



John R. Dills
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10 CFR 50.73

June 21, 2021
Serial: RA-21-0161

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 2021-004-00

Ladies and Gentlemen:

Duke Energy Progress, LLC, submits the enclosed Licensee Event Report 2021-004-00 in accordance with 10 CFR 50.73 for Shearon Harris Nuclear Power Plant, Unit 1 (HNP). This report describes a condition where surveillance testing identified a safety valve setting outside of technical specification allowed tolerance. 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 Sarah McDaniel at (984) 229-2002.

Sincerely,

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

John R. Dills

Enclosure: Licensee Event Report 2021-004-00

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



LICENSEE EVENT REPORT (LER)

(See Page 3 for required number of digits/characters for each block)
(See NUREG-1022, R.3 for instruction and guidance for completing this form
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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 FOIA, Library, and Information Collections Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollections.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk ail: oir_submission@omb.eop.gov. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

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
Pressurizer Safety Valve Lift Setpoint Drifted Outside of Technical Specification Tolerance

5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved	
Month	Day	Year	Year	Sequential Number	Revision No.	Month	Day	Year	Facility Name	Docket Number
4	29	2021	2021	004	00	6	21	2021		05000
									Facility Name	Docket Number
										05000

9. Operating Mode 6	10. Power Level 0
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11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)

10 CFR Part 20	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	10 CFR Part 73
<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.69(g)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(4)
<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.71(a)(5)
<input type="checkbox"/> 20.2203(a)(2)(i)	10 CFR Part 21	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(1)(i)
<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 21.2(c)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(i)
<input type="checkbox"/> 20.2203(a)(2)(iii)	10 CFR Part 50	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	<input type="checkbox"/> 73.77(a)(2)(ii)
<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)	
<input type="checkbox"/> OTHER (Specify here, in abstract, or NRC 366A).				

12. Licensee Contact for this LER

Licensee Contact Sarah McDaniel, Regulatory Affairs Engineer	Phone Number (Include area code) (984) 229-2002
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13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable to IRIS	Cause	System	Component	Manufacturer	Reportable to IRIS
A	AB	RV	C710	N					

14. Supplemental Report Expected

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

15. Expected Submission Date

Month	Day	Year

16. Abstract (Limit to 1560 spaces, i.e., approximately 15 single-spaced typewritten lines)

On April 29, 2021, while Shearon Harris Nuclear Power Plant, Unit 1 (HNP), was in Mode 6 for a refueling outage, surveillance testing identified that the lift setting of pressurizer safety valve (PSV) 1RC-123 was -1.3 percent (%) from its setpoint, which is outside the Technical Specification (TS) allowed tolerance of +/-1%. The cause of the PSV lift setting being out of tolerance is a personnel error that resulted in inadvertent installation of a valve that had previously demonstrated setpoint drift incompatible with TS criteria. The PSV was replaced with another PSV confirmed to have a lift setting within the TS allowed tolerance and no history of significant drift. The PSV with a history of significant setpoint drift will be retired from service.

The +/-1% TS tolerance is more restrictive than the American Society of Mechanical Engineers code allowed tolerance of +/-3%. In addition, the safety analysis for the PSVs assumes a PSV tolerance of +/- 3%, so the as-found PSV lift setting of -1.3% is well within the safety analysis. Therefore, this event had no significance with respect to 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
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1. FACILITY NAME Shearon Harris Nuclear Power Plant, Unit 1	2. DOCKET NUMBER 05000- 400	3. LER NUMBER		
		YEAR 2021	SEQUENTIAL NUMBER 004	REV NO. 00

NARRATIVE

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

A. Background

On April 29, 2021, Shearon Harris Nuclear Power Plant, Unit 1 (HNP), was in Mode 6 for a refueling outage. A pressurizer [PZR] safety valve (PSV) [RV] in the reactor coolant system (RCS) [AB] was being tested in accordance with the HNP Inservice Testing Program. The HNP design has a total of three PSVs. One PSV is scheduled for testing each refueling outage on a rotating basis. The PSVs were manufactured by Crosby, model HB-BP 86.

On March 30, 2020, it was discovered that the PSV serial number in service for 1RC-123 was the same PSV that was previously identified with an operating history of being outside of the TS allowed tolerance when tested, based upon an investigation completed in March 2015. The corrective action to address the PSV's history of significant setpoint drift was to retire the PSV from service. The corrective action was not implemented due to a personnel error. The PSV was inadvertently reinstalled in the 2016 fall refueling outage with an acceptable lift setting. While the potential for drift in the PSV was recognized in March 2020, it was concluded that the PSV was operable, based upon a review of the installed as-left lift setting and the historical drift amount observed on this PSV. However, upon testing the PSV's lift setpoint in the current refueling outage, it was discovered that the setpoint had drifted further than anticipated. The PSV exhibited increasing amounts of setpoint drift. The PSV has been removed from service and will be retired.

No other systems, structures or components were inoperable at the time that contributed to the event. This event is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as "any operation or condition which was prohibited the plant's Technical Specifications," because there is evidence the PSV lift setting was outside of the tolerance prescribed by TS prior to discovery.

B. Event Description

1RC-123 was tested on April 29, 2021, and found with a lift setting of -1.3 percent (%) from its setpoint, which is outside the TS allowed tolerance of +/-1%. A spare PSV was installed in the 1RC-123 location, which was confirmed to be left within the allowed tolerance of +/-1% and does not have a history of significant setpoint drift. The specific date and time that the PSV became out of tolerance is not known and cannot be determined. Testing of the PSV is accomplished by removing the PSV from the system during a refueling outage and having the PSV tested by a vendor. Therefore, the testing does not cause a system transient. There were no automatically or manually initiated safety system responses due to the out of tolerance condition identified.

C. Causal Factors

The cause of the PSV lift setting being outside of the TS allowed tolerance is a personnel error that resulted in inadvertent installation of a PSV that had previously demonstrated a significant amount of setpoint drift. In each of the last five tests, the PSV failed low with as-found values ranging from -1.09% to -1.45% below the setpoint. The lift setting drift is specific to the PSV in question and not applicable to the entire population of PSVs.

D. Corrective Actions

The PSV was replaced with another PSV confirmed to have a lift setting within the TS allowed tolerance and no history of significant setpoint drift. The PSV with an operating history of being outside TS tolerance will be retired from service.



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NARRATIVE

E. Safety Analysis

Premature operation of the PSV could adversely impact departure from nucleate boiling ratio conditions in events such as the reactor coolant pump [P] seized rotor. The safety analysis for the PSVs assumes a PSV tolerance of +/- 3%, so the as-found PSV lift setting of -1.3% is well within the safety analysis. Therefore, the reported low opening pressure of 1RC-123 had no significance with respect to the health and safety of the public.

F. Additional Information

HNP Licensee Event Report (LER) 2015-001-00 reported a similar condition, where a PSV lift setting was found outside of the TS tolerance.