/2018011

cc w/encl: Distribution via ListServ

SUBJECT: REISSUED - SEQUOYAH NUCLEAR PLANT – NUCLEAR REGULATORY COMMISSION INTEGRATED INSPECTION REPORT 05000327/2018002, 05000328/2018002, AND 05000327/2018011 dated November 1, 2018.

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ADAMS Accession No. MLxxxxxxxx

OFFICE	RII/DRP	RII/DRP	RII/DRP				
NAME	BBishop	SNinh	AMasters				
DATE	10/31/2018	11/1/2018	11/1/2018				

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**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

August 7, 2018

Mr. Joseph W. Shea, Vice President
Nuclear Regulatory Affairs
and Support Services
Tennessee Valley Authority
1101 Market Street, LP 4A
Chattanooga, TN 37402-2801

**SUBJECT: SEQUOYAH NUCLEAR PLANT – NUCLEAR REGULATORY COMMISSION
INTEGRATED INSPECTION REPORT 05000327/2018002,
05000328/2018002, AND 05000327/2018011**

Dear Mr. Shea:

On June 30, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Sequoyah Nuclear Plant, Units 1 and 2. On July 24 and 31, 2018, the NRC inspectors discussed the results of this inspection with Mr. Tony Williams and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspectors did not identify any finding or violation of more than minor significance.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Anthony D. Masters, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Docket Nos.: 05000327, 05000328
License Nos.: DPR-77, DPR-79

Enclosure:
IIR 05000327/2018002, 05000328/2018002,
05000327/2018011

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SUBJECT: SEQUOYAH NUCLEAR PLANT – NUCLEAR REGULATORY COMMISSION
 INTEGRATED INSPECTION REPORT 05000327/2018002,
 05000328/2018002, AND 05000327/2018011

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ADAMS Accession No. ML18219A654

OFFICE	RII/DRP	RII/DRP	RII/DRS	RII/DRS	RII/DRS	RII/DRS	RII/DRS
NAME	DHardage	WDeschaine	MDonithan	JViera	NLacy	BCollins	SDowney
DATE	8/1/2018	8/2/2018	7/30/2018	7/30/2018	7/30/2018	7/27/2018	7/30/2018
OFFICE	RII/DRP	RII/DRP	RII/DRP				
NAME	JSeat	SNinh	AMasters				
DATE	7/30/2018	8/3/2018	8/6/2018				

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers: 50-327, 50-328

License Numbers: DPR-77, DPR-79

Report Numbers: 05000327/2018002, 05000328/2018002, 05000327/2018011

Enterprise Identifier: I-2018-002-0030 and I-2018-011-0012

Licensee: Tennessee Valley Authority (TVA)

Facility: Sequoyah Nuclear Plant

Location: Soddy-Daisy, TN 37379

Inspection Dates: April 1, 2018 to June 30, 2018

Inspectors: D. Hardage, Senior Resident Inspector
W. Deschaine, Resident Inspector
M. Donithan, Operations Engineer
J. Viera, Operations Engineer
N. Lacy, Operations Engineer
B. Collins, Reactor Inspector (In-service Inspection Activities)
S. Downey, Senior Reactor Inspector (Other Activities)

Approved By: A. Masters, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring licensee's performance by conducting a quarterly integrated inspection at Sequoyah Nuclear Plant Units 1 and 2 in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information. No findings or violations were identified. One additional item tracking is summarized in the table below.

List of Findings and Violations

None

Additional Tracking Items

Type	Issue number	Title	Report Section	Status
URI	05000327,328/ 2017004-01	Corrective Actions associated with a NRC NCV documented in inspection report 2015007-05	Section 4AO2	Closed

- **PLANT STATUS**

Unit 1 began the inspection period at rated thermal power. On April 6, 2018, the unit was down powered and removed from service for a refueling outage. The unit was returned to rated thermal power on May 10, 2018, and remained at or near rated thermal power for the remainder of the inspection period.

Unit 2 operated at or near rated thermal power for the entire inspection period.

- **INSPECTION SCOPES**

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed plant status activities described in IMC 2515 Appendix D, "Plant Status" and conducted routine reviews using IP 71152, "Problem Identification and Resolution." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards."

- **REACTOR SAFETY**

71111.01 - Adverse Weather Protection

Summer Readiness (1 Sample)

The inspectors evaluated summer readiness of offsite and alternating current power systems prior to onset of high grid loading season on May 22, 2018.

71111.04 - Equipment Alignment

Partial Walkdown (3 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) Spent fuel pit coolant system on May 10
- (2) Main control room heating, ventilation, and air conditioning 'B' train on May 9
- (3) Unit 2 motor driven auxiliary feedwater (AFW) 'A' and 'B' trains while the turbine driven AFW pump was out of service for maintenance on June 19

71111.05AQ - Fire Protection Annual/Quarterly

Quarterly Inspection (5 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) Unit 1 and Unit 2, auxiliary building – elevation 749 (vital battery rooms 1-4) on May 25
- (2) Unit 1 and Unit 2, auxiliary building – elevation 734 (vital battery board rooms 1-4) on May 25
- (3) Essential raw cooling water (ERCW) building - elevation 688 on May 21
- (4) ERCW building – elevation 704 on June 21
- (5) ERCW building – elevation 720 on June 21

Annual Inspection (1 Sample)

The inspectors evaluated an announced fire drill in the Turbine Building Elevator Equipment Room on May 17.

71111.08 - Inservice Inspection Activities (1 Sample)

The inspectors evaluated pressurized water reactor non-destructive testing by reviewing the following examinations from April 16 to April 20, 2018:

- (1) Ultrasonic Examination
 - a) 30" steam generator nozzle inner radius (RSG-3-H-IR), American Society of Mechanical Engineers (ASME) Class 1 (observed)
 - b) 1.5" safety injection system pipe-to-elbow weld (SI-1606), ASME Class 1 (observed)
 - c) 1.5" safety injection system elbow-to-pipe weld (SI-1608), ASME Class 1 (observed)
- (2) Liquid Penetrant Examination
 - a) WO119526319, 6" ERCW pipe-to-pipe welds (0-ER-2797A & -2797C), ASME Class 3 (reviewed; associated with welding package for piping replacement, which was also reviewed)

The Inspectors evaluated the licensee's boric acid control program performance.

71111.11 - Licensed Operator Requalification Program and Licensed Operator Performance

Operator Requalification (1 Sample)

The inspectors observed and evaluated an Operations crew performing earthquake with anticipated transient without scram large-break loss-of-coolant accident w/failure of residual heat removal auto sump swap over in the simulator on May 31.

Operator Performance (1 Sample)

The inspectors observed and evaluated Unit 1 reactor shutdown for refueling outage on April 6-7, 2018.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness (2 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

- (1) Review of Function 068-D, Limit RCS Pressure on May 24
- (2) Review of Function 061-C, Absorb Thermal Energy on June 29

71111.13 - Maintenance Risk Assessments and Emergent Work Control (5 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) Unit 1 and Unit 2, week of April 7 – April 14, 2018, including protected equipment status reviews for scheduled maintenance and defense in depth reviews during the Unit 1 refueling outage
- (2) Unit 1 and Unit 2, week of April 14 – April 21, 2018, including protected equipment status reviews for scheduled maintenance on ERCW headers and shutdown board cleaning during the Unit 1 refueling outage
- (3) Unit 1 and Unit 2, week of April 21 – April 28, 2018, including protected equipment status reviews for scheduled maintenance and defense in depth reviews during the Unit 1 refueling outage
- (4) Unit 1 and Unit 2, week of April 28 – May 5, 2018, including protected equipment status reviews for scheduled maintenance and defense in depth reviews during the Unit 1 refueling outage
- (5) Unit 1 and Unit 2, week of June 3 – June 9, 2018, including protected equipment status reviews for scheduled maintenance on 2A emergency diesel generator (EDG) and emergent maintenance on 1-IV vital inverter

71111.15 - Operability Determinations and Functionality Assessments (5 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) Unit 1, Pressurizer Safety failed lift setpoint low, CR 1404358 on April 17
- (2) Units 1 and 2, Non 1E loads terminated to breakers on vital battery boards, CR 1407255 on April 19
- (3) Units 1 and 2 690' Auxiliary Building B train ERCW piping leak, CR 1404119 on May 10
- (4) Unit 2 690' Penetration room A train ERCW piping leak, CR 1404171 on May 11
- (5) Breaker for the 1A EDG Fuel Transfer Pump 1 would not close, CR 1417887 on May 31

71111.18 - Plant Modifications (1 Sample)

The inspectors evaluated the following temporary modification:

- (1) SQN-1-2018-085-002, Alternate monitoring for unintended rod motion for Unit 1 Shutdown Bank A Rod Position E5, Revision 1 RPI Temp Mod on June 1

71111.19 - Post Maintenance Testing (7 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) WO 119526319, Replace ERCW pipe due to through wall leak on April 19
- (2) WO 117806775, Rebuild Centrifugal Charging Pump 1A-A on April 24
- (3) WO 118597589, Calibrate SG #2 Main Steam Header Pressure Relief and Replace Positioner on May 1
- (4) WO 03-007782, Unit 1 Electrical Penetration X-146E replacement on May 11
- (5) WO 03-007788, Unit 1 Electrical Penetration X-126E replacement on May 11
- (6) WO 119111321, Unit 1, Replace PORV PCV-68-334 on May 22
- (7) WO 117619682, Replacement of fuel oil system hoses on the 1A-A EDG on May 29

71111.20 - Refueling and Other Outage Activities (1 Sample)

The inspectors evaluated refueling outage 1R22 activities from April 6 to May 8, 2018.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Routine (5 Samples)

- (1) 1-SI-SXP-003-202.S, Turbine Driven Auxiliary Feed Water Pump 1A-S Comprehensive Performance Test on April 7
- (2) 1-SI-OPS-082-026.B, Loss of Offsite Power With Safety Injection – D/G 1B-B Test on April 25
- (3) 2-SI-OPS-063-129.A, SI Pump 2A Discharge Piping Vent on April 30
- (4) Unit 1, 0-SI-MIN-061-107.0, Ice Condenser – Floor Drains, on May 2
- (5) 2-SI-OPS-082-024.B, 2B-B D/G 24 Hour Run and Load Rejection Testing, Revision 37 on May 15

Containment Isolation Valve (1 Sample)

- (1) Unit 1 - 0-SI-SLT-067-258.2, Containment Isolation Valve Local Leak Rate Test Lower Compartment Essential Raw Cooling Water, on April 13

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below for the period from April 2017 through March 2018. (6 Samples)

- (1) Unplanned scrams per 7000 critical hours (Unit 1 and Unit 2) on June 18
- (2) Unplanned scrams with complications (Unit 1 and Unit 2) on June 18
- (3) Unplanned power changes per 7000 critical hours (Unit 1 and Unit 2) on June 18

71152 - Problem Identification and Resolution

Semiannual Trend Review (1 Sample)

The inspectors reviewed the licensee's corrective action program (CAP) for trends that might be indicative of a more significant safety issue.

Annual Follow-up of Selected Issues (1 Sample)

The inspectors reviewed the licensee's implementation of its CAP related to the following issues:

- (1) Sequoyah response to Oak Ridge Associated Universities (ORAU) nuclear safety culture assessment report for Sequoyah, CR 1400411

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

60855.1 - Operation of an Independent Spent Fuel Storage Installation

The inspectors performed a walkdown of the onsite independent spent fuel storage installation on June 27, 2018.

71003 – License Renewal Activities (Phase 1)

The inspectors observed and reviewed the implementation of the following license renewal activities (listed by aging management program) from April 9, 2018 to April 13, 2018:

- (1) Aboveground Metallic Tanks Program
 - a) Visual examination of the external surfaces of SQN-1-TNK-002-0229
- (2) Fire Water System Program
 - a) Ultrasonic examination of SQN-1-HDR-026-0008
 - b) Ultrasonic examination of SQN-1-HDR-026-0031
 - c) Ultrasonic examination of SQN-1-HDR-026-0050
 - d) Ultrasonic examination of SQN-1-HDR-026-0073
 - e) Visual examination of SQN-1-HDR-026-0050
 - f) Visual examination of SQN-1-HDR-026-0073
- (3) Metal Enclosed Bus Inspection Program
 - a) Visual inspection and cleaning of SQN-1-BUS-058-0001
- (4) One-Time Inspection Program
 - a) Ultrasonic examination of Reactor Vessel Flange Leak off Lines upstream of 1-FCV-068-0022
 - b) Visual examination of SQN-1-VLV-006-1234
 - c) Visual examination of SQN-1-VLV-006-1244
- (5) Non-EQ Instrumentation Circuits Test Review Program
 - a) Testing of Power Range Nuclear Instrumentation System, Channel N41

- (6) Reactor Vessel Surveillance Program
 - a) Relocation of SQN-1-RPV-068-CAPSULE-V

The inspector also conducted a general containment walk-down with focus on aging management of structures, systems, and components within the scope of license renewal.

INSPECTION RESULTS

Observation	71152
<u>Annual Follow-up of Selected Issues: Sequoyah response to Oak Ridge Associated Universities (ORAU) nuclear safety culture assessment report for Sequoyah</u>	
<p>The inspectors conducted a detailed review of CR 1400411, “Sequoyah response to ORAU Report.” The inspectors chose this sample to review licensee actions concerning Safety Conscious Work Environment issues. ORAU performed an independent nuclear safety culture (NSC) assessment at Sequoyah from December 4, 2017, to February 23, 2018. The ORAU evaluation concluded that the Sequoyah safety culture is grounded in a high degree of personal accountability and questioning attitude as reported by employees across differing work locations and job assignments. Opportunities for the licensee to improve the Sequoyah NSC included working towards more transparency and timely feedback on resolution of safety concerns, aligning decision-making between management and the workforce, and working toward a more respectful work environment. CR 1400411 documents the licensee’s actions to implement the opportunities for improvement noted in the ORAU report. The inspectors determined that the licensee’s plan was reasonable to address the areas identified in the ORAU report.</p>	

Observation	71152
<u>Semiannual Trend Review</u>	
<p>The inspectors reviewed issues entered in the licensee’s CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The review nominally considered the 6-month period of January through June 2018. The inspectors noted there were three condition reports documenting through wall leakage in ERCW piping during this period; 1B ERCW supply header piping upstream of 0-FCV-67-208, ERCW supply to Unit 2 upper containment coolers upstream of 2-VLV-067-546A, and the ERCW supply to the 2B EDG between 2-FCV-67-65B and 2-CKV-67-513B. Each of these leaks were attributed to microbiological influenced corrosion on ASME Code Class 3 carbon steel pipe. The flaws were each evaluated and monitored per the requirements of ASME Code Case N-513-3. Licensee extent of condition required by code did not identify additional degraded piping. In addition to replacing the leaking piping, the inspectors noted the licensee has an ongoing program to replace ERCW piping prioritize by risk significance. The residents will continue to monitor ERCW system health.</p>	

Unresolved Item 05000327,328/ 2017004-01 (Closed)	Corrective Actions associated with a NRC NCV documented in inspection report 2015007-05	Section 4OA2
<p><u>Description</u>: The inspectors conducted a detailed review of CR 1093813 which was written to address a NRC-identified NCV documented in inspection report 2015007-05. The inspectors determined that the corrective actions developed did not correct the condition adverse to quality and TVA submitted a denial letter for this NCV on December 21, 2017. Due to this denial letter being under review by the NRC, the inspectors determined that more inspection of this issue was required in order to identify if performance deficiencies existed, thus opening an unresolved item (URI) was warranted.</p> <p>Corrective Action Reference(s): Condition Report 1093813</p> <p>Closure Basis: On June 1, 2018, the NRC completed its evaluation of the TVA's denial of NCV 05000327, 328/2015007-05 in accordance with guidance described in Section 2.2 of the NRC Enforcement Manual and determined that violation of regulatory requirements, as documented in the NRC inspection report 2015007-05, did not occur (ML18152A748). Therefore, this URI is closed.</p> <p>NRC Tracking Number: URI 05000327, 328/2017004-01</p>		

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On July 24 and 31, 2018, the inspector presented the quarterly resident inspector inspection results to Mr. Tony Williams and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure 71111.01

Procedures

AOP-P.07, "Degraded Grid or Abnormal Voltage Conditions," Revision 15
AOP-P.01, "Loss of Offsite Power," Revision 37
NPG-SPP-07.1.6, "On Line Work Control Power Systems Alerts/Offsite Power," Revision 04

Inspection Procedure 71111.04

Procedures

0-SO-30-1, "Control Building Heating, Air Conditioning and Ventilation," Revision 46
0-SO-78-1, "Spent Fuel Pit Coolant System," Revision 76
2-SO-3-2, "Auxiliary Feedwater System," Revision 50

Inspection Procedure 71111.05

Procedures

Sequoyah Fire Protection Report, Part II – Fire Protection Plan, Revision 36
PFP NO: ERCW-0-720-00, Fire Protection Pre-Fire Plans ERCW Building – El. 720, Revision 3
PFP NO: ERCW-0-704-00, Fire Protection Pre-Fire Plans ERCW Building – El. 704, Revision 2
PFP NO: ERCW-0-688-00, Fire Protection Pre-Fire Plans ERCW Building – El. 688, Revision 2
PFP NO: AUX-0-734-00, Fire Protection Pre-Fire Plans Auxiliary Building – El. 734, Revision 4
PFP NO: AUX-0-734-01, Fire Protection Pre-Fire Plans Auxiliary Building – El. 734, Revision 10
PFP NO: AUX-0-734-02, Fire Protection Pre-Fire Plans Auxiliary Building – El. 734, Revision 9
PFP NO: AUX-0-749-00, Fire Protection Pre-Fire Plans Auxiliary Building – El. 749, Revision 4
PFP NO: AUX-0-749-01, Fire Protection Pre-Fire Plans Auxiliary Building – El. 749, Revision 10
PFP NO: AUX-0-749-02, Fire Protection Pre-Fire Plans Auxiliary Building – El. 749, Revision 11

Inspection Procedure 71111.08

Degradation Assessment and Operational Assessment Technical Review and Justification for
Not Performing Primary or Secondary Inspection of the Steam Generators SQN U1R22
Outage, Revision 0

GT11-0-1A, Procedure Qualification Record, dated January 26, 1981
GT11-O-1-N, Weld Procedure Specification, Revision 2
GT11-SPEC-1, Procedure Qualification Record, dated December 29, 1987
IHI Southwest Technologies, Inc. Certificate of Qualification: UT (Kleinjan), dated 22JAN2018
IHI Southwest Technologies, Inc. Certificate of Qualification: UT (Hoover), dated 04JAN2018
IHI Southwest Technologies, Inc. Certificate of Qualification: UT (Wilkey), dated 02/22/2018
IHI Southwest Technologies, Inc. Visual Acuity Examination Record (Kleinjan), dated 1/22/2018
IHI Southwest Technologies, Inc. Visual Acuity Examination Record (Wilkey), dated 10/9/2017
IHI Southwest Technologies, Inc. Visual Acuity Examination Record (Hoover), dated 1/4/2018
MMDP-10, "Controlling Welding, Brazing, and Soldering Processes," Revision 0015
MMDP-8, "Controlling Welding, Brazing and Soldering (WBS) Materials," Revision 0005
NIC Inspection Services Certification Record: PT (Nafe), dated 10-20-17
NIC Inspection Services Visual Acuity Certification Record (Nafe), dated 2/18/2018

N-PT-9, "Liquid Penetrant Examination of ASME and ANSI Code Components and Welds,"
Revision 0039
N-UT-55, "Ultrasonic Examination of Nozzle Inner Radius Sections from the Blend Radius,"
Revision 0017
N-UT-85, "Manual Ultrasonic Examination for the Detection of Thermal Fatigue in Piping and
Components within the Material Reliability Programs," Revision 0003
N-VT-17, "Visual Examination for Leakage of PWR Reactor Head Penetrations," Revision 0010
R-0221, TVA UT Calibration/Examination Record (RSG-3-H-IR), dated 4/19/18
R-0224, TVA UT Calibration/Examination Record (SI-1608), dated 4/19/2018
R-0225, TVA UT Calibration/Examination Record (SI-1606), dated 4/19/2018
Sequoyah Unit 1, Cycle 22 RPV Closure Head, Remote Visual (VT-E) Penetration Examination
Results (Scan Sequence), Revision 0
TVA Category I/II Weld Data Sheet (Weld 0-ER-2797A), dated 4/11/18
TVA Category I/II Weld Data Sheet (Weld 0-ER-2797C), dated 4/11/18
TVA Certificate of Method Qualification: PT (Hulsey), dated 8-14-2015
TVA Certificate of Method Qualification: VT (McDonald), dated 11/17/17
TVA Visual Acuity Examination Record for NDE Personnel (McDonald), dated 5-4-17
TVA Visual Acuity Examination Record for NDE/QC Personnel (Hulsey), dated 9/20/2017
TVA Welder/Welding Operator Performance Qualification Record: GT11-O-1-N (McCosh),
dated 10-29-15
TVA Welder/Welding Operator Performance Qualification Record: GT11-O-1-N (Dees), dated
02/06/2018
Weldstar Certificate of Compliance (Shipping # N1004897), revised September 5, 2013
Weldstar Certificate of Compliance (Shipping # N1074077), dated March 11, 2015
WO119526319, ERCW Through-Wall Leak, Repair/Replace Pipe, Revision 0

Inspection Procedure 71111.12

Procedures

TI-4, "Maintenance Rule Performance Indicator Monitoring, Trending, and Reporting –
10CFR50.65," Revision 30
0-TI-SXI-000-200.0, "Inservice Testing Program," Revision 1
NPG-SPP-09.1.24, "Inservice Testing of Pressure Relief Devices," Revision 0
NPG-SPP-03.4, "Maintenance Rule Performance Indicator Monitoring, Trending, and Reporting
- 10CFR50.65," Revision 3

Condition Reports

1399302, Glycol Isolation Valve found closed, causing associated circulating pumps and chillers
to trip
1404358 "Safety Removed During Forced Outage Failed Setpoint Test Low"
1408279 "NRC ID: review PSV lift test for operability and reportability"
1273862 "Unit 1 receives annunciator 1-M-5A D2 – Pressurizer Safety Valve Line Temp Hi"

Inspection Procedure 71111.13

Procedures

NPG-SPP-07.3, "Work Activity Risk Management Process," Revision 22
NPG-SPP-07.2, "Outage Management," Revision 8

Inspection Procedure 71111.15

Procedures

NEDP-22, "Operability Determinations and Functional Evaluations," Revision 18
OPDP-8, "Operability Determination Processes and Limiting Conditions for Operation Tracking,"
Revision 24

Inspection Procedure 71111.18

Procedures

NPG-SPP-09.3, "Plant Modifications and Engineering Change Control," Revision 27
NPG-SPP-09.4, "10 CFR 50.59 Evaluations of Changes, Tests, and Experiments," Revision 12
NPG-SPP-09.5, "Temporary Modifications Temporary Configuration Changes," Revision 12

Inspection Procedure 71111.19

Procedures

1-SI-SXI-068-201.0, "Leakage Test of the Reactor Coolant Pressure Boundary," Revision 14
0-SI-SXV-068-266.0, "ASME Code Valve Testing," Revision 14
0-SI-SXV-001-266.0, "ASME Code Valve Testing," Revision 46
0-SI-SXV-068-201.0, "Pressurizer PORV Operability Test," Revision 2
1-SI-SXP-062-203.0, "Centrifugal Charging Pumps 1A-A and 1B-B Comprehensive Pump Test
and Check Valve Test," Revision 16
1-SI-SFT-062-001.0, "Charging Pump Injection Flow Test," Revision 16
0-SI-SXV-000-206.0, "Testing of Category A and B Valves after Work Activities, Upon Release
from a Hold Order, or when Transferred from Other Documents," Revision 7
0-SI-SXI-000-201.0, "ASME Section XI Inservice Pressure Test," Revision 25

Inspection Procedure 71111.20

Procedures

FHI-3, "Movement of Fuel," Revision 80
0-GO-7, "Unit Shutdown From Hot Standby to Cold Shutdown," Revision 84
0-GO-15, "Containment Closure Control," Revision 42
0-GO-13, "Reactor Coolant System Drain and Fill Operations," Revision 93
0-PI-OPS-000-011.0, "Containment Access Control During Modes 1-4," Revision 16
0-PI-IFT-085-122.0, "Functional Check of Rod Control Logic Cabinet," Revision 19
0-SO-74.1, "Residual Heat Removal System," Revision 103

Inspection Procedure 71111.22

Procedures

0-SI-MIN-061-105.0, "Ice Condenser – Ice Weighing (As-Left)," Revision 13
0-SI-MIN-061-106.0, "Ice Condenser – Flow Passage Inspection," Revision 8
0-SI-MIN-061-107.0, "Ice Condenser – Floor Drains," Revision 3
0-SI-MIN-061-109.0, "Ice Condenser – Intermediate and Lower Inlet Doors and Vent Curtains,"
Revision 6
0-SI-SLT-067-258.2, "Containment Isolation Valve Local Leak Rate Test Lower Compartment
Essential Raw Cooling Water," Revision 20

2-SI-OPS-082-024.B, "2B-B D/G 24 Hour Run and Load Rejection Testing," Revision 37
0-SO-82-4, "Diesel Generator 2B-B," Revision 62

Condition Reports

1410730, Ice Bay Door Lights

Inspection Procedure 71151

Procedures

NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7
NPG-SPP-02.2, "Performance Indicator Program," Revision 10

Inspection Procedure 71152

Procedures

NPG-SPP-22.300, "Corrective Action Program," Revision 10

Inspection Procedure 71003 – License Renewal Activities (Phase 1)

Procedures

N-GP-18, "Ultrasonic Testing Supplements," Revision 22
N-UT-93, "Ultrasonic Examination of Small Bore Socket Welds for Vibration and Thermal Fatigue," Revision 0
N-VT-22, "Visual Examination Procedure for License Renewal Programs," Revision 1
0-PI-DXX-000-100.09.1, "Ultrasonic Examination of High Pressure Fire Protection (HPFP) Sprinkler Piping," Revision 0
0-PI-FPU-026-101.0, "Visual Internal Inspection of the HPFP Dry Pipe Sprinkler System," Revision 0
0-PI-FPU-026-100.0, "High Pressure Fire Protection Automatic Pre-Action Sprinkler System Draining," Revision 2

NDE Examiner Qualifications:

IHI Southwest Technologies, Inc., Certification of Qualification (Alejandro), UT & VT, Level II, dated 02/01/2018
IHI Southwest Technologies, Inc., Certification of Qualification (Compton), VT Level II, dated 08/10/2016
IHI Southwest Technologies, Inc., Certification of Qualification (Kleinjan), UT Level III, dated 01/22/2018
IHI Southwest Technologies, Inc., Certification of Qualification (Sawatzky), VT Level IIL, dated 02/15/2018
TVA Inspection Services Organization, Certificate of Method Qualification (Priestley), UT, Level III, dated 02/14/2017
TVA Inspection Services Organization, Certificate of Method Qualification (Smith), VT-1 and VT-3, Level II, dated 07/09/2015
TVA Inspection Services Organization, Certificate of Method Qualification (Welch), UT Level III, dated 09/21/2017
TVA Inspection Services Organization, Certificate of Method Qualification (Zipperer), UT Level III, dated 06/28/2017

Condition Reports

CR 1404684

Miscellaneous Documents

Work Orders: 117251216, 117660456, 118343388, 118343383, 118447594, 118613946,
118654607, 118731335, 118806643

TVA Record of Visual Examination – License Renewal, Report No. 0210, 4/9/2018

TVA Record of Visual Examination – License Renewal, Report No. 0277, 4/11/2018

TVA Record of Visual Examination – License Renewal, Report No. 0278, 4/11/2018

TVA Examination Summary Sheet – Report No. LR0283, 04/13/2018