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

July 21, 2025

Carolyne Joseph
Site Vice President
Duke Energy Progress, LLC
5413 Shearon Harris Road
Mail Code: HNP01
New Hill, NC 27562-9300

SUBJECT: SHEARON HARRIS NUCLEAR PLANT – INTEGRATED INSPECTION REPORT 05000400/2025002

Dear Carolyne Joseph:

On June 30, 2025, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Shearon Harris Nuclear Plant. On July 16, 2025, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

No NRC-identified or self-revealing findings were identified during this inspection.

A licensee-identified violation which was determined to be of very low safety significance is documented in this report. We are treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violation or the significance or severity of the violation documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement; and the NRC Resident Inspector at Shearon Harris Nuclear Plant.

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 Fannon, Matthew
on 07/21/25

Matthew S. Fannon, Chief
Projects Branch 2
Division of Operating Reactor Safety

Docket No. 05000400
License No. NPF-63

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV

SUBJECT: SHEARON HARRIS NUCLEAR PLANT – INTEGRATED INSPECTION REPORT 05000400/2025002 JULY 21, 2025

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ADAMS ACCESSION NUMBER: ML25199A112

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OFFICE	RII/DORS	RII/DORS	RII/DORS		
NAME	A. Wilson	P. Boguszewski	M. Fannon		
DATE	07/21/2025	07/21/2025	07/21/2025		

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Number:	05000400
License Number:	NPF-63
Report Number:	05000400/2025002
Enterprise Identifier:	I-2025-002-0017
Licensee:	Duke Energy Progress, LLC
Facility:	Shearon Harris Nuclear Plant
Location:	New Hill, NC
Inspection Dates:	April 01, 2025, to June 30, 2025
Inspectors:	P. Boguszewski, Senior Resident Inspector L. Day, Reactor Inspector M. Kay, Resident Inspector K. Lei, Emergency Preparedness Inspector T. McGowan, Emergency Preparedness Inspector M. Rich, Emergency Preparedness Inspector J. Walker, Senior Emergency Preparedness Inspector
Approved By:	Matthew S. Fannon, Chief Projects Branch 2 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 Shearon Harris 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. A licensee-identified non-cited violation is documented in report section: 71152S.

List of Findings and Violations

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

Additional Tracking Items

None.

PLANT STATUS

Unit 1 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 activities described in IMC 2515, Appendix D, "Plant Status," observed risk significant activities, and completed on-site 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

71111.01 - Adverse Weather Protection

Seasonal Extreme Weather Sample (IP Section 03.01) (1 Sample)

(1) The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of seasonal hot temperatures on May 13, 2025, for the following systems:
- Main feedwater
- Emergency diesel generator

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (4 Samples)

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

(1) Turbine driven auxiliary feedwater system following a planned maintenance window on May 6, 2025
(2) 'B' motor driven auxiliary feedwater system during 'A' motor driven auxiliary feedwater system planned maintenance on May 19, 2025
(3) 'A' motor driven auxiliary feedwater system during 'B' motor driven auxiliary feedwater system planned maintenance on May 29, 2025
(4) 'B' emergency diesel generator following a planned maintenance window on June 10, 2025

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (3 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) Charging safety injection pump rooms and mezzanine on April 8, 2025
(2) Emergency service water intake structure and emergency service water screening structure on April 15, 2025
(3) Waste processing building 236' and 246' elevation on June 12, 2025

71111.07A - Heat Exchanger/Sink Performance

Annual Review (IP Section 03.01) (1 Sample)

The inspectors evaluated readiness and performance of:

(1) 'B' emergency diesel generator jacket water heat exchanger on June 18, 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 a partial loss of control room annunciators on May 20, 2025.

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

(1) The inspectors observed and evaluated a licensed operator simulator training scenario involving a steam generator tube rupture on May 8, 2025.

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 (SSCs) remain capable of performing their intended function:

(1) 'B' emergency diesel generator system on June 20, 2025

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (3 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) Elevated risk due to 'A' emergency diesel generator planned maintenance on April 7, 2025

(2) Elevated risk due to planned turbine driven auxiliary feedwater maintenance on April 30, 2025
(3) Elevated risk due to an emergent trip of the 'B' circulating water pump on June 11, 2025

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (5 Samples)

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

(1) 'A' emergency diesel generator available emergency status light out on April 11, 2025 (Nuclear Condition Report (NCR) 02550816)
(2) Turbine driven auxiliary feedwater check valve 1AF-117 inspection on April 30, 2025 (Work Order (WO) 20575189)
(3) Degraded annunciators on a main control board in the control room on May 22, 2025 (NCR 02555208)
(4) Process instrumentation cabinet 4 card C4-550 failure on May 23, 2025 (NCR 02555753)
(5) Main reservoir level calibration discrepancy on June 23, 2025 (NCR 02545439)

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) Engineering change 425235, replacement of diesel actionpak temperature switches on April 9, 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) 1SI-327, low head safety injection train 'B' to hot leg crossover isolation valve, and 1SI-341, low head safety injection train 'B' to cold leg valve, following breaker contactor replacements on April 1, 2025
(2) OST-1411, "Auxiliary Feedwater Pump 1X-SAB Operability Test," after planned maintenance on May 2, 2025
(3) OST-1211, "Auxiliary Feedwater Pump 1A-SA Operability Test," after planned maintenance on May 19, 2025
(4) MST-I0012, "Main Steam Line Pressure, Loop 2 (P-0486) Channel Calibration," following failed card replacement on May 28, 2025
(5) ORT-1408, "Security Diesel Operability Run," after corrective maintenance on May 29, 2025

(6) OST-1086, "1B-SB Diesel Generator Operability Test," after planned maintenance on June 9, 2025

Surveillance Testing (IP Section 03.01) (2 Samples)

(1) OP-120.08 Section 8.16, "Sampling Containment Sump," on April 28, 2025
(2) OPT-1529, "Alternate Seal Injection Pump Operability Test Quarterly Intervals," on May 15, 2025

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

(1) OST-1076, "Auxiliary Feedwater Pump 1B-SB Operability Test," on April 3, 2025

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

(1) WO 20589929, "FLEX Diesel Fuel Oil Transfer Pump - Semi Annual Functional Test and Inspection," on May 21, 2025

71114.01 - Exercise Evaluation

Inspection Review (IP Section 02.01-02.11) (1 Sample)

(1) The inspectors evaluated the biennial emergency preparedness exercise during the week of April 28, 2025. The simulated scenario began with a failure of an instrument bus, resulting in a turbine and reactor trip signal. The reactor trip signal failed to automatically shut down the reactor and manual action was taken to trip the reactor. After manual action was taken a few remaining rods were stuck out of the core prompting the crew to declare an Unusual Event. A short time later, the 'A' MDAFW Pump experienced an electrical fault and tripped offline. The effect is a red Critical Safety Function Status Tree indicator for "Heat Sink," which met the condition for a Site Area Emergency declaration. Despite the simulated scenario being a no-release radiological exercise, the Offsite Response Organizations adequately demonstrated their ability to implement emergency actions.

71114.04 - Emergency Action Level and Emergency Plan Changes

Inspection Review (IP Section 02.01-02.03) (1 Sample)

(1) The inspectors evaluated submitted Emergency Action Level, Emergency Plan, and Emergency Plan Implementing Procedure changes during the week of April 28, 2025. This evaluation does not constitute NRC approval.

71114.08 - Exercise Evaluation - Scenario Review

Inspection Review (IP Section 02.01 - 02.04) (1 Sample)

(1) The inspectors reviewed and evaluated in-office, the proposed scenario for the biennial emergency plan exercise at least 30 days prior to the day of the exercise.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

MS05: Safety System Functional Failures (SSFFs) Sample (IP Section 02.04) (1 Sample)

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

BI01: Reactor Coolant System (RCS) Specific Activity Sample (IP Section 02.10) (1 Sample)

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

BI02: RCS Leak Rate Sample (IP Section 02.11) (1 Sample)

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

EP01: Drill/Exercise Performance (DEP) Sample (IP Section 02.12) (1 Sample)

(1) January 1, 2024, through December 31, 2024

EP02: Emergency Response Organization (ERO) Drill Participation (IP Section 02.13) (1 Sample)

(1) January 1, 2024, through December 31, 2024

EP04: Emergency Response Facility and Equipment Readiness (ERFER) (IP Section 02.14) (1 Partial)

(1) (Partial)
This is a new NRC performance indicator, described in NEI 99-02, Revision 8 (ML24331A114). Licensees began collecting data for this performance indicator January 1, 2025. Therefore, at the time of inspection there was no quarterly data compiled and submitted to the NRC.

71152A - Annual Follow-up Problem Identification and Resolution

Annual Follow-up of Selected Issues (Section 03.03) (1 Sample)

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

(1) Error identified in CRC-821, "Post Accident Sampling," on June 20, 2025 (NCR 02554643)

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 that might be indicative of a more significant safety issue on June 20, 2025.

INSPECTION RESULTS

Licensee-Identified Non-Cited Violation	71152S
This violation of very low safety significance was identified by the licensee and has been entered into the licensee corrective action program and is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.	
Violation: The NRC regulation in 10 CFR 20.1501 requires, in part, that each licensee shall make or cause to be made surveys of areas that are reasonable under the circumstances to evaluate the magnitude and extent of radiation levels, concentrations or quantities of residual radioactivity, and the potential radiological hazards of the radiation levels and residual radioactivity detected. Licensee procedure HPP-625, Performance of Radiological Surveys, Revision 050, which ensures licensee compliance with 10 CFR 20.1501, states routine surveys shall be performed daily for fuel handling building walkways and step off pads. Contrary to the above, on February 13, 2025, the licensee identified that daily contamination and radiation surveys in the fuel handling building walkways and contamination surveys of the step off pads were not performed on January 31, 2025. Significance/Severity: Green. This violation was determined to be of very low safety significance (Green) because it was not related to ALARA planning, did not result in an overexposure beyond regulatory limits, there was no substantial potential for overexposure, and the ability to assess dose was not compromised. Corrective Action References: NCR 02544066	

EXIT MEETINGS AND DEBRIEFS

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

- On July 16, 2025, the inspectors presented the integrated inspection results to Carolyne Joseph and other members of the licensee staff.
- On May 1, 2025, the inspectors presented the emergency preparedness exercise inspection results to Thomas Haaf and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Corrective Action Documents	Procedure Revision Request (PRR) 255076		
	Procedures	AP-301	Seasonal Weather Preparations and Monitoring	revision 89
71111.05	Corrective Action Documents	DRRs (Document Revision Request) 2551186 2551195		
71111.07A	Corrective Action Documents	PRR 02556903		
	Procedures	EPT-163	Generic Letter 89-13 Inspections (Raw Water Systems and Local Area Air Handler Inspections and Documentation)	revision 19
	Work Orders	20721445		
71111.12	Corrective Action Documents	NCRs 2556878 2556903 2556956 2557004		
71114.01	Procedures	EP-ALL-EPLAN	Duke Energy Common Emergency Plan	Rev. 5
71152A	Corrective Action Documents	NCRs 2552784 2554666		
	Procedures	AD-EP-ALL-0105		
		CSD-EP-HNP-0101-07		
71152S	Corrective Action Documents	NCRs 2555887 2557968 2556188 2541377		