DUKE ENERGY®

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919.362.2502

10 CFR 50.73

June 5, 2018
Serial: HNP-18-048

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Shearon Harris Nuclear Power Plant, Unit 1
Docket No. 50-400/Renewed License No. NPF-63

Subject: Licensee Event Report 2018-001-00

Ladies and Gentlemen:

Duke Energy Progress, LLC, submits the enclosed Licensee Event Report 2018-001-00 in accordance with 10 CFR 50.73 for Shearon Harris Nuclear Power Plant, Unit 1 (HNP). This report details the automatic actuation of the auxiliary feedwater system that occurred on April 7, 2018, while the site was descending modes at the start of refueling outage H1R21.

This event had no significance with respect to the health and safety of the public. There are no regulatory commitments contained within this report.

Please refer any questions regarding this submittal to Jeff Robertson, Manager – Regulatory Affairs, at (919) 362-3137.

Sincerely,

Tanya M. Hamilton

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Enclosure: Licensee Event Report 2018-001-00

cc: J. Zeiler, NRC Senior Resident Inspector, HNP
M. Barillas, NRC Project Manager, HNP
C. Haney, NRC Regional Administrator, Region II

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NRC FORM 366
(04-2018)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 03/31/2020

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. Facility Name	2. Docket Number	3. Page
Shearon Harris Nuclear Power Plant, Unit 1	05000 400	1 OF 3

4. Title

Automatic Actuation of Auxiliary Feedwater System

5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved	
Month	Day	Year	Year	Sequential Number	Rev No.	Month	Day	Year	Facility Name	Docket Number
										05000
04	07	2018	2018	- 001	- 00	06	05	2018	Facility Name	Docket Number 05000

9. Operating Mode	11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: *(Check all that apply)*			
3	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☑ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
10. Power Level	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
000	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(C)	☐ 73.77(a)(1)
	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(i)
	☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(ii)
		☐ 50.73(a)(2)(i)(C)	☐ Other (Specify in Abstract below or in NRC Form 366A)	

12. Licensee Contact for this LER

Licensee Contact	Telephone Number (Include Area Code)
Jeffrey Robertson - Manager, Regulatory Affairs	(919) 362-3137

13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable to ICES		Cause	System	Component	Manufacturer	Reportable to ICES

14. Supplemental Report Expected	15. Expected Submission Date	Month	Day	Year
☐ Yes (If yes, complete 15. Expected Submission Date) ☑ No				

Abstract (Limit to 1400 spaces, i.e., approximately 14 single-spaced typewritten lines)

On April 7, 2018, at 0451 EDT, Shearon Harris Nuclear Power Plant, Unit 1 (HNP), was in Mode 3 following a manual shutdown for a planned refueling outage. With the "A" main feedwater pump (MFP) secured and the "B" MFP in service, the "A" and "B" motor driven auxiliary feedwater (MDAFW) pumps unexpectedly auto-started after a clearance was hung on a control power breaker circuit. The removal of power to this circuit simulated a loss of the "B" MFP, which in turn actuated the MDAFW pumps on a "Loss of Last Running MFP" auto-start signal. The "B" MFP discharge valve concurrently went in the closed direction. Operations subsequently secured the "B" MFP.

This event is being reported in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in an automatic actuation of the Auxiliary Feedwater (AFW) system. The actuation of the AFW system was valid, and the system responded to plant conditions as designed. There is no safety consequence as a result of this event. The cause was attributed to a less than adequate evaluation of plant conditions required for the clearance hang and not due to any equipment failures. All plant systems responded as designed. This event did not impact the health and safety of the public.

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Shearon Harris Nuclear Power Plant, Unit 1	05000- 400	2018	- 001	- 00

NARRATIVE

Note: Energy Industry Identification System (EIIS) codes are identified in the text within brackets [].

A. Background

Event Date: April 7, 2018 Initial Mode: 3 Initial Reactor Power: 0 percent
Event Time: 0451 EDT Final Mode: 3 Final Reactor Power: 0 percent

No Structures, Systems or Components (SSCs) were inoperable at the start of this event that contributed to the event. No change in plant mode or in reactor power occurred as a result of this event.

This event is reportable per 10 CFR 50.73(a)(2)(iv)(A) as “an event or condition that results in valid actuation of any of the systems listed in paragraph (a)(2)(iv)(B) of [10 CFR 50.73]…” due to actuation of the auxiliary feedwater (AFW) system [BA]. The AFW system actuated and functioned as designed.

The AFW system serves as a backup system for supplying feedwater to the secondary side of the steam generators [SG] at times when the normal feedwater system is not available, thereby maintaining the heat sink capabilities of the steam generator. The system provides an alternate to the Feedwater System [SJ] during start-up, hot standby, and cooldown and also functions as an engineered safeguards system. In the latter function, the AFW system is directly relied upon to prevent core damage in the event of transients such as loss of normal feedwater or a secondary system pipe rupture.

B. Event Description

On April 7, 2018, at 0451 EDT, Shearon Harris Nuclear Power Plant, Unit 1 (HNP), was in Mode 3 following a manual shutdown for a planned refueling outage. With the "A" main feedwater pump (MFP) [P] secured and the "B" MFP [P] in service, the "A" and "B" motor driven auxiliary feedwater (MDAFW) pumps [P] unexpectedly auto-started after a clearance was hung on a control power breaker circuit [72]. The removal of power to this circuit simulated a loss of the "B" MFP, which in turn actuated the MDAFW pumps on a "Loss of Last Running MFP" auto-start signal. The "B" MFP discharge valve [V] concurrently went in the closed direction and Operations subsequently secured the "B" MFP.

All components on the clearance hang checklist were operated into the proper condition or position, as delineated by the clearance checklist, at the time dictated by the outage schedule. This clearance activity should have been scheduled and performed after both of the MFPs were secured.

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

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NARRATIVE

C. Causal Factors

The direct cause of this event was the scheduling of a clearance hang under conditions in which the clearance should not have been hung. As such, this is a work scheduling issue.

D. Corrective Actions

Immediate action was taken by Operations to secure the "B" MFP while its discharge valve was stroking closed before any parameters went out of band. In addition, an additional review of all outage complex clearances was performed prior to approval to ensure required information was properly documented before clearances were hung. A communication was made to Operations to ensure Subject Matter Expert reviews are rigorous, prioritized, complete and understood by all involved in the clearance writing process prior to clearance preparation completion. Schedule logic ties for the subject control power breaker circuit were made for outage recovery to prevent re-occurrence on clearance lift.

E. Safety Analysis

The actuation of the AFW system was valid, and the system responded to plant conditions as designed. There is no safety consequence as a result of this event. The cause was attributed to a less than adequate evaluation of plant conditions required for the clearance hang and not due to any equipment failures. All plant systems responded as designed. This event did not impact the health and safety of the public.

F. Additional Information

There have been no events related to unplanned automatic actuation of the AFW system at Harris within the past three years. There are no NRC commitments contained in this LER.