



John Dills
Plant General Manager
Harris Nuclear Plant
5413 Shearon Harris Road
New Hill, NC 27562-9300

919.362.2000

10 CFR 50.73

September 20, 2018
Serial: RA-18-0158

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 2018-004-00

Ladies and Gentlemen:

Duke Energy Progress, LLC, submits the enclosed Licensee Event Report 2018-004-00 in accordance with 10 CFR 50.73 for Shearon Harris Nuclear Power Plant, Unit 1 (HNP). This report addresses a surveillance test that employed testing methodology which impacted both trains of the Emergency Core Cooling System simultaneously.

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,

A handwritten signature in blue ink that reads "John Dills". The signature is written in a cursive, flowing style.

John Dills

Enclosure: Licensee Event Report 2018-004-00

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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M. Barillas, NRC Project Manager, HNP
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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.



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/>)

1. Facility Name Shearon Harris Nuclear Power Plant, Unit 1	2. Docket Number 05000 400	3. Page 1 OF 3
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4. Title
Independent Trains of the Emergency Core Cooling System Inoperable During Testing

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
07	26	2018	2018	004	00	09	20	2018	Facility Name	05000
									Facility Name	Docket Number
										05000

9. Operating Mode

11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)

1	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
10. Power Level	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
100	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.77(a)(1)
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(2)(i)
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input checked="" type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(ii)
		<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> Other (Specify in Abstract below or in NRC Form 366A)	

12. Licensee Contact for this LER

Licensee Contact Jeffrey Robertson - Manager, Regulatory Affairs	Telephone Number (Include Area Code) (919) 362-3137
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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
D	BP	ISV	W351	Yes	D	BQ	PT	C783	Yes

14. Supplemental Report Expected
 Yes (If yes, complete 15. Expected Submission Date) No

15. Expected Submission Date

Month	Day	Year

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

On July 26, 2018, the site was preparing to perform testing on the interlocks for isolation valves used in the residual heat removal system to isolate the suction source from the reactor coolant system. The testing was historically performed during a refueling outage, but was moved to online testing procedures prior to the previous operating cycle. Prior to performing the test, it was identified that testing per the online test procedures would result in impact on both trains of the emergency core cooling system (ECCS), rendering two independent trains inoperable simultaneously.

The online testing procedures were performed on three previous occasions, twice on October 6, 2016 and once on June 26, 2018. The potential for impacting both trains of ECCS was not recognized when the testing was moved to online procedures, resulting in a procedural deficiency in the online test procedures. Performance of these tests resulted in an inoperability of independent trains due to a common cause, a reportable condition per 10 CFR 50.73(a)(2)(vii). The condition lasted for less than an hour for each test performed. The resulting cross-train impact caused a train of low head safety injection (LHSI) to be inoperable simultaneously with the alternate train of high head safety injection (HHSI). For the duration of all events, a train of both LHSI and HHSI were operable. The testing procedures have since been revised to impact a single train of ECCS only.



**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/>)

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 Shearon Harris Nuclear Power Plant, Unit 1	2. DOCKET NUMBER 05000- 400	3. LER NUMBER		
		YEAR 2018	SEQUENTIAL NUMBER 004	REV NO. 00

NARRATIVE

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

A. Background

Event Dates: October 6, 2016 (twice) / June 26, 2018 Initial Mode: 1 Initial Reactor Power: 100 percent
 Event Durations: less than 1 hour per occurrence Final Mode: 1 Final Reactor Power: 100 percent

No structures, systems or components 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)(vii) as "Any event where a single cause or condition caused ... two independent trains or channels to become inoperable in a single system..." due to two trains of the emergency core cooling system (ECCS) being inoperable at the same time during a single test. Specifically, the test procedure impacted one train of high head safety injection (HHSI)[BQ] and the opposite train of low head safety injection (LHSI)[BP] simultaneously.

The ECCS consists of multiple water reservoirs and redundant flow paths to provide emergency borated cooling water directly to the reactor coolant system (RCS) [AB] subsequent to a loss of coolant accident, main steam line break, or other event affecting RCS inventory. This system functions in conjunction with the residual heat removal system (RHRS) [BP] as LHSI and the chemical volume and control system [CB] as HHSI.

B. Event Description

On July 26, 2018, the site was preparing to perform testing on the interlocks for isolation valves [ISV] used in the RHRS to isolate the suction source from the RCS. The testing was historically performed during a refueling outage, but was moved to online testing procedures prior to the previous operating cycle. Prior to performing the test, it was identified that testing per the online test procedures would result in impact on both trains of the ECCS, rendering two independent trains inoperable simultaneously.

The online testing procedures were performed on three previous occasions. The interlocks from both 'A' and 'B' trains of ECCS were tested on October 6, 2016, and the interlocks from 'B' train of ECCS were tested on June 26, 2018. The potential for impacting both trains of ECCS was not recognized when the testing was moved to online procedures, resulting in a procedural deficiency in the online test procedures. Performance of these tests resulted in an inoperability of independent trains due to a common cause, a reportable condition per 10 CFR 50.73(a)(2)(vii). The condition lasted for less than an hour for each test performed.

The resulting cross-train impact caused a train of LHSI to be inoperable simultaneously with the alternate train of HHSI. For the duration of all events, a train of both LHSI and HHSI were operable. The testing procedures have since been revised to impact a single train of ECCS only.



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NARRATIVE

C. Causal Factors

The online testing sequence for the interlocks for the RHRS isolation valves renders a single train of HHSI inoperable by injecting a test signal in place of a pressure transmitter [PT] measuring RCS pressure. Additionally, an isolation valve from the Refueling Water Storage Tank [TK] is shut, making the respective train of LHSI inoperable.

The potential for impacting both trains of ECCS was not recognized when the surveillance tests were moved into online test procedures. A more systematic review of the new test procedure sections would have ensured no unintended consequences, such as cross-train impacts, would result.

D. Corrective Actions

Operations immediately halted the testing until the test procedures were revised. The test procedures were revised to incorporate testing methodology which would not result in cross-train impact. Lessons learned were shared among organizations involved in the original implementation of the online test procedure sections.

E. Safety Analysis

For each of the three tests conducted, the duration of cross-train impact was less than one hour. No loss of safety function occurred, as a train of LHSI and HHSI was operable throughout testing. Emergency operating procedures contain further administrative barriers to ensure the ECCS would have performed its safety function in the event the system was required to mitigate the occurrence of a design basis event during the tests. Therefore, these events did not significantly impact plant safety. There was no actual safety consequence on the health and safety of the public as a result of these events.

F. Additional Information

There have been no events in the past three years resulting in unintended cross-train impact during testing. There are no NRC commitments contained in this Licensee Event Report.