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July 18, 2019

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(388)/2019-001-00**  
**UNIT 1 LICENSE NO. NPF-14**  
**UNIT 2 LICENSE NO. NPF-22**  
**PLA-7792**

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**Docket No. 50-387**  
**and 50-388**

Attached is Licensee Event Report (LER) 50-387(388)/2019-001-00. This LER is reporting a condition in which there was a loss of both the A and B Control Structure Chillers. This condition was determined to be reportable in accordance with 10 CFR 50.73(a)(2)(v)(A), (B), (C), and (D) as a condition that could have prevented the fulfillment of a safety function. 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 dark ink, appearing to be "K. Cimorelli", written in a cursive style.

K. Cimorelli

Attachment: LER 50-387(388)/2019-001-00

Copy: NRC Region I  
Ms. L. H. Micewski, NRC Sr. Resident Inspector  
Ms. T. E. Hood, NRC Project Manager  
Ms. J. C. Tobin, NRC Project Manager  
Mr. M. Shields, PA DEP/BRP

<b>NRC FORM 366</b> (04-2018)		<b>U.S. NUCLEAR REGULATORY COMMISSION</b>			<b>APPROVED BY OMB: NO. 3150-0104    EXPIRES: 03/31/2020</b>							
		<b>LICENSEE EVENT REPORT (LER)</b> (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 <a href="http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/">http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/</a> )										
<b>1. Facility Name</b> Susquehanna Steam Electric Station Unit 1					<b>2. Docket Number</b> 05000387		<b>3. Page</b> 1 OF 3					
<b>4. Title</b> Loss of Both Control Structure Chillers												
<b>5. Event Date</b>			<b>6. LER Number</b>			<b>7. Report Date</b>			<b>8. Other Facilities Involved</b>			
Month	Day	Year	Year	Sequential Number	Rev No.	Month	Day	Year	Facility Name	Docket Number		
05	22	2019	2019	001	00	07	18	2019	Susquehanna Steam Electric Station Unit 2	05000388		
									Facility Name	Docket Number		
										05000		
<b>9. Operating Mode</b>  1		<b>11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)</b>										
		<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)	
<b>10. Power Level</b>  100		<input type="checkbox"/> 20.2203(a)(2)(ii)			<input type="checkbox"/> 50.36(c)(1)(ii)(A)			<input checked="" 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 checked="" 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 checked="" 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)(ii)	
		<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)(iii)	
		<input type="checkbox"/> 50.73(a)(2)(i)(C)			<input type="checkbox"/> Other (Specify in Abstract below or in NRC Form 366A							
<b>12. Licensee Contact for this LER</b>												
<b>Licensee Contact</b> Shane Jurek, Senior Engineer – Nuclear Regulatory Affairs								<b>Telephone Number</b> (Include Area Code) (570) 542-1695				
<b>13. Complete One Line for each Component Failure Described in this Report</b>												
Cause	System	Component	Manufacturer	Reportable To ICES	Cause	System	Component	Manufacturer	Reportable To ICES			
<b>14. Supplemental Report Expected</b>					<b>15. Expected Submission Date</b>			Month	Day	Year		
<input checked="" type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date) <input type="checkbox"/> No								08	30	2019		
<b>Abstract</b> (Limit to 1400 spaces, i.e., approximately 14 single-spaced typewritten lines)												
On May 22, 2019, at 0240, the A Control Structure (CS) Chiller tripped due to a loss of power to Motor Control Center (MCC) 0B136. At the time of the trip, the B CS Chiller was out of service for planned maintenance on the Emergency Service Water (ESW) System. The CS Chillers are required to be operable by Technical Specifications (TS) Limiting Conditions for Operation (LCOs) 3.7.3, "Control Room Emergency Outside Air Supply (CREAOS) System" and 3.7.4, "Control Room Floor Cooling System." The CREOAS and Control Room Floor Cooling systems provide cooling and ventilation to various safety-related loads including the control room, computer room, relay rooms, and emergency switchgear rooms. The loss of both chillers required entry in LCOs 3.7.3, 3.7.4, and 3.0.3, thereby requiring the commencement of a dual unit shutdown. As a result, this event was reported in accordance with 10 CFR 50.72(b)(3)(v) as a condition which could have prevented the fulfillment of a safety function and 10 CFR 50.72(b)(2)(i) for the initiation of a plant shutdown required by TS. The power reduction was halted upon restoration of the A CS Chiller. The condition was also determined to be reportable in accordance with 10 CFR 50.73(a)(2)(v) as a condition that could have prevented the fulfillment of a safety function.												
The event is still under investigation. Causal information and corrective actions will be provided in a supplement to this Licensee Event Report (LER).												
There were no actual safety consequences associated with the condition.												

**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](mailto: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. LER NUMBER		
Susquehanna Steam Electric Station Unit 1		05000-387	YEAR	SEQUENTIAL NUMBER	REV NO.
			2019	001	00

**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

At the time of the event, Division II of the ESW System was out of service for planned maintenance. This rendered the B CS Chiller inoperable.

**EVENT DESCRIPTION**

On May 19, 2019, at approximately 2230, Division II of the ESW system was removed from service for planned maintenance. This rendered the B CS Chiller inoperable. Subsequently, on May 22, 2019, at 0240, the A CS Chiller [EIS Code: VI] tripped due to a loss of power to MCC 0B136. Susquehanna Steam Electric Station TS LCO 3.7.3, "Control Room Emergency Outside Air Supply (CREOAS) System," and LCO 3.7.4, "Control Room Floor Cooling System," require entry into LCO 3.0.3 upon loss of both CS Chillers. At 0256, operators declared the CREOAS and Control Room Floor Cooling Systems inoperable and entered LCO 3.0.3. Unit shutdown commenced at 0340 and 0350 for Units 2 and 1, respectively. Power was restored to MCC 0B136 at 0901 on May 22, LCO 3.0.3 was exited, and the power reductions were halted.

The CS Chillers are required to be operable to support operation of the CREOAS and Control Room Floor Cooling systems. The CREOAS and Control Room Floor Cooling systems provide cooling and ventilation to various safety-related loads including the control room, computer room, relay rooms, and emergency switchgear rooms. As a result, the condition was determined to be reportable in accordance with 10 CFR 50.73(a)(2)(v) as a condition that could have prevented the fulfillment of a safety function of systems that are required to; (A) shut down the reactor and maintain it in a safe shutdown condition; (B) remove residual heat; (C) control the release of radioactive material; or (D) mitigate the consequences of an accident.

**CAUSE OF EVENT**

The cause of the event is still under investigation. A supplement to this LER will be issued to provide information on the final conclusions regarding the cause of the condition.

**ANALYSIS/SAFETY SIGNIFICANCE**

Due to the concurrent loss of the A and B CS Chillers, neither division of the Control Room Floor Cooling and CREOAS systems were available to perform their safety functions in the event of a design basis accident (DBA) (e.g., Loss of Coolant Accident Coincident with a Loss of Offsite Power). Any operator action to restore either CS Chiller would have required significant time and, therefore, would not have supported the safety function of the systems.

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

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Susquehanna Steam Electric Station Unit 1	05000-387	YEAR	SEQUENTIAL NUMBER	REV NO.
		2019	001	00

Based on engineering analysis, this event will be counted as a safety system functional failure under the NRC Reactor Oversight Process Performance Indicator.

## CORRECTIVE ACTIONS

Corrective actions will be determined upon completion of the causal analysis and will be described in the supplement to this LER.

## PREVIOUS OCCURRENCES

LER 50-388(387)/2015-015-00, "Loss of Safety Function due to Inoperability of Both Trains of the Control Room Emergency Outside Air Supply (CREOAS) System," dated May 5, 2016

LER 50-387(388)/2014-009-00, "Loss of Both Trains of Control Structure Chilled Water during Application of Clearance Order," dated August 11, 2014

LER 50-387(388)/2014-008-00, "Loss of Both Trans of Control Structure Chilled Water due to Personnel Error," dated August 11, 2014