



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

October 9, 2018

Tanya Hamilton
Site Vice President
Shearon Harris Nuclear Power Plant
5413 Shearon Harris Rd.
M/C HNP01
New Hill, NC 27562-0165

**SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT – NRC TRIENNIAL FIRE
PROTECTION INSPECTION REPORT NO. 05000400/2018011**

Dear Ms. Hamilton,

On August 30, 2018, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Shearon Harris Nuclear Power Plant and 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.

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/

Scott M. Shaeffer, Chief
Engineering Branch 2
Division of Reactor Safety

Docket Nos: 50-400
License Nos: NPF-63

Enclosure: Inspection Report 05000400/2018011
w/Attachment: Supplemental Information

cc: Distribution via Listserv

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT – NRC TRIENNIAL FIRE PROTECTION INSPECTION REPORT NO. 05000400/2018011

Distribution:

- J. Montgomery, RII
- E. Coffman, RII
- L. Jones, RII
- M. Singletary, RII
- S. Shaeffer, RII
- S. Rose, RII

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:DRS	RII:DRS	RII:DRP	
SIGNATURE	JMM9 EMAIL	ETC1 EMAIL	LJJ EMAIL	MJS6 EMAIL	SMS	JSD EMAIL	
NAME	MONTGOMERY	COFFMAN	JONES	SINGLETARY	SHAEFFER	DODSON	
DATE	9/27/2018	9/21/2018	9/ 24/2018	9/21 /2018	10/9/2018	9/25/2018	
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 2\REPORTS\TFPI REACTOR INSPECTION REPORTS\HARRIS\INSPECTION REPORTS\2018\HARRIS 2018-011 REPORT FINAL.DOCX

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-400

License No: NPF-63

Report No: 05000400/2018011

Enterprise Identifier: I-2018-011-0025

Licensee: Duke Energy Progress, LLC

Facility: Shearon Harris Nuclear Power Plant

Location: 5413 Shearon Harris Road
New Hill, NC 27562

Dates: August 13-17, 2018 (Week 1)
August 27-30, 2018 (Week 2)

Inspectors: E. Coffman, Reactor Inspector
L. Jones, Senior Reactor Inspector
J. Montgomery, Senior Reactor Inspector (Lead Inspector)
M. Singletary, Reactor Inspector

Approved by: Scott M. Shaeffer, Chief
Engineering Branch 2
Division of Reactor Safety

Enclosure

SUMMARY

The U.S. NRC continued monitoring licensee's performance by conducting a triennial fire protection inspection (TFPI) at Harris Nuclear Power 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 were identified.

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/inspectionprocedure/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

71111.05XT - Fire Protection – NFPA 805 (Triennial)

The inspectors evaluated the following from August 13 – August 30, 2017:

Fire Protection Inspection Requirements (4 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) FA 1-BAL-J, Reactor Aux Building – HVAC Room
- (2) FA 1-A-SWGRA, Switchgear Room A
- (3) FA 12-A-CR, Control Room, Auxiliary Building
- (4) FA 1-A-CSRA, Cable Spreading Room A

B.5.b Inspection Activities (1 Sample)

The inspectors evaluated feasibility of the following B.5.b Mitigating Strategies:

- (1) Containment Flooding with Portable Pump

EXIT MEETINGS AND DEBRIEFS

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

The inspectors confirmed that proprietary information was controlled to protect from public disclosure.

On August 30, 2018, the lead inspector presented the preliminary inspection results to Ms. T. Hamilton and other members of the licensee's staff.

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Ertman, Manager, Fleet Fire Protection
A. Holder, Fleet Fire Protection
J. Lemmer, Fire PRA
J. Nobles, Site Fire Marshal, Operations
R. Rhodes, Principal Engineer – Safe Shutdown Program Manager
H. Stiles, Fire PRA
M. White, Nuclear Operations Tech
C. Yarley, Regulatory Affairs

NRC Personnel

J. Zeiler, Senior Resident Inspector
A. Patz, Resident Inspector

LIST OF DOCUMENTS REVIEWED

Procedures

AOP-004, Remote Shutdown, Rev. 69
AOP-036, Shutdown Following a Fire, Rev. 51
AOP-036.05, Fire Areas: 1-A-CSRA, 1-A-CSR B, Rev. 20
AOP-036.08, Fire Areas: 1-A-SWGRA, 1-A- SWGRB, Rev. 21
AOP-036.13, Fire Areas: 1-A-BAL-J, 1-A-BAL-K, Rev. 8
FPP-001, Fire Protection Program Manual, Rev. 43
FPP-013, Fire Protection-Minimum Requirements, Mitigating Actions and Surveillance Requirements, Rev. 98
ISG-CC, Containment Cooling, Rev. 2
ISG-FP, Fire Protection, Rev. 2
DBD-315, Fire Detection System, Date 9/19/2017, Rev. 18
MPT-E0024, Molded Case Circuit Breaker (Safe Shutdown) Test, Rev. 56
AD-EG-ALL-1503, National Fire Protection Association (NFPA) 805 Monitoring, Rev. 1

Calculations, Evaluations, & Specifications

Areva 51-9089752-000, HNP Communication Study, Rev. 0
EC 0000071911R2, Install a new redundant radio repeater group and redundant distributed Antenna System
HNP-E/ELEC-0001, Safe Shutdown Analysis in Case of Fire, Rev. 8
HNP-E/ELEC-0003, Safe Shutdown Analysis Manual Action Feasibility, Rev. 5
HNP-F/PSA-0079, Harris Fire PRA – Quantification, Rev. 3
HNP-M/MECH-1109, NFPA 805 Transition – Fire Area 1-A-BAL-J Fire Safety Analysis, Rev. 2
HNP-M/MECH-1119, NFPA 805 Transition - Fire Area 1-A-CSRA Fire Safety Analysis, Rev. 3
HNP-M/MECH-1122, NFPA 805 Transition - Fire Area 1-A-SWGRA Fire Safety Analysis, Rev. 2
HNP-M/MECH-1127, NFPA 805 Transition - Fire Area 12-A-CR Fire Safety Analysis, Rev. 4
HNP-F/PSA-0079, Harris Fire PRA – Quantification, Rev. 3
AOP-004-BD, Remote Shutdown, Rev. 33
HNP-F/PSA-0077, Harris Fire PRA –Component Selection and Fire-Induced Model Calculation, Rev. 1
EC 87042, HNP MSO Expert Panel Report, Rev. 0
HNP00142, MSO Expert Panel Addressing Changes in the Scenarios in the Generic MSO list, Rev. 3
6-B-401 1353, Turbine Auto Trip & Overspeed, Rev. 9
HNP-M/BMRK-0011, Code Compliance Evaluation NFPA 805 Performance Based Standard For Fire Protection For Light Water Reactor Electric Generating Plants-2001 Edition, Rev. 2

Drawings

CAR 2166 B-401, Control Diagram Chiller WC-2(IB-SB) Compressor, Sheet 2631, Rev. 16
CPL-2165-S-0998, Simplified Flow Diagram HVAC Essential Services Chilled Water-Distribution Unit 1 – SA, Rev. 7
CAR 2166 B-401, Pressurizer Heater Back-Up Group D, Sheet 154, Rev. 8
CAR 2166 B-401, PIC Transfer for Alarms and A/M Stations, Sheet 1089
CAR 2166 B-401, Emergency Load Sequencer ESS Cabinet 1B-SB, Sheet 1146 & 1148
CAR 2166 B-401, 480 Volt Aux Buses 1D & 1E Instrumentation, Sheet 1694
CAR 2166 B-401, Return Service Water Main HDR Isol VA 3SW-88SA-a, Sheet 2284
CAR 2166 B-401, Aux Feedwater to Steam Gen 1B Reg Valve, Sheet 1945
CAR 2166 B-401, Aux Feedwater Pump 1X-SAB to Stm Gen 1B Isol VA 2AF-V117 SA-1, Sheet 1934

CAR 2166 B-401, Containment Atmosphere High Range Rad Mon RM-ICR-35905B, Sheet 678
 1364-090055 S01, RAB System "E" Zone 1A-1-286, Rev. 1
 1364-090055 S02, Fire Protection Sprinkler Piping RAB Cable Spread Room "A" EL. 286.00,
 Rev. 1
 1364-090055 S03, Fire Protection Sprinkler Piping RAB Cable Spread Room "A" EL. 286.00,
 Rev. 1
 1364-090055 S05, Fire Protection Sprinkler Piping RAB Cable Spread Room "A" EL. 286.00,
 Rev. 1
 G-614S01, Reactor Auxiliary Building Riser Diagrams Plumbing & Draining Unit 1, Date
 5/14/2014
 G-614S02, Reactor Auxiliary Building Riser Diagrams Plumbing & Draining Unit 1, Date
 5/14/2014
 G-599, Plumbing & Drainage, Date 5/14/1973
 G-612, Reactor Auxiliary Building Plan EL 2816.00' Plumbing & Draining Unit 1, Date 9/29/1978
 G-603, Tank Area Plumbing & Drainage, Date 6/18/1974
 G-627, Reactor Auxiliary Building Plan EL 2816.00' Plumbing & Draining Unit 1, Date 9/29/1979
 S-0684, Simplified Flow Diagram Reactor Auxiliary Building Drainage Systems Unit 1, Date
 11/21/1983
 CPL-2165 G-1000S04, Safe Shutdown (Appendix R & Station Blackout), Circulation & Service
 Water Systems, Sheet 1, Rev. 5
 CPL-2165 G-1000S01 Safe Shutdown (Appendix R & Station Blackout), Main Steam System,
 Rev. 2
 CPL-2165 G-1000S02, Safe Shutdown (Appendix R & Station Blackout), Feedwater & Aux
 Feedwater Systems Unit 1, Rev. 7
 CPL-2165 G-1000S09, Safe Shutdown (Appendix R & Station Blackout), Component Cooling
 Water System, Sheet 1, Rev. 1
 CPL-2165 G-1000S10, Safe Shutdown (Appendix R & Station Blackout), Component Cooling
 Water System, Sheet 2, Rev. 0
 CPL-2165 G-1000S14, Safe Shutdown (Appendix R & Station Blackout), Chemical & Volume
 Control System Sheet 1, Rev. 3
 CPL-2165 G-1000S15, Safe Shutdown (Appendix R & Station Blackout), Chemical & Volume
 Control System Sheet 2, Rev. 3
 CPL-2165 G-1000S16, Safe Shutdown (Appendix R & Station Blackout), Chemical & Volume
 Control System Sheet 3, Rev. 3
 CPL-2165 G-1000S17, Safe Shutdown (Appendix R & Station Blackout), Reactor Coolant
 System Sheet 1, Rev. 2
 CPL-2165 G-1000S18, Safe Shutdown (Appendix R & Station Blackout), Reactor Coolant
 System Sheet 2, Rev. 5
 CPL-2165 G-1000S21, Safe Shutdown (Appendix R & Station Blackout), Component Cooling
 Water System Sheet 3, Rev. 0
 CPL-2165 G-1000S39, Safe Shutdown (Appendix R & Station Blackout), Chemical & Volume
 Control System Sheet 2, Rev. 0

Plant Modifications and Engineering Changes (EC)

EC 56428, Power Supply Upgrade for 1AF-130 and Chiller WC-2 B-SB Control Power To
 Satisfy The Requirements of Safe Shutdown, Rev. 7

Fire Fighting Preplan Strategies

Pre-Fire Plan, CSD-HNP-PFP-RAB-286, Reactor Auxiliary Building Elevation 286 Pre-Fire Plan, Rev. 1

Pre-Fire Plan, CSD-HNP-PFP-RAB-305-324, Reactor Auxiliary Building Elevation 305 and 324 Pre-Fire Plan, Rev. 3

Audits & Self-Assessments

51 - 9089752 – 000, HNP Communication Study, Rev. 000

License Basis Documents

Title 10 of the *Code of Federal Regulations*, Part 50, Paragraph 50.48(c), National Fire Protection Association Standard NFPA 805

NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition

Progress Energy, Shearon Harris Nuclear Power Plant, Transition to 10 CFR 50.48(c), NFPA 805 Performance Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants 2001 Edition, Transition Report, May 29, 2008

Safety Evaluation Report (SER) by the Office on Nuclear Reactor Regulation (NRR) Related to Amendment No. 133 To Renewed Facility Operating License No. NPF-63 Transition to a Risk Informed, Performance Based Fire Protection Program in Accordance with 10 CFR 50.48(C), Carolina Power & Light Company Shearon Harris Nuclear Power Plant, Unit 1, Docket No, 50-400, June 28, 2010

Progress Energy, Shearon Harris Nuclear Power Plant supplemental letters dated November 14, 2008; December 11, 2008; August 13, 2009; August 28, 2009; October 9, 2009; February 4, 2010; April 5, 2010

HNP Renewed Facility Operating License NPF-63

HNP UFSAR Section 9.5, Auxiliary Systems

Carolina Power & Light Company, Shearon Harris Nuclear Power Plant Unit 1 Point By Point Comparison Of Shearon Harris Nuclear Power Plant Fire Protection With NUREG-0800 (Formerly NUREG-75/087), Branch Technical Position CMEB 9.5-1 (Formerly BTP ASP 9.5-1) Guidelines For Fire Protection For Nuclear Power Plants, May 7, 1986

Other Documents

HNP Student Text, 480V Auxiliary, Rev. 8

HNP Student Text, Auxiliary Feedwater, Rev. 7

HNP Student Text, Essential Services Chilled Water System, Rev. 12

HNP Student Text, Residual Heat Removal System, Rev. 10

HNP Student Text, Safety Injection, Rev. 10

HNP-PDSOS-060E, AUX BUS 1E TO EMERG BUS 1B-SB, Circuit Analysis Document

HNP-AFW-001E, MOTOR SUPPLIED AFW TO S/G B, Circuit Analysis Document

HNP-2018-0245, Hot Work Permit, Date 8/15/2018

HNP-2018-0255, Hot Work Permit, Date 8/21/2018

HNP-2018-0254, Hot Work Permit, Date 8/20/2018

HNP-2018-0256, Hot Work Permit, Date 8/22/2018

HNP-2018-0253, Hot Work Permit, Date 8/21/2018

HNP-2018-0233, Hot Work Permit, Date 7/26/2018

HNP-2018-0231, Hot Work Permit, Date 7/25/2018

HNP-2018-0230, Hot Work Permit, Date 7/24/2018

HNP-2018-0246, Hot Work Permit, Date 8/15/2018

Incident Commander Response Guide, Revision 0

Radwaste Liquid Systems Overview, Date 10/11/2010, Revision 7

Action Requests (ARs) /Condition Reports (CRs) Reviewed During Inspection

AR 01940704, NFPA 805 Monitoring Performance Criteria Exceeded
AR 01956609, 1SFD-E086 Exceeded NFPA PMG Unavailability
AR 02003946, FP EOP BU water func. Is not properly documented in Mrule
AR 02090920, Potential Error in the HNP NFPA 805 Monitoring Calculation
AR 02189751, NFPA 805 Monitoring – Inadequate DNA Change Management

List of ARs Generated as a Result of This Inspection

WR 20117717, Cable Spread Room B – Floor Drain Pipe Standing Water
AR 02225382, AOP-004
AR 02227086, AOP-004
AR 02227935, ORT-8002
WR 20116674, D,AH-12-1X, Ductwork Insulation, NRC Inspection
WR 20116932, NRC Triennial – Pipe Next to 3FFO-1 Missing Insulation
AR 02226531, Fire Protection Triennial: Plugged Floor Drain
AR 02228028, Discrepancy (sic) in NFPA 805 code compliance calc
AR 02225294, AOP-004
AR 02224953, NRC Triennial – Hot Work Permit Requirements not followed
AR 02225262, Fire Safety Evaluations Calculation
AR 02226336, Work Prioritization for Cold Weather Preparations
AR 02228034, Lesson Plan TTC1666-N, Rev. 1
AR 02224698, NRC Triennial Inspection – Tool box wheel lock ineffective
AR 02225383, Revise HNP-M/MECH-1127
AR 02225225, Revise HNP-MECH-1122