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February 10, 2021

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

10 CFR 50.73

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 50-387/2020-002-01
UNIT 1 LICENSE NO. NPF-14
PLA-7916

Docket No. 50-387

Attached is Licensee Event Report (LER) 50-387/2020-002-01. The LER supplement reports an event involving the failure to start of the Unit 1 "B" Residual Heat Removal Service Water pump that was determined to be reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications.

There were no actual consequences to the health and safety of the public as a result of this event.

This letter contains no new or revised regulatory commitments.

A handwritten signature in black ink, appearing to be "K. Cimorelli", written in a cursive style.

K. Cimorelli

Attachment: LER 50-387/2020-002-01

Copy: NRC Region I
Mr. C. Highley, NRC Senior Resident Inspector
Ms. S. Goetz, NRC Project Manager
Mr. M. Shields, PA DEP/BRP



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 <https://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 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 Susquehanna Steam Electric Station Unit 1	2. Docket Number 05000387	3. Page 1 of 3
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4. Title
Inoperability of Unit 1 "B" Residual Heat Removal Service Water Pump Due to the Circuit Breaker Spring Charging Motor Contact Actuator Being Out of Adjustment

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	01	2020	2020	- 002 -	01	02	10	2021	Facility Name	Docket Number 05000
									Facility Name	Docket Number 05000

9. Operating Mode 1 **10. Power Level** 100

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)	

Other (Specify here, in Abstract, or in NRC 366A).

12. Licensee Contact for this LER

Licensee Contact D. R. Smith, Senior Engineer – Nuclear Regulatory Affairs	Phone Number (Include Area Code) 570-542-1377
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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
E	BI	72	C770	Y					

14. Supplemental Report Expected **15. Expected Submission Date**

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

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

On July 1, 2020 at approximately 20:26, the Unit 1 "B" Residual Heat Removal Service Water (RHRSW) pump did not start when being placed into service for Spray Pond Cooling testing, resulting in the pump being declared inoperable. Upon the discovery of the condition, Susquehanna entered Technical Specification (TS) 3.7.1 Condition B for one RHRSW subsystem being inoperable. Investigation at the pump circuit breaker identified the closing springs did not recharge following the circuit breaker's last closing operation. Following maintenance, the spring charging motor operated as expected and the breaker was tested successfully. TS 3.7.1 Condition B was exited on July 2, 2020 at approximately 02:44.

Based on the investigation completed, the condition is considered to have existed for longer than allowed by TS 3.7.1. The condition is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by TS. The direct cause of the event was the Eaton/Cutler-Hammer 4.16kV vacuum circuit breaker spring charging motor contact actuator being out of adjustment. Actuator age was determined to be the most likely causal factor, combined with the original equipment manufacturer vendor's failure to recommend a periodic replacement for the circuit breaker's two limit switches. Key corrective actions include: replaced the 1B RHRSW pump circuit breaker and a planned revision to the preventive maintenance strategy for the spring charging motor actuator based on vendor recommendations. There were no actual consequences to the health and safety of the public as a result of this event.



**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

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1. FACILITY NAME Susquehanna Steam Electric Station Unit 1	2. DOCKET NUMBER 05000-387	3. LER NUMBER		
		YEAR 2020	SEQUENTIAL NUMBER - 002 -	REV NO. 01

NARRATIVE

CONDITIONS PRIOR TO EVENT

Unit 1 – Mode 1, approximately 100 percent Rated Thermal Power
Unit 2 – Mode 1, approximately 100 percent Rated Thermal Power

There were no structures, systems, or components that were inoperable at the start of the event that contributed to the event.

EVENT DESCRIPTION

On July 1, 2020 at approximately 20:26, the Unit 1 “B” Residual Heat Removal Service Water (RHRSW) pump (1P506B) [EIS System Code/Component Code: BI/P] did not start when being placed into service for Spray Pond Cooling testing, resulting in the pump being declared inoperable. Upon discovery of the condition, Susquehanna entered Technical Specification (TS) 3.7.1 Condition B for one RHRSW subsystem being inoperable.

On July 2, 2020, investigation at the pump circuit breaker (1A20408) [EIS Component Code: 72] identified the closing springs did not recharge following the circuit breaker’s last closing operation on June 21, 2020 at approximately 07:35. Following maintenance, the spring charging motor operated as expected and the breaker was tested successfully. TS 3.7.1 Condition B was exited on July 2, 2020 at approximately 02:44.

Based on the investigation completed, the condition is considered to have existed for longer than allowed by TS 3.7.1. The condition is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specification.

CAUSE OF EVENT

The direct cause of the event was the Eaton/Cutler-Hammer 4.16kV vacuum circuit breaker spring charging motor contact actuator being out of adjustment with the motor cut off cam, resulting in the spring charging motor contact not experiencing full travel. Additionally, age was determined to be the most likely causal factor, combined with the original equipment manufacturer vendor’s failure to recommend a periodic replacement for the circuit breaker’s two limit switches.

ANALYSIS/SAFETY SIGNIFICANCE

During the period the 1B RHRSW pump was inoperable, the 1A RHRSW pump was verified to be operable. An engineering evaluation was completed to analyze having only the 1A RHRSW pump available with the 1B RHRSW pump inoperable. The engineering evaluation concluded that, with only the 1A RHRSW pump in operation, the accident analysis assumptions were met and the RHRSW system could perform its design function. Based on the engineering evaluation and verification that the 1A RHRSW pump was operable during the period the 1B RHRSW pump was inoperable, the condition described herein did not result in a safety system functional failure. Accordingly, this event will not be counted as a safety system functional failure in the Reactor Oversight Process Performance Indicators. There were no actual consequences to the health and safety of the public as a result of this event.



**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
Susquehanna Steam Electric Station Unit 1	05000-387	YEAR 2020	SEQUENTIAL NUMBER - 002 -	REV NO. 01

NARRATIVE

CORRECTIVE ACTIONS

Key corrective actions include:

1. Replaced 1B RHRSW pump circuit breaker 1A20408.
2. Revise the preventative maintenance strategy for the spring charging motor contact actuator and associated limit switch based on overhaul vendor recommendation.

COMPONENT FAILURE INFORMATION

Component failure information is as follows:

Manufacturer: EATON/Cutler-Hammer

Model No.: 50DHP-VR-250U

Description: 5kV Vacuum Replacement Metal Clad Circuit Breaker

PREVIOUS OCCURRENCES

None.