



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II

245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

June 19, 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 - NRC EVALUATION OF CHANGES, TESTS,
AND EXPERIMENTS REPORT NUMBER 05000327/2018010 AND
05000328/2018010

Dear Mr. Shea:

On June 8, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Sequoyah Nuclear Plant, Units 1 and 2, and the NRC inspectors discussed the results of this inspection with Chris Reneau 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/

Marvin D. Sykes, Chief
Engineering Branch 1
Division of Reactor Safety

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

Enclosure:
Inspection Report 05000327/2018010
and 05000328/2018010

cc: Distribution via ListServ

SUBJECT: SEQUOYAH NUCLEAR PLANT - NRC EVALUATION OF CHANGES, TESTS,
AND EXPERIMENTS REPORT NUMBER 05000327/2018010 AND
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B. Davis, RII
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PUBLIC

PUBLICLY AVAILABLE NON-PUBLICLY AVAILABLE SENSITIVE NON-SENSITIVE
ADAMS: Yes ACCESSION NUMBER: _____ SUNSI REVIEW COMPLETE FORM 665 ATTACHED

OFFICE	RII:DRS	RII:DRS	RII:DRS	RII:DRP	RII:DRS		
SIGNATURE	NSM EMAIL	MAR1 EMAIL	BJD2 EMAIL	ADM2 EMAIL	MDS		
NAME	N. MORGAN	M. Riley	B. Davis	A. Masters	M. SYKES		
DATE	6/18/2018	6/15/2018	6/15/2018	6/18/2018	6/19/2018		
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: S:\DRS NEWENG BRANCH 1\BRANCH INSPECTION FILES\2017-2018-
2019 CYCLE INSPECTION FOLDER FOR ALL SITES\50.59 INSPECTIONS\SEQUOYAH\SEQUOYAH 50.59 IR 2018010
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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Numbers: 050000327, 05000328

License Numbers: DPR-77 and DPR-79

Report Numbers: 05000327/2018010, 05000328/2018010

Enterprise Identifier: I-2018-010-0009

Licensee: Tennessee Valley Authority

Facility: Sequoyah Nuclear Plant Units 1 and 2

Location: Soddy Daisy, TN

Inspection Dates: June 4-8, 2018

Inspectors: Bradley Davis, Reactor Inspector (Team Lead)
Marcus Riley, Reactor Inspector
Nadiyah Morgan, Reactor Inspector

Approved By: M. Sykes, Chief
Engineering Branch 1
Division of Reactor Safety

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring Tennessee Valley Authority's performance by conducting a 10 CFR 50.59 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 more than minor violations were identified.

INSPECTION SCOPE

Inspections were conducted using the appropriate portions of the inspection procedure (IP) 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 reviewed selected procedures and records, observed activities, conducted walkdowns and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.17T - Evaluations of Changes, Tests and Experiments (18 Samples)

The inspectors evaluated the following samples for compliance with Title 10, Code of Federal Regulations (CFR) 50.59, "Changes, tests, and experiments," from June 4, 2018, to June 8, 2018:

10 CFR 50.59 Evaluations - 71111.17T

1. Design Change Notice (DCN) 23343, Identify Design Basis Flood Barriers for the Shield Buildings
2. DCN 23779, West Main Steam Valve Vault Room Blowoff Panel Modification
3. DCN 23396, Issue Design Output Portion of the Emergency Operating Procedure Setpoint Calculation SQS20110
4. DCN 23538-02, Controls Upgrade for Main and Bypass Feedwater Regulating Valve
5. DCN 23364, Replace Obsolete parts of Exo Sensor Incore Thermocouple Monitoring System
6. DCN 23527, Replacement of 125V DC Vital Battery Charges II, III, and IV

10 CFR 50.59 Screening/Applicability Determinations - 71111.17T

7. DCN 23234, Replace Relief Valves for Essential Raw Cooling Water, Component Cooling, and Containment Spray Systems
8. DCN 23623, Degraded Non-Conforming Motor Operated Valve (MOV) Modifications – Gears/Actuator/Motor/Cables Reroute

9. DCN 21192, Generic ASCO Solenoid Valve Replacement
10. DCN 22778-01, Install Motor Driven Auxiliary Feedwater Pump 1A-A Relief Valve (SQN-1-VLV-003-0908-A) and Motor Driven Auxiliary Feedwater Pump 18-B Relief Valve (SQN-1-VLV-003-0909-B)
11. DCN 22778-02, Install Turbine Driven Auxiliary Feedwater Pump 1A-S Relief Valve (SQN-1-VLV-003-0910)
12. DCN 23353, Replacement of Penetration 1-PENE-302-0009-B and Removal from Equipment Qualification (EQ) Program of Penetrations 1-PENE-302-0226-S and 1-PENE-302-0040-S
13. DCN 23056, Mark Emergency Diesel Generator (EDG) Lube Oil Dipstick to Indicate 6-Day & 7-Day Volumes
14. DCN 21892-03, Install a Current Control Unit on 2-FSV-43-61
15. DCN 23270, Replace MOV Motors for 1-FCV-3-47, 1-FCV-3-87, 1-FCV-3-100 & 2-FCV-3-33
16. DCN 23372, Replace Unit 2 Pressurizer Heater Transformers
17. DCN 23609, Replacement of EQ Containment Sump Level Transmitters
18. DCN23733, Remove Crankcase Pressure Switch Trip Function from EDGs 1A-A, 1B-B, 2A-A, 2B-B

EXIT MEETINGS AND DEBRIEFS

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

On June 8, 2018, the inspectors presented the inspection results to Mr. Chris Reneau, and other members of the licensee staff.

DOCUMENTS REVIEWED

Procedures

- IP-ENG-001, Nuclear Standard Design Process, Rev. 0
- 0-SI-SXV-000-264.0, Testing Setpoint of ASME Code Class 2 & 3 Safety and Relief Valves and Vacuum Breakers, Rev. 15
- 0-AR-DG-1A-LCL, Diesel Generator 1A-A Local Panel, Rev. 22
- 0-SI-SLT-000-257.0, Type "B" Local Leak Rate Test, Rev. 15
- ES-1.3, Transfer to RHR Containment Sump, Rev. 23
- NPG-SPP-03.15, FSAR Management, Rev. 2
- NPG-SPP-09.4, 10 CFR 50.59 Evaluations of Changes Tests and Experiments, Rev. 12
- NPG-SPP-09.3, Plant Modifications and Engineering Change Control, Rev. 28
- NPG-SPP-09.5, Temporary Modifications and Temporary Configuration Changes, Rev. 13
- NPG-SPP-12.7, Computer Software Control, Rev. 8

Drawings

- 1,2-47W450-3, Mechanical – Essential Raw Cooling Water, Rev. 23
- 1,2-45N703-2, 125 VDC Vital Battery Board II Single Line – Sheet 2, Rev. 42
- 1,2-45N767-10, Schematic Alarm for Engine 1A1, Rev. 6
- 1,2-45N767-2, 6900V Diesel Generators Schematic Diagram – Sh 2, Rev. 35
- 1,2-45N767-9, Schematic Alarm for Engine 1A2, Rev. 8
- 1,2-47W803-1, Feedwater Flow Diagram, Rev. 116
- 1,2-47W881-5-1, Mechanical Flow Diagram Water Quality and Sampling System, Rev. 15
- 2-45N724-3, 6900V Shutdown Board 2A-A Single Line Wiring Diagrams, Rev. 28

Calculations

03D53EPMRJP030491, Documentation of Design Bases Review, Required Thrust Calc and Valve and Actuator Capability Assessment for 1-FCV-03-047, Rev. 8
03D53EPMRJP030591, Documentation of Design Bases Review, Required Thrust Calc and Valve and Actuator Capability Assessment for 1-FCV-03-087, Rev. 8
03D53EPMRJP030691, Documentation of Design Bases Review, Required Thrust Calc and Valve and Actuator Capability Assessment for 1-FCV-03-100, Rev. 8
B87150730001, Purge Air Ductwork Qualification for Hydrostatic Pressure, Rev. 2
B8790051027, Compute the Blowout Capacity of Blowout Plugs in the West Steam Valve Room, Rev. 1
B87900822005, Blow-out Plugs - West Main Steam Valve Room – Reliability Study of as Built Condition and Mod. Recommendations
B87910809021, Dynamic Analysis of Blow-Away Roofs and Hatches of East and West Main Steam Valve Vault Panels
B87930202006, Main Steam Valve Vault Subcompartment Pressure Analysis, Rev. 2
E31880203208, Shutdown Board 1A-A 480V Transformers (500KVA), Rev. 2
EDQ0000942016000322, Incore Thermal Monitoring System Software Quality Assurance Documentation, Rev. 1
EDQ0002502013000067, 125V DC Vital Battery Charger I, II, III, IV – Power Relays, Rev. 1
MDQ0000032015000278, Auxiliary Feedwater Pump Alternative Min-flow Relief Valve Sizing, Rev. 0
MDQ0000822014000219, Diesel Generator Lube Oil Volume for 6 and 7 Days of Operation, Rev. 0
NDQ0063980038, RWST and Containment RHR Sump Safety and Operational Limits, RWST Setpoint Required Accuracy and LBLOCA Sump Minimum Levels, Rev. 17
OE2-DS196RP, Containment, Electrical Penetration Protection Analysis, Rev. 29
SQEQ-PENE-004, Westinghouse Canister Electrical Penetrations (LVP/C&I), Rev. 60
SQEQ-PENE-005, Conax Electrical Penetrations (LVP/C&I), Rev. 40
SQN-APS-003, 480VAC APS Class 1E Load Coordination Study, Rev. 100
SQN-CPS-051, Circuit Protection Device Evaluation, Rev. 65
SQN-EEB-MS-TI28-0010, Instrument Accuracy Calc 1-LT-63-176, 177, 178, 179 Containment Sump Level Indication, Rev. 11
SQN-EEB-MS-TI28-0013, Instrument Accuracy Calc 1-LT-63-176, 177, 178, 179 Containment Sump Switchover, Rev. 15
SQNETAPAC, Auxiliary Power System, Rev. 84
SQS20110, Emergency and Abnormal Operating Procedure Setpoints, Rev. 27

CRs (Condition Reports)

117027	934663
655763	1217684

Design Basis Documents

SQN-DC-V-13.9.8, Sequoyah Nuclear Plant – Auxiliary Feedwater System, Rev. 28
SQN-DC-V-13.9.9, Component Cooling Water System, Rev. 28
SQN-DC-V-21.0, Environmental Design, Rev. 27
SQN-DC-V-27.5, Containment Spray System, Rev. 18
SQN-DC-V-3.0, The Classification of Piping, Pumps, Valves, and Vessels, Rev. 21

Work Orders

05-780558-004	116690396	117918755
05-780558-003	117063742	117918862
113312349	117063744	117918863
113312355	117094249	117918865
113312383	117214605	118175904
114611700	117214614	118514454
115790860	117214618	
116101146	117214627	

Miscellaneous Documents

Critical Digital Review Fisher DVC6000 Series Digital Valve Controller for TVA 025-N230353335, Rev. A

DG-E18.1.25, Digital System Develop System Development, Procurement, and Implementation, Rev. 4

DS-E18.1.25.4, Design for Simple Digital Device Determination, Rev. 3

DS-E18.1.25.8, Cyber Hardening for Digital Devices, Rev. 1

Engineering Change Turnover Package for ECP 23234-07, Replace 1-VLV-067-01590A, 2/29/2015

Engineering Change Turnover Package for ECP 23623-04, RHR HTX B to SIS Pumps, 4/26/2018

EQ14-0774, Evaluation of Conduit Plug Kits and Materials, 2/2/2015

LTR-SCS-17-2, Sequoyah Units 1&2 Main Feedwater Valve Stroke Time Increase – NSSS Design Transients and Plant Operability Evaluation, 1/6/2017

NPG-SPP-09.2, Equipment Environmental Qualification Program, Rev. 10

PIC 23687, Sleeve #106 Seal Detail Change, Rev. 0

SNQ Auxiliary Feedwater System Feasibility Study for Min-Flow Design Pressure Increase, 11/11/2015

SQNEQ-XMTR-009, Rosemount Model 3155N Transmitters Tab D, Rev. 0

SS-E18.15.01, Requirement for Digital Systems (Real-Time Data Acquisition and Control Computer Systems), Rev. 8

Triconex Approved Topical Report 7286-545-1-A, Rev. 4

Corrective Action Documents Written as a Result of the Inspection

CR 1421144, Vital Charger Maintenance Strategy Gap

CR 1421232, Drawing Note Discrepancy for Battery Charger Limiting Amperage