



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

July 16, 2021

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

**SUBJECT: SEQUOYAH NUCLEAR PLANT – BIENNIAL PROBLEM IDENTIFICATION AND
RESOLUTION INSPECTION REPORT 05000327/2021011 AND
05000328/2021011**

Dear Mr. Barstow:

On June 24, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed a problem identification and resolution inspection at your Sequoyah Nuclear Plant and discussed the results of this inspection with Mr. Chris Reneau, Plant Manager, and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspection team reviewed the station's corrective action program and the station's implementation of the program to evaluate its effectiveness in identifying, prioritizing, evaluating, and correcting problems, and to confirm that the station was complying with NRC regulations and licensee standards for corrective action programs. Based on the samples reviewed, the team determined that your staff's performance in each of these areas adequately supported nuclear safety.

The team also evaluated the station's processes for use of industry and NRC operating experience information and the effectiveness of the station's audits and self-assessments. Based on the samples reviewed, the team determined that your staff's performance in each of these areas adequately supported nuclear safety.

Finally, the team reviewed the station's programs to establish and maintain a safety-conscious work environment, and interviewed station personnel to evaluate the effectiveness of these programs. Based on the team's observations and the results of these interviews, the team found no evidence of challenges to your organization's safety-conscious work environment. Your employees appeared willing to raise nuclear safety concerns through at least one of the several means available.

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,

/RA/

Thomas A. Stephen, Chief
Reactor Projects Branch #5
Division of Reactor Projects

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

Enclosure:
As stated

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SUBJECT: SEQUOYAH NUCLEAR PLANT – BIENNIAL PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT 05000327/2021011 AND 05000328/2021011 dated July 16, 2021

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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: 05000327/2021011 and 05000328/2021011

Enterprise Identifier: I-2021-011-0027

Licensee: Tennessee Valley Authority

Facility: Sequoyah Nuclear Plant

Location: Soddy Daisy, TN 37379

Inspection Dates: June 07, 2021 to June 24, 2021

Inspectors: N. Childs, Resident Inspector
M. Kirk, Resident Inspector
S. Ninh, Senior Project Engineer
J. Seat, Project Engineer

Approved By: Thomas A. Stephen, Chief
Reactor Projects Branch #5
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a biennial problem identification and resolution inspection at Sequoyah Nuclear Plant, 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

None.

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 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. Starting on March 20, 2020, in response to the National Emergency declared by the President of the United States on the public health risks of the coronavirus (COVID-19), inspectors were directed to begin telework. In addition, regional baseline inspections were evaluated to determine if all or a portion of the objectives and requirements stated in the IP could be performed remotely. If the inspections could be performed remotely, they were conducted per the applicable IP. In some cases, portions of an IP were completed remotely and on site. The inspections documented below met the objectives and requirements for completion of the IP.

OTHER ACTIVITIES – BASELINE

71152B - Problem Identification and Resolution

Biennial Team Inspection (IP Section 02.04) (1 Sample)

- (1) The inspectors performed a biennial assessment of the licensee's corrective action program, use of operating experience, self-assessments and audits, and safety conscious work environment.
 - Corrective Action Program Effectiveness: The inspectors assessed the corrective action program's effectiveness in identifying, prioritizing, evaluating, and correcting problems.
 - Operating Experience, Self-Assessments and Audits: The inspectors assessed the effectiveness of the station's processes for use of operating experience, audits and self-assessments.
 - Safety Conscious Work Environment: The inspectors assessed the effectiveness of the station's programs to establish and maintain a safety-conscious work environment.

INSPECTION RESULTS

Assessment	71152B
Based on the samples reviewed, the team determined that the licensee's corrective action program (CAP) complied with regulatory requirements and self-imposed standards. The licensee's implementation of the CAP adequately supported nuclear safety.	

1. Corrective Action Program Effectiveness

Problem Identification: The team determined that the licensee was generally effective in identifying problems and entering them into the CAP at the appropriate threshold. This conclusion was based upon the inspectors review of the requirements for initiating condition reports (CR) as prescribed by licensee procedure, NPG-SPP-22.300, "Corrective Action Program," and site management's expectation that employees are encouraged to initiate CRs. The inspection team observed licensee staff at the Plant Screening Committee (PSC) and Management Review Committee (MRC) meetings actively questioning and challenging CRs to ensure issues were adequately documented and entered into the CAP. Based on samples reviewed, the inspectors determined that licensee staff adequately trend equipment and programmatic issues at an appropriate level. The inspectors performed walkdowns, reviewed CRs, and system health and trend reports for the Component Cooling System (CCS), Emergency Diesel Generators, and Essential Raw Cooling Water (ERCW) System. Based on reviews and system walkdowns, the inspectors determined that deficiencies were being identified and entered into the CAP. Overall, the team determined that issues were being identified and documented at the appropriate threshold.

Problem Prioritization and Evaluation: Based on the review of CRs sampled by the inspection team during the onsite period, the inspectors concluded that problems were prioritized and evaluated in accordance with the CAP requirements prescribed in procedure NPG-SPP-22.300. Based on reviews and observations, the inspectors determined that adequate consideration was given to system or component operability and associated plant risk. The inspectors reviewed causal analyses to ensure licensee staff appropriately considered the extent of condition or problem, generic issues, and previous occurrences of the issue. The inspectors determined that plant personnel had generally conducted cause evaluations in compliance with the CAP procedures and performed adequate levels of analysis based on the significance of the issue being evaluated. Overall, the licensee's process for evaluating and prioritizing issues supported nuclear safety.

Effectiveness of Corrective Actions: Based on a review of corrective action documents, interviews with licensee staff, and verification of completed corrective actions, the inspectors determined that corrective actions were effective, timely, and commensurate with the safety significance of the issues. For significant conditions adverse to quality, the corrective actions directly addressed the cause and effectively prevented recurrence. The inspectors reviewed CRs and effectiveness reviews, as applicable, to verify that the significant conditions adverse to quality had not recurred. Effectiveness reviews for corrective actions to preclude repetition (CAPR) were sufficient to ensure corrective actions were properly implemented and were effective. The inspectors reviewed corrective action documents for NRC findings issued since the last problem, identification, and resolution (PI&R) biennial inspection. The team determined that corrective actions completed or planned, including expected completion dates, were adequate to address the NRC findings.

2. Use of Operating Experience (OE)

Based on a review of selected documentation related to OE issues, the team determined that the licensee was effective in screening operating experience for applicability to the plant. Industry OE was evaluated at either the corporate or plant level depending on the source and type of document. Relevant information was forwarded to the applicable department for further action or informational purposes. Operating experience issues requiring action were entered into the CAP for tracking and closure. The team determined

that the licensee's use of industry and NRC OE was effective, and the program adequately supported nuclear safety.

3. Self-Assessments and Audits

The team determined that the scopes of assessments and audits were adequate. Self-assessments were generally detailed and critical. The team verified that CRs were created to document areas for improvement and findings resulting from self-assessments, and that actions had been completed consistent with the staff recommendations. Audits of the quality assurance program appropriately assessed performance and identified areas for improvement. Generally, the licensee performed evaluations that were technically accurate.

4. Safety Conscious Work Environments (SCWE)

Based on interviews with plant staff and reviews of the employee concerns program (ECP), CRs, and the latest safety culture assessment results, the inspectors found no evidence of challenges to the safety conscious work environment. Employees interviewed appeared willing to raise nuclear safety concerns through at least one of several means available.

EXIT MEETINGS AND DEBRIEFS

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

- On June 24, 2021, the inspectors presented the biennial problem identification and resolution inspection results to Mr. Chris Reneau, Plant Manager, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71152B	Corrective Action Documents	1096744 1191019 1246672 1364613 1376156 1383541 1393611 1396860 1404119 1404171 1424070 1436447 1438327 1459288 1466649 1467085 1469779 1478023 1485220 1491999 1497144 1497873 1498586 1507644 1507948 1508834 1513074 1515689 1516260 1520621 1520726 1522545		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		1524521		
		1526168		
		1526428		
		1527311		
		1528237		
		1528243		
		1529074		
		1530154		
		1530159		
		1532058		
		1533146		
		1534118		
		1535543		
		1536556		
		1536791		
		1537213		
		1537226		
		1539112		
		1539126		
		1544222		
		1544227		
		1544846		
		1548593		
		1546981		
		1547878		
		1550548		
		1550552		
		1551560		
		1553230		
		1554178		
		1556233		
		1558970		
		1559230		
		1559287		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		1560185		
		1560409		
		1561136		
		1561202		
		1563833		
		1565699		
		1566459		
		1572651		
		1573093		
		1573472		
		1573726		
		1578600		
		1578708		
		1579205		
		1580587		
		1580779		
		1586184		
		1587965		
		1587974		
		1590030		
		1590551		
		1596820		
		1599699		
		1600942		
		1600953		
		1601743		
		1602795		
		1607309		
		1607353		
		1611217		
		1611705		
		1615005		
		1616525		
		1616533		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		1618274		
		1620231		
		1625313		
		1625372		
		1625456		
		1626031		
		1627192		
		1627194		
		1627752		
		1628045		
		1628188		
		1629477		
		1634550		
		1636605		
		1639059		
		1641685		
		1641712		
		1641725		
		1641731		
		1646424		
		1646839		
		1647725		
		1649323		
		1649710		
		1651597		
		1651613		
		1652910		
		1656464		
		1656894		
		1659301		
		1670044		
		1673465		
		1679682		
		1679684		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		1679685		
		1680819		
		1683540		
		1687263		
		1689360		
		1690542		
		1691677		
		1699840		
		1516474		
		1516581		
		1516583		
		1517306		
		1518410		
		1554059		
		1554316		
		1557934		
		1565732		
		1580909		
		1622043		
		1676122		
		1555831		
		1563326		
		1563420		
		1605671		
		1605726		
		1559894		
		1559882		
		1573190		
		1522540		
		1529694		
		1544976		
		1543380		
		1544977		
		1549710		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		1554245 1554234 1548304 1548308 1548377 1548502 1548619 1586834 1586823 1659406 1636692 1616076 1647730 1658103 1672639 1619939 1353663		
	Corrective Action Documents Resulting from Inspection	1698257, 1698617, 1700017, 1700043, 1700055, 1700060, 1700061, 1700062, 1700063, 1700064, 1700235, 1700289, 1700303, 1703096, 1703331		
	Drawings	1, 2-37W206-8	Mechanical Pumping Station Piping & Equipment	Revision 4
		1, 2-47W845-1	Mechanical Flow Diagram - Essential Raw Cooling Water	Revision 54

Inspection Procedure	Type	Designation	Description or Title	Revision or Date	
			System		
		1, 2-47W845-2	Mechanical Flow Diagram - Essential Raw Cooling Water System	Revision 116	
		1, 2-47W845-5	Mechanical Flow Diagram - Essential Raw Cooling Water System	Revision 63	
	Engineering Changes	DCN T12553-A	Authorize use of Rains Flo packing on the ERCW pumps and CCS pumps	Revision A	
	Engineering Evaluations	SQN-20-1852	Qualify 47A056-1006 Supports Installed in the EDGB	12/10/2020	
	Miscellaneous		Level 2 Evaluation Report - Operations Department Performance Gap	Revision 0	
			SQN Plant Screening Committee Package	06/10/2021	
			SQN Management Review Committee Meeting Agenda	06/10/2021	
			Level 2 Evaluation Report - Elevated Condensate Pressure resulted in #3 HDT Runback and Rx Trip	01/13/2020	
			Level 2 Evaluation for CR 1559894		
			Operations Department Performance Assessment	02/28/2021	
			Operations Department Performance Assessment	06/30/2020	
			Control Room Deficiencies	04/09/2021	
		DC-V-13.9.9	Design Criteria - Component Cooling Water System (70)	Revision 29	
		SQN-DC-V-11.8	Diesel Generator and Auxiliary System Design Criteria Document	Revision 15	
		SQN-DC-V-12.1	Flood Protection Provisions	Revision 21	
		System #67 - Essential Raw Cooling Water	Health Report Summary - P1	FY20 (Oct - Mar)	
		System #67 - Essential Raw Cooling Water	Health Report Summary - P2	FY19 (Apr - Sep)	
		System #70 - Component Cooling System	Health Report Scorecards - P2	FY18 - FY20	
		Procedures	NEDP-22	Operability Determinations and Functional Evaluations	Revision 21
			NEDP-27	Past Operability Evaluations	Revision 5

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		NPG-SPP-01.16	Condition Report Initiation	Revision 4
		NPG-SPP-09.0.1.1	System Monitoring and Trending	Revision 3
		NPG-SPP-09.16	Plant Health Committee and Plant Health Sub-Committee	Revision 15
		NPG-SPP-09.7	Corrosion Control Program	Revision 8
		NPG-SPP-09.7.4	Boric Acid Corrosion Control Program	Revision 7
		NPG-SPP-22.000	Performance Improvement Program	Revision 10
		NPG-SPP-22.102	NPG Self-Assessment and Benchmarking Programs	Revision 10
		NPG-SPP-22.300	Corrective Action Program	Revision 21
		NPG-SPP-22.500	Operating Experience Program	Revision 14
		NPG-SPP-22.600	Issue Resolution	Revision 10
		0-PI-CEM-015-001.0	Steam Generator Hideout Return Sampling and Analysis	Revision 4
		0-SI-OPS-067-682.M	ERCW Flow Balance Valve Position Verification	Revision 35
		0-SO-67-1	Essential Raw Cooling Water	Revision 114
		0-SO-67-3	ERCW Strainers and Traveling Screens	Revision 33
		0-TI-CEM-000-001.1	Secondary Chemistry Specifications	Revision 63
		0-TI-CEM-000-001.3	Primary Chemistry Specifications	Revision 92
		0-TI-CEM-000-001.4	Auxiliary System and Common System Chemistry Specifications	Revision 49
		0-TI-DXX-000-097.1	Boric Acid Control Program	Revision 15
		0-TI-DXX-000-915.0	Underground Piping and Tanks Integrity Program	Revision 7
		0-TI-OPS-000-012.64	Locked Valve List	Revision 33

Inspection Procedure	Type	Designation	Description or Title	Revision or Date	
		NPG-SPP-01.7.1	Employee Concerns Program	Revision 5	
		NPG-SPP-03.4	Maintenance Rule Performance Indicator Monitoring, Trending and Reporting - 10CFR50.65	12/05/2014	
		NPG-SPP-09.0.1.1 Attachment 1	System Walkdown Checklist	Revision 7	
		NPG-SPP-09.15	Underground Piping and Tanks Integrity Program	Revision 9	
		NPG-SPP-09.18.13	Equipment Failure Trending	Revision 2	
		TI-4	Maintenance Rule Performance Indicator Monitoring, Trending, and Reporting - 10CFR50.65	Revision 35	
	Self-Assessments			Biennial Self-Assessment - Nuclear Safety Culture	11/15/2019 - 12/15/2019
		SSA1907		Audit Report, Radiation Protection and Radwaste Sequoyah Nuclear Plant (SQN)	07/15/2019 - 07/26/2019
		CR 1553713		Shift Manager Effectiveness in Driving Crew Performance Improvements	10/09/2019
		CR 1582138		Bi-Monthly CAP Assessment	01/29/2020
		CR 1598305		Pre-NIEP Self Assessment	05/15/2020
		CR 1629512		Bi-Monthly CAP Assessment	08/13/2020
		CR 1642281		NRC Graded Exercise/Baseline Inspection - Improvement Opportunities	Revision 0
		CR 1642686		Bi-Monthly CAP Assessment	10/15/2020
		CR 1653113		Assess Operations implementation of the Clearance process	Revision 0
		CR 1653137		Evaluate current status of operations department leadership and team effectiveness and identify improvement opportunities	Revision 0
		CR 1659297		Bi-Monthly CAP Assessment	12/16/2020
		CR 1659297		Bi-Monthly CAP Assessment	12/16/2020
		CR 1673828		Bi-Monthly CAP Assessment	02/23/2021
		CR 1675152		2021 SQN Pre-Problem Identification and Resolution (PI&R) Self-Assessment	03/01/2021 - 03/18/2021
CRP-QA-SA-20-001 (CR		QA Assessment Program	11/06/2019		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		1553757)		
		CRP-QA-SA-20-002 (CR 1555201)	QA Post DNP Assessment Program	12/20/2019
		QA-SQ-19-011	Sequoyah Nuclear Plant - Quality Assurance June Site Report	07/09/2019
		QA-SQ-19-018, Revision 1	Sequoyah Nuclear Plant - Quality Assurance September Site Report	10/17/2019
		QA-SQ-20-001	Sequoyah Nuclear Plant - Quality Assurance December Site Report	01/08/2020
		QA-SQ-20-008	Sequoyah Nuclear Plant - Quality Assurance March Site Report	04/08/2020
		QA-SQ-20-015	Sequoyah Nuclear Plant - Quality Assurance June Site Report	07/09/2020
		QA-SQ-20-022	Sequoyah Nuclear Plant - Quality Assurance September Site Report	10/08/2020
		QA-SQ-21-001	Sequoyah Nuclear Plant - Quality Assurance December Site Report	01/12/2021
		SQN-CEM-SA-19-004	Secondary Chemistry Control	02/07/2019
		SQN-CEM-SA-19-006	Chemical Traffic Control Self-Assessment	01/07/2019
		SQN-CEM-SA-20-001	Chemistry QA/QC Self-Assessment	09/08/2020
		SSA1906	Audit Report, Chemistry, Effluent, and Environmental Monitoring Sequoyah (SQN)	06/03/2019 - 06/14/2019
		SSA2002	Audit Report, Security and Safeguards Information (SGI), Sequoyah Nuclear Plant	01/06/2020 - 01/16/2020
		SSA2004	Audit Report, Maintenance, Sequoyah Nuclear Plant	03/16/2020 - 03/30/2020
		SSA2107	Audit Report, Corrective Action Program	01/19/2021 - 01/28/2021
	Work Orders	119534627 119593079		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		120011394 120323404 120405727 120556874 120561705 120609457 120609581 120715080 120799515 120845914 120915544 121128321 121274740 121276488 121283139 121352981 121353681 121367674 121583869 121702254 121722819 121749911 121923081 122090528		