



FirstEnergy Nuclear Operating Company

Perry Nuclear Power Plant
P.O. Box 97
10 Center Road
Perry, Ohio 44081

Frank Payne
Vice President

440-280-5382

July 18, 2019
L-19-153

10CFR50.73(a)(2)(v)(D)

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

SUBJECT:
Perry Nuclear Power Plant
Docket No. 50-440, License No. NPF-58
Licensee Event Report Submittal

Enclosed is Licensee Event Report (LER) 2019-002, "LER 2019-002, Loss of Safety Function due to Low Pressure Core Spray Inoperability". There are no regulatory commitments contained in this submittal.

If there are any questions or if additional information is required, please contact Mr. Glendon Burnham, Manager – Regulatory Compliance, at (440) 280-7538.

Sincerely,

DOUGLAS C. SALTZ FOR
Frank R. Payne
Vice President

Enclosure:
LER 2019-002

cc: NRC Project Manager
NRC Resident Inspector
NRC Region III Regional Administrator

Enclosure
L-19-153

LER 2019-002



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/>

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 Perry Nuclear Power Plant	2. Docket Number 05000-440	3. Page 1 OF 3
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4. Title:
Loss of Safety Function Due to Low Pressure Core Spray Inoperability

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
05	24	2019	2019	002	00	07	18	2019	Facility Name	Docket Number
										05000
										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)							
100	<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)							
	<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 checked="" 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 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 George Dujanovic – Regulatory Compliance	Telephone Number (Include Area Code) 440-280-5200
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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
A	BM	FU	X999	Y					

14. Supplemental Report Expected <input type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date) <input checked="" type="checkbox"/> No	15. Expected Submission Date
	Month: Day: Year:

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

On May 24, 2019, at 0730 hours, the Low Pressure Core Spray (LPCS) system was declared inoperable due to the inoperability of the Emergency Service Water (ESW) A pump. ESW A pump was declared inoperable based on a loss of continuity through the breaker control power closing fuses. Since LPCS is a supported system and a single train safety system, as specified in site procedures, LPCS inoperability is considered a loss of safety function and is reportable.

The cause for ESW A inoperability is that the Non-Licensed Operators (NLO) did not recognize that the control power fuses (AX) for ESW A pump breaker closing power were not fully seated following installation, after recent breaker racking activities. Corrective actions include changes to Switchgear, and Electrical Operator Safety training lesson plans, and a discussion of the event during NLO continuing training.

The safety significance of this event is considered very small. This event is being reported in accordance with 10 CFR 50.73(a)(2)(v)(D) as an event or condition that could have prevented the fulfillment of a safety function needed to mitigate the consequences of an accident.



**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	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Perry Nuclear Power Plant	05000-440	2019	- 002	- 00

NARRATIVE

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

INTRODUCTION

The inoperability and loss of safety function of Low Pressure Core Spray (LPCS) [BM] system occurred as a result of the inoperability of Emergency Service Water (ESW) [BI] A based upon the receipt of unexpected alarms in the Control Room for Residual Heat Removal (RHR) [BO] A and Division 1 Diesel Generator (DG) [EK] out of service, following the start of ESW A pump for pump packing adjustment. Subsequent investigation discovered that the control power fuses for ESW A pump breaker closing power were not seated properly. With LPCS being a single train safety system, this resulted in a loss of function, resulting in a 10 CFR 50.72 notification and a 10 CFR 50.73 report.

EVENT DESCRIPTION

On May 24, 2019 at 0730 hours and with the reactor in MODE 1 at 100 percent rated thermal power, unexpected alarms were received for RHR A and Division 1 DG out of service, following the start of ESW pump A for pump packing adjustment. Control room panel indications were illuminated for ESW Pump A Breaker Out / Power Loss / Overload. ESW A pump remained running during this time. Upon investigation of the ESW A pump breaker EH1106, it was discovered that the closing control power fuses (AX) were not seated properly. This resulted in inoperability of the ESW A system.

As a result of the ESW A inoperability, the LPCS system was declared inoperable along with the other supported systems in accordance with Technical Specifications. LPCS is described as a single train safety system in site procedures. As such, when LPCS has an unplanned inoperability, it is reportable to the NRC under 10 CFR 50.72(b)(3)(v)(D) and 10 CFR 50.73(a)(2)(v)(D) as a Loss of Safety Function.

Fuse block AX for breaker EH1106 was re-seated by the initial responder and further investigation determined that the AX fuse block, when properly and fully seated, had no issue staying properly in place and with adequate tightness. This demonstrated that the closing power fuse block was not loose and was not jarred out of the seated position during breaker operation. ESW A pump was then stopped and restarted successfully. ESW A was declared operable on May 24, 2019 at 1512 hours.

On May 24, 2019 at 1309 hours, Notification (EN 54085) was made under 10 CFR 50.72(b)(3)(v)(D). This Licensee Event Report is being reported under 10 CFR 50.73(a)(2)(v)(D) as a loss of safety function.

CAUSE OF EVENT

The cause for ESW A inoperability is that the Non-Licensed Operators (NLO) did not recognize that the control power fuses (AX) for ESW A pump breaker closing power were not fully seated following installation, during recent breaker racking activities in accordance with procedure SOI-R22, Metal Clad Switchgear 5-15 Kilovolt (KV).



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NARRATIVE

EVENT ANALYSIS

A Probabilistic Risk Assessment (PRA) evaluation was performed for the May 24, 2019 loss of safety function event. A conservative analysis of this condition results in an increase in Core Damage Frequency (CDF) and Large Early Release Frequency (LERF) that is well below the acceptable thresholds discussed in Regulatory Guide 1.174. The calculated increase in risk for this event is therefore considered to be very small.

CORRECTIVE ACTIONS:

Fuse block AX, for breaker EH1106, was re-seated by the initial responder. Further investigation determined that the AX fuse block, when properly and fully seated, had no issue relative to staying properly in place with adequate tightness.

A corrective action was written to change the 1) Perry Switchgear and 2) Electrical Operator Safety and Administration lesson plans to include a maintenance fundamental discussion of seating fuses and fuse blocks with physical or visual cues, including the importance of fully seated fuses within their receptors and identification of those fuse and fuse block receptors which may be loose and the need to identify the issue in the work management / corrective action processes. A corrective action for an NLO topic for seating fuses and fuse blocks with physical or visual cues, including the importance of fully seated fuses, will be discussed during an NLO continuing training cycle.

PREVIOUS SIMILAR EVENTS:

None

COMMITMENTS

None