UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE N.E., SUITE 1200
ATLANTA, GEORGIA 30303-1200

July 21, 2025

Delson Erb
Vice President, OPS Support
Tennessee Valley Authority
1101 Market Street
LP 4A-C
Chattanooga, TN 37402-2801

SUBJECT: SEQUOYAH UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000327/2025002 AND 05000328/2025002

Dear Delson Erb:

On June 30, 2025, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Sequoyah Units 1 and 2. On July 15, 2025, the NRC inspectors discussed the results of this inspection with Mr. Ricardo Medina, Site Regulatory Compliance Manager, and other members of your staff. The results of this inspection are documented in the enclosed report.

No findings or violations of more than minor significance were identified during this inspection.

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 Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

Signed by Taylor, Ryan
on 07/21/25

Ryan C. Taylor, Chief
Projects Branch 5
Division of Operating Reactor Safety

Docket Nos. 05000327 and 05000328
License Nos. DPR-77 and DPR-79

Enclosure:
As stated

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SUBJECT: SEQUOYAH UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000327/2025002 AND 05000328/2025002 DATED JULY 21, 2025

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DATE	7/17/25	7/17/25	7/21/25		

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers:	05000327 and 05000328
License Numbers:	DPR-77 and DPR-79
Report Numbers:	05000327/2025002 and 05000328/2025002
Enterprise Identifier:	I-2025-002-0020
Licensee:	Tennessee Valley Authority
Facility:	Sequoyah Units 1 and 2
Location:	Soddy-Daisy, TN
Inspection Dates:	April 1, 2025, to June 30, 2025
Inspectors:	P. Meier, Senior Resident Inspector A. Price, Resident Inspector
Approved By:	Ryan C. Taylor, Chief Projects Branch 5 Division of Operating Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at Sequoyah 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.

List of Findings and Violations

No findings or violations of more than minor significance were identified.

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000328/2025-001-00	Unit 2, Reactor Trip Breakers Opened Due to Group 2 of Control Rod Bank D Failing to Withdraw	71153	Closed
LER	05000327/2024-001-01	Unit 1, Reactor Trip Due to a Turbine Trip	71153	Closed
LER	05000327/2024-002-01	Unit 1, Reactor Trip due to a Turbine Trip	71153	Closed

PLANT STATUS

Unit 1 began the inspection period at approximately 100 percent rated thermal power (RTP) until June 24, 2025, when the reactor was manually scrammed and entered mode 3 to address lowering steam generator water levels caused by a secondary control system malfunction [event notification (EN) 57778]. Unit 1 remained in mode 3 until the secondary control system was repaired. On June 26, 2025, the reactor was restarted, entered mode 1, and the main generator synchronized to the grid. Unit 1 reactor was restored to 100 percent RTP on June 27, 2025, and remained there through the end of the period.

Unit 2 began the inspection period in mode 5. On May 12, 2025, the unit entered mode 4 and then mode 3 on May 13, 2025, in preparation for reactor restart. On May 15, 2025, mode 4 was re-entered to address reactor coolant system check valve maintenance. Following the maintenance, mode 3 was re-entered on May 16, 2025. The unit 2 reactor was started, mode 1 entered, and achieved approximately 13 percent RTP on May 18, 2025. The reactor was returned to mode 3 on May 20, 2025, to address maintenance on the main turbine. On May 24, 2025, mode 2 was re-entered and the main generator eventually synchronized to the grid on May 26, 2025. The unit 2 reactor reached approximately 65 percent RTP on May 28, 2025, until the licensee performed a rapid downpower to remove the main turbine from service to address maintenance issues. The reactor was shut down from mode 1 to mode 3 on May 29, 2025, and remained in mode 3 until June 19, 2025, during main turbine repairs. On June 19, 2025, unit 2 reactor was restarted and achieved approximately 100 percent RTP on June 24, 2025. The reactor was manually tripped on June 24, 2025, due to lowering steam generator levels caused by a main feedwater regulating valve malfunction (EN 57779). Following main feedwater regulating valve repairs, the unit 2 reactor was restarted on June 27, 2025, and achieved 100 percent RTP on June 29, 2025, and remained there through the end of the 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 activities described in IMC 2515, Appendix D, “Plant Status,” observed risk significant activities, and completed onsite portions of IPs. 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

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (1 Sample)

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

(1) unit 1 and unit 2 vital AC/DC systems during maintenance of the spare 120 volt AC vital inverter during the week of March 31, 2025

Complete Walkdown Sample (IP Section 03.02) (1 Sample)

The inspectors evaluated system configurations during a complete walkdown of the following:

(1) unit 2 turbine driven auxiliary feedwater system on June 18, 2025

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the implementation of the fire protection program by conducting a walkdown and performing a review to verify program compliance, equipment functionality, material condition, and operational readiness of the following fire areas:

(1) turbine building (fire area [FA] TURBLD) on April 23, 2025
(2) 2B 480 volt board room (FA A-107) on April 28, 2025
(3) 2A2 480 volt board room (FA A-085) on April 28, 2025
(4) channel 1 vital 125 VDC battery board room (FA A-069) on April 28, 2025
(5) relay room (FA C-020) on April 28, 2025

Fire Brigade Drill Performance Sample (IP Section 03.02)

The inspectors evaluated the onsite fire brigade training and performance during an announced fire drill involving a vehicle and building fire north of the switchyard on June 17, 2025.

71111.07A - Heat Exchanger/Sink Performance

Annual Review (IP Section 03.01) (1 Sample)

The inspectors evaluated readiness and performance of:

(1) component cooling water heat exchangers 2A1 and 2A2 on April 21, 2025

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

(1) The inspectors observed and evaluated licensed operator performance in the control room during unit 2 reactor startup on May 17, 2025.

Licensed Operator Requalification Training/Examinations (IP Section 03.02) (1 Sample)

(1) The inspectors observed and evaluated a pilot crew continuous licensed operator training simulator exam involving a turbine trip and automatic transient without scram on April 17, 2025 (Simulator Exam 25-3).

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (1 Sample)

The inspectors evaluated the effectiveness of maintenance to ensure the following structures, systems, and components remain capable of performing their intended function:

(1) unit 1 distributed control system reboot and software updates performed via work orders (WOs) 125312340 and 125312362

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the accuracy and completeness of risk assessments for the following planned and emergent work activities to ensure configuration changes and appropriate work controls were addressed:

(1) unit 1 elevated risk during 1A1 component cooling system heat exchanger cleaning and spare 120 volt AC vital inverter maintenance during the week of March 31, 2025
(2) unit 1 elevated risk during unit 1 train “B” solid state protection system and reactor trip breaker testing on April 8, 2025
(3) common station service transformer “A” (CSST “A”) overcurrent relay phase testing with potential to impact trip sensitive relays powering unit 2 safety-related equipment on April 9, 2025
(4) unit 1 distributed control system planned firmware update to address control processors rebooting causing controllers to swap to manual [condition report (CR) 2005055]
(5) unit 1 risk during 1A containment spray pump maintenance, 1A2 component cooling system heat exchanger cleaning, and 2S 125 VDC vital battery charger maintenance on April 28, 2025

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (7 Samples)

The inspectors evaluated the licensee's justifications and actions associated with the following operability determinations and functionality assessments:

(1) unit 2 train “A” 6.9 kV shutdown board degraded current transformer identified on March 27, 2025 (CR 2002180)
(2) 2A2 480 volt shutdown board normal supply breaker not opening from the local hand switch identified on April 1, 2025 (CR 2003202)
(3) component cooling heat exchanger 1A2 with broken undercut anchor bolt on May 1, 2025 (CR 2010027)
(4) unit 1 train “B” emergency diesel generator standing oil on top of the engine between the cylinder banks identified on May 9, 2025 (CR 2012096)
(5) unit 2 pressurizer surge line temperature transient identified on May 9, 2025 (CR 2011932)
(6) unit 2 turbine driven auxiliary feedwater pump water intrusion into the oil system identified on May 23, 2025 (CR 2015541)
(7) unit 2 source range nuclear instrumentation channel, N-32, issues identified on June 14, 2025 (CR 2018933, 2019619, 2020090)

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

(1) temporary modification to disable one of two fission chamber signals for the unit 2 source range channel, N32, before reactor startup on June 17 and 18, 2025 (SQN-2-2025-092-001)

71111.20 - Refueling and Other Outage Activities

Refueling/Other Outage Sample (IP Section 03.01) (1 Sample)

(1) The inspectors evaluated unit 2 refueling outage (U2R26) activities from July 30, 2024, to May 26, 2025.

71111.24 - Testing and Maintenance of Equipment Important to Risk

The inspectors evaluated the following testing and maintenance activities to verify system operability and/or functionality:

Post-Maintenance Testing (PMT) (IP Section 03.01) (6 Samples)

(1) unit 2 main turbine number three throttle valve (stop valve) and actuator replacement during the unit 2 refueling outage, 2R26 (WO 123522141; 2-SI-IFT-099-093.1)

(2) pressure test of the unit 2 reactor coolant pressure boundary performed on January 16, 2025, following a refueling outage and prior to reactor testing (2-SI-SXI-068-202.0)
(3) spare 120 volt AC vital inverter (0-1) ten year maintenance during the week of March 31, 2025 (WO 122526624)
(4) 120 volt AC vital instrument panel board 2-III breaker 17 (2-BKRA-250-NH/17-F; post accident sampling solenoid valves) change out on April 16, 2025 (WO 12505416)
(5) unit 1 loop 2 reactor coolant pump undervoltage / underfrequency alarms (CR 2014096, 2014774; WO 125332473)
(6) unit 2 train "A" emergency diesel generator feeder breaker relay calibrations (WO 124253686, 124535653)

Surveillance Testing (IP Section 03.01) (1 Sample)

(1) unit 2 turbine driven auxiliary feedwater pump performance test performed on May 15, 2025 (2-SI-SXP-003-201.S)

Inservice Testing (IST) (IP Section 03.01) (1 Sample)

(1) unit 2 "B" train charging pump surveillance test on April 22, 2025 (2-SI-SXP-062-201.B)

Diverse and Flexible Coping Strategies (FLEX) Testing (IP Section 03.02) (1 Sample)

(1) testing of FLEX low pressure pumps on April 9, 2025 (0-PI-FPU-360-020.0; WO 124416223)

71114.06 - Drill Evaluation

Required Emergency Preparedness Drill (1 Sample)

(1) The inspectors evaluated an emergency preparedness training drill involving a general emergency resulting from a prolonged loss of offsite and onsite AC power to the safety-related 6.9 kV shutdown boards on May 7, 2025.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

IE01: Unplanned Scrams per 7000 Critical Hours Sample (IP Section 02.01) (2 Samples)

(1) unit 1 (April 1, 2024, through March 31, 2025)
(2) unit 2 (April 1, 2024, through March 31, 2025)

IE03: Unplanned Power Changes per 7000 Critical Hours Sample (IP Section 02.02) (2 Samples)

(1) unit 1 (April 1, 2024, through March 31, 2025)

(2) unit 2 (April 1, 2024, through March 31, 2025)

IE04: Unplanned Scrams with Complications (USwC) Sample (IP Section 02.03) (2 Samples)

(1) unit 1 (April 1, 2024, through March 31, 2025)
(2) unit 2 (April 1, 2024, through March 31, 2025)

71152A - Annual Follow-up Problem Identification and Resolution

Annual Follow-up of Selected Issues (Section 03.03) (2 Samples)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

(1) degrading trend on unit 2 refueling water storage tank and reactor coolant system levels on April 7, 2025 (CR 1998257; WO 125194812)
(2) blown fuse due to error in test equipment setup during safety-related relay testing on April 15, 2025 (CR 2006514, 2006748)

71152S - Semiannual Trend Problem Identification and Resolution

Semiannual Trend Review (Section 03.02) (1 Sample)

(1) The inspectors reviewed the licensee's corrective action program to identify potential trends associated with unit 1 safety injection system injection check valve (reactor coolant system) leaks identified over the last six years (June 1, 2019, through June 1, 2025) that might be indicative of a more significant safety issue.

71153 - Follow Up of Events and Notices of Enforcement Discretion

Event Report (IP Section 03.02) (3 Samples)

The inspectors evaluated the following licensee event reports (LERs):

(1) LER 05000328/2025-001-00, Reactor Trip Breakers Opened Due to Group 2 of Control Rod Bank D Failing to Withdraw (ADAMS Accession No. ML25071A010), was evaluated. The inspectors did not identify a performance deficiency or violation of NRC requirements. This LER is Closed.
(2) LER 05000327/2024-001-01, Reactor Trip Due to a Turbine Trip (ADAMS Accession No. ML25099A196). The inspectors reviewed the updated LER submittal and did not identify a performance deficiency or violation of NRC requirements. The previous LER submittal was reviewed in Inspection Report 05000327/2024004. This LER is Closed.
(3) LER 05000327/2024-002-01, Reactor Trip Due to a Turbine Trip (ADAMS Accession No. ML25119A263). The inspectors reviewed the updated LER submittal and did not identify a performance deficiency or violation of NRC requirements. The previous LER submittal was reviewed in Inspection Report 05000327/2024004. This LER is Closed.

Personnel Performance (IP Section 03.03) (4 Samples)

(1) The inspectors evaluated the licensee's performance and response to unit 2 main turbine / main generator issues that required a rapid downpower to remove the main turbine from service on May 28, 2025.
(2) The inspectors evaluated the licensee's performance and response to a unit 2 transient that occurred immediately following main generator synchronization due to excessive manual turbine load change after removing steam dumps from service on June 19, 2025 (CR 2021206).
(3) The inspectors evaluated a unit 1 manual reactor trip and the licensee's performance on June 24, 2025 (EN 57778).
(4) The inspectors evaluated a unit 2 manual reactor trip and the licensee's performance on June 24, 2025 (EN 57779).

INSPECTION RESULTS

No findings were identified.

EXIT MEETINGS AND DEBRIEFS

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

- On July 15, 2025, the inspectors presented the integrated inspection results to Mr. Ricardo Medina, Site Regulatory Compliance Manager, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.04	Corrective Action Documents Resulting from Inspection	CR 2019636	NRC Identified: Steam leak in west valve vault room	06/11/2025
71151	Corrective Action Documents Resulting from Inspection	CR 2007110	NRC Identified: SQN U1 August 2024 Generation Occurrences RX Subcritical Date and Time	04/17/2025
71152S	Corrective Action Documents	1562837	(Unit 1 loop 2) cold leg check valves failed acceptance criteria	11/03/2019
		1563010	(Unit 1 loop 4) hot leg check potential leakage	11/4/2019
		1689653	(Unit 1 loop 2) hot leg check valve found degraded	04/27/2021
		1918501	(Unit 1 loop 1 cold leg) potential check valve leakage	03/21/2024
		1925871	Unit 1 safety injection pump discharge header pressurized to reactor coolant system pressure	04/21/2024
		1928147	Adverse condition monitoring plan for safety injection piping pressurization and test header leakage	04/22/2024
71153	Corrective Action Documents Resulting from Inspection	CR 2010925	NRC identified LER supplement required re-submittal to NRC document control desk	05/05/2025