



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

January 18, 2024

Daniel G. Stoddard  
Senior Vice President  
and Chief Nuclear Officer  
Virginia Electric and Power Company  
Innsbrook Technical Center  
5000 Dominion Boulevard  
Glen Allen, VA 23060-6711

SUBJECT: SURRY POWER STATION – AGE-RELATED DEGRADATION  
INSPECTION REPORT 05000280/2023010 AND 05000281/2023010

Dear Daniel G. Stoddard:

On December 14, 2023, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Surry Power Station and discussed the results of this inspection with James Shell, Director, Nuclear Station Safety and Licensing, 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,

A handwritten signature in black ink, appearing to read "JB", written over a horizontal line.

Signed by Baptist, James  
on 01/18/24

James B. Baptist, Chief  
Engineering Branch 1  
Division of Reactor Safety

Docket Nos. 05000280 and 05000281  
License Nos. DPR-32 and DPR-37

Enclosure:  
As stated

cc w/ encl: Distribution via LISTSERV

SUBJECT: SURRY POWER STATION – AGE-RELATED DEGRADATION INSPECTION  
REPORT 05000280/2023010 AND 05000281/2023010  
DATED JANUARY 18, 2024

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OFFICE	RII/DRS	RII/DRS	RII/DRS	RII/DRS	RII/DRS
NAME	M. Schweg	P. Carman	P. Braxton	J. Copeland	J. Baptist
DATE	1/16/2024	1/16/2024	1/16/2024	1/16/2024	1/18/2024

**OFFICIAL RECORD COPY**

**U.S. NUCLEAR REGULATORY COMMISSION  
Inspection Report**

Docket Numbers: 05000280 and 05000281

License Numbers: DPR-32 and DPR-37

Report Numbers: 05000280/2023010 and 05000281/2023010

Enterprise Identifier: I-2023-010-0053

Licensee: Virginia Electric and Power Company

Facility: Surry Power Station

Location: Surry, VA

Inspection Dates: November 27, 2023, to December 15, 2023

Inspectors: P. Braxton, Reactor Inspector  
P. Carman, Senior Reactor Inspector  
J. Copeland, Reactor Inspector  
M. Schwieg, Senior Reactor Inspector

Approved By: James B. Baptist, Chief  
Engineering Branch 1  
Division of Reactor Safety

Enclosure

## **SUMMARY**

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an Aging-Related Degradation Inspection at Surry Power Station, 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.

## **REACTOR SAFETY**

### 71111.21N.04 - Age-Related Degradation

#### Age-Related Focused Engineering Inspection (section 03.01) (12 Samples)

For each sample listed below, inspectors reviewed licensee activities credited to address age-related degradation to assess whether they were being performed using appropriate standards and procedures, assessed against appropriate acceptance criteria, and that maintenance was being performed at an appropriate interval. Inspectors assessed whether issues identified during licensee activities were being appropriately entered into and addressed by the station corrective action program, and whether periodic assessments of maintenance effectiveness and operating experience were being completed.

- (1) Emergency diesel and station blackout generator cooling water systems
- (2) Emergency service water pumps (1-SW-P-1A/B/C)
- (3) Halon suppression to the emergency switchgear room and carbon dioxide suppression to the emergency diesel generator rooms
- (4) Control room chiller Y-strainers
- (5) High voltage insulators
- (6) Non-EQ inaccessible medium voltage power cables
- (7) Reserve water storage tanks and level transmitters
- (8) Fire protection/domestic water storage tanks
- (9) Auxiliary Building structures monitoring
- (10) Flux thimble tube inspection
- (11) Main Turbine metal enclosed bus
- (12) Turbine Building sprinkler water system

## **INSPECTION RESULTS**

No findings were identified.

## **EXIT MEETINGS AND DEBRIEFS**

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

- On December 14, 2023, the inspectors presented the Aging-Related Degradation Inspection exit meeting results to James Shell, Director, Nuclear Station Safety and Licensing, and other members of the licensee staff.

**DOCUMENTS REVIEWED**

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.21N.04	Corrective Action Documents	CR1182155	Degraded Coatings on U2 RWST Overflow Line Supports	10/07/2021
71111.21N.04	Corrective Action Documents	CR1213498	CD Valve Gland Bolts Degraded	11/21/2022
71111.21N.04	Corrective Action Documents	CR1224089, CR1143661, CR1245200		
71111.21N.04	Corrective Action Documents Resulting from Inspection	CR1245014, CR1245015, CR1245016, CR1245017, CR1245018, CR1245021, CR1245024, CR1245025, CR1245026, CR1245028, CR1245031, CR1245178, CR1245179, CR1245181, CR1246028, CR1246048, CR1246055, CR1246057, CR1246059, CR1246061, CR1246063, CR1246066, CR1246070, CR1246146	Miscellaneous Corrective Action Documents	
		CR1246254	Lost Document	Rev. 0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		CR1246173	NRC Identified Missing Signatures in Procedures	12/13/2023
		CR1246279	NRC Document reviews of 0-OPT-SW-007/8/9	12/14/2023
		CR1246301	High Temperature Sprinkler located around normal sprinkler heads	12/14/2023
71111.21N.04	Drawings	11448-FE-32H	Manhole No 2 & No. 3 Details Surry Power Station- Unit 1	Rev. 6
71111.21N.04	Engineering Evaluations	CEE-94-018	ESGR Halon Bottles Review - Type 1 NP-2901	Rev. 0
71111.21N.04	Engineering Evaluations Miscellaneous	CH-18-0001	Technical Position to Support Changing EPRI Recommended Monitoring Frequencies for Revision 23 of CH-93.400	Rev. 0
71111.21N.04	Engineering Evaluations	ETE-SLR-2018-1314	Surry Subsequent License Renewal Project - Aging Management Program Evaluation Report – Open-Cycle Cooling Water System	Rev. 8
71111.21N.04	Engineering Evaluations	ETE-SLR-2018-1315	Surry Subsequent License Renewal Project - Aging Management Program Evaluation Report - Closed Treated Water Systems	Rev. 4
71111.21N.04	Engineering Evaluations	ETE-SLR-2018-1318	Surry Subsequent License Renewal Project - Aging Management Program Evaluation Report – Fire Protection	Rev. 5
71111.21N.04	Engineering Evaluations	ETE-SLR-2018-1319	Surry Subsequent License Renewal Project – Aging Management Program Evaluation Report – Fire Water System	Rev. 5
71111.21N.04	Engineering Evaluations	ETE-SLR-2018-1320	Surry Subsequent License Renewal Project – Aging Management Program Evaluation Report – Outdoor and Large Atmospheric Metallic Storage Tanks	Rev. 3
71111.21N.04	Engineering Evaluations	ETE-SLR-2018-1339	Surry Subsequent License Renewal Project – Aging Management Program Evaluation Report – Structures Monitoring	Rev. 8
71111.21N.04	Engineering Evaluations	ETE-SLR-2018-1344	Surry Subsequent License Renewal Project – Aging Management Program Evaluation Report – Electrical Insulation for Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Used in Instrumentation Circuits	Rev. 1
71111.21N.04	Engineering Evaluations	ETE-SLR-2018-1349	Surry Subsequent License Renewal Project – Aging Management Program Evaluation Report – High Voltage	Rev. 1



Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Insulators	
71111.21N.04	Engineering Evaluations	ETE-SLR-2018-1410	Surry Subsequent License Renewal Project – Position Paper – High-Voltage Insulators	Rev. 1
71111.21N.04	Engineering Evaluations	ETE-SU-2016-1011	2016 Aging Management Review of NON-EQ Cable Inspections	Rev. 0
71111.21N.04	Engineering Evaluations		Electric Transmission Recommendations for Nuclear Power Stations	03/17/2022
71111.21N.04	Miscellaneous NDE Reports	P-SURR-429355	1-VS-YS-1C	07/09/2021
71111.21N.04	Miscellaneous	01-FP-TK-1A	In-Service, Internal Tank Inspection Report	04/16/2019
71111.21N.04	NDE Reports Procedures	01-FP-TK-1B	In-Service, Internal Tank Inspection Report	04/23/2019
71111.21N.04	NDE Reports	14-261, 20-121, 20-122	UT Erosion/Corrosion Examination	Various Dates
71111.21N.04	NDE Reports	0-LPT-FP-022	Functionality Test of Fuel Pump Houses High Pressure CO2 System	Rev. 13
71111.21N.04	Procedures Work Orders	0-LPT-FP-027	Operability Test of Emergency Service Water Fuel Oil Storage Tank Room High Pressure CO2 System	Rev. 9
71111.21N.04	Procedures	0-LSP-FP-008	PRE-ACTION AND WET PIPE SPRINKLER VISUAL INSPECTION	Rev. 7
71111.21N.04	Procedures	0-MCM-0640-01	Keckley Y-Strainer Maintenance	Rev. 2
71111.21N.04	Procedures	0-MPM-0700-04	Emergency Diesel Generator Engine Twelve Year Service and Inspection	Rev. 21
71111.21N.04	Procedures	0-NSP-BS-005	Monitoring of Structures	Rev. 15
71111.21N.04	Procedures	0-OP-VS-020	Backwash of Rotating SW Strainers in MER 3 and MER 4	Rev. 3
71111.21N.04	Procedures	0-OPT-FP-006	FLOW TEST OF FIRE PROTECTION SYSTEM	Rev. 7
71111.21N.04	Procedures	0-OPT-SW-001	Emergency Service Water Pump 1-SW-P-1A	Rev. 79
71111.21N.04	Procedures	0-OPT-SW-002	Emergency Service Water Pump 1-SW-P-1B	Rev. 81
71111.21N.04	Procedures	0-OPT-SW-003	Emergency Service Water Pump 1-SW-P-1C	Rev. 78
71111.21N.04	Procedures	0-OPT-SW-007	Emergency Service Water Pump 1-SW-P-1A Comprehensive Test	Rev. 34
71111.21N.04	Procedures	0-OPT-SW-008	Emergency Service Water Pump 1-SW-P-1B Comprehensive Test	Rev. 34
71111.21N.04	Procedures	0-OPT-SW-009	Emergency Service Water Pump 1-SW-P-1C	Rev. 33

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Comprehensive Test	
71111.21N.04	Procedures	0-OSP-VS-012	High Flow Flush of SW Strainers and Piping in MER 3 and MER 4	Rev. 8
71111.21N.04	Procedures	1-LPT-FP-017	Flow Test of Emergency Switchgear Room Halon System	Rev. 14
71111.21N.04	Procedures	1-LPT-FP-018	Emergency Switchgear Room Halon System Cylinder Pressure and Weight Test	Rev. 16
71111.21N.04	Procedures	2-LSP-FP-015	LUBE OIL DELUGE SYSTEM FUNCTIONAL TEST	Rev. 6
71111.21N.04	Procedures	CH-93.400	Closed Cooling Water Chemistry Program	Rev. 27
71111.21N.04	Procedures	ER-AA-101	System Engineering Walkdowns	Rev. 7
71111.21N.04	Procedures	ER-AA-CBL-10	Cable Management Program	Rev. 2
71111.21N.04	Procedures	ER-AA-CBL-103	Evaluation and Testing of Medium Voltage Cables	Rev. 5
71111.21N.04	Procedures	SU-SPEC-000-NUS-2026	Specification for Conduit Supports	Rev. 5
71111.21N.04	Procedures	38079565601	1825 DAY FREQ. PT: MONITORING OF STRUCTURES	08/28/2012
71111.21N.04	Work Orders	38103275045	1825 DAY FREQ. PT: MONITORING OF STRUCTURES	11/26/2018
71111.21N.04	Work Orders	38103472994, 38103534909, 38204228640, 38204228696	Internal/External Inspections of FP Tanks	
71111.21N.04	Work Orders	38103724103, 38204198590	PT: Flow Test of Fire Protection System	
71111.21N.04	Work Orders	38204181591, 38204202447, 38204202467, 38204209714, 38204216380, 38204228714, 38204238841, 38204242325, 38204236291, 38204243464, 38204244016, 38204247301, 38204289350,		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		38204292647, 38204299473, 38204300987, 38204321641, 38204322567, 38204323582, 38204324305, 38204325051, 38204208690, 38204216570, 38204223027, 38204236659, 38204297687, 38204221743, 38204233220, 38204244710, 38204300152, 38103857377, 38103857426, 38103857427, 38103857428, 38103857429, 38204245279, 38204245281, 38204245282, 38204245283, 38204245284		
71111.21N.04	Work Orders	38204196244, 38204226960	PT: Pre-action & Wet Pipe Sprinkler	
71111.21N.04	Work Orders	Procedure Implementation Summary Sheet for 0-OPT-SW- 002	9/11/2023	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.21N.04	Work Orders	Procedure Implementation Summary Sheet for 0-OPT-SW-003	9/13/2023	
71111.21N.04	Work Orders			
71111.21N.04				