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**AUG 11 2014**

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

**SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSEE EVENT REPORT # 387(388) 2014-009-00  
UNIT 1 LICENSE NO. NPF-14  
UNIT 2 LICENSE NO. NPF-22  
PLA-7211**

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**Docket No 50-387  
50-388**

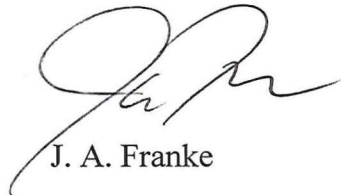
Attached is Licensee Event Report (LER) 50-387(388)/2014-009-00. The LER reports a condition in which both trains of Susquehanna Control Structure HVAC and Control Room Emergency Outside Air Supply were inoperable. The condition was determined to be reportable in accordance with 10 CFR 50.73(a)(2)(v)(D) as an event or condition that could have prevented the fulfillment of a safety function.

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

No new regulatory commitments are contained in this letter.

If you have any questions, please contact Mr. John Tripoli, Manager Nuclear Regulatory Affairs at (570) 542-3100.

Sincerely,



J. A. Franke

copy: NRC Region I  
Mr. J. E. Greives, NRC Sr. Resident Inspector  
Mr. J. A. Whited, NRC Project Manager  
Mr. L. J. Winker, PA DEP/BRP

**LICENSEE EVENT REPORT (LER)**(See Page 2 for required number of  
digits/characters for each block)

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, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet 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**

Susquehanna Steam Electric Station, Unit 1

**2. DOCKET NUMBER**

05000 387

**3. PAGE**

1 OF 3

**4. TITLE**

Loss of Both Trains of Control Structure Chilled Water during Application of Clearance Order

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
06	13	2014	2014	009	00	08	11	2014	Susquehanna Unit 2	05000 388
									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)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<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)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
10. POWER LEVEL  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)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<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)(C)	<input type="checkbox"/> OTHER
	<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)(v)(D)	Specify in Abstract below or in NRC Form 366A

**12. LICENSEE CONTACT FOR THIS LER**

## LICENSEE CONTACT

S. M. Jurek, Engineer - Nuclear Regulatory Affairs

## TELEPHONE NUMBER (Include Area Code)

(570) 542-3407

**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

**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 15 single-spaced typewritten lines)**

On June 13, 2014 at 0452 hours, while applying a Clearance Order (CO) to repair an Instrument Air valve, Susquehanna Steam Electric Station (SSES) operators opened the circuit breaker supplying power to the A Control Structure (CS) Chiller Condenser Circulating Pump, tripping Division 1 of CS Chilled Water (CSCW). The breaker supplying power to Division 2 was already open, rendering both Divisions of CSCW inoperable which prompted entry into Limiting Conditions for Operation (LCOs) 3.0.3, 3.7.3, and 3.7.4 at 0452 hours. LCO 3.0.3 was exited at 0503 hours when SSES operators closed the breaker and returned Division 1 of CSCW to service. LCOs 3.7.3 and 3.7.4 were exited at 0507 hours when SSES operators returned Division 2 of CSCW to service. The SSES Technical Specifications for CS HVAC and Control Room Emergency Outside Air Supply (CREOAS) require both Divisions of CSCW to be OPERABLE during normal plant operations. In accordance with 10 CFR 50.72(b)(3)(v)(D), an eight-hour ENS notification (# 50200) was made to the NRC for an event or condition that at the time of discovery, could have prevented the fulfillment of a safety function. The apparent cause was that the CO writer did not engage engineering for a final peer check of the impacts and effects of the CO prior to application of the CO. Key planned corrective actions include revising the CO procedure to require system engineering review prior to establishing a CO when engineering has evaluated the impacts and effects of the CO; and labelling the breakers that control the CS Chiller Condenser Circulating pumps (A and B) to indicate that if both breakers are open a loss of both trains of CSCW will occur. There were no actual or potential consequences to the health and safety of the public as a result of this event.





## LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

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, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet 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	6. LER NUMBER			3. PAGE
Susquehanna Steam Electric Station, Unit 1	05000 387	YEAR	SEQUENTIAL NUMBER	REV NO.	2    OF    3
		2014	-    009	-    00	

### NARRATIVE

#### CONDITIONS PRIOR TO THE EVENT

Unit 1 – Mode 1, 100% Rated Thermal Power

Unit 2 – Mode 1, 100% Rated Thermal Power

No structures, systems, or components were inoperable prior to the event which contributed to the event.

#### EVENT DESCRIPTION

On June 13, 2014 at 0452 hours, in accordance with CO 18-001-1495813-0, SSES operators opened breaker 0B136023 (Breaker A) which supplies power to CS Chiller Condenser Service Water Circulating Pump A. Removing power from CS Chiller Condenser Service Water Circulating Pump A caused CSCW Circulating Pump A and CS Chiller A to trip, rendering Division 1 of CSCW inoperable. CS Chiller B was set in standby mode, and should have started upon loss of CS Chiller A. However, SSES operators had already opened breaker 0B146033 (Breaker B) which supplies power to CS Chiller Condenser Service Water Circulating Pump B, and CSCW Circulating Pump B and CS Chiller B were not running, thus rendering Division 2 of CSCW inoperable. Upon opening Breaker A and CS Chiller B failing to start due to Breaker B being open, both Divisions of CSCW were declared inoperable, rendering CS HVAC and CREOAS inoperable and requiring entry into LCOs 3.0.3, 3.7.3, and 3.7.4 at 0452 hours.

Upon recognizing the loss of both trains of CSCW, SSES operators closed Breaker A, and restarted CS Chiller Condenser Service Water Circulating Pump A. This action restarted CSCW Circulating Pump A and CS Chiller A, thus restoring Division 1 of CSCW to OPERABLE. LCO 3.0.3 was exited at 0503 hours on June 13. LCOs 3.7.3 and 3.7.4 remained in effect until 0507 hours on June 13 when Breaker B was closed and Division 2 of CSCW was restored to OPERABLE.

#### CAUSE OF THE EVENT

The apparent cause of the event was determined to be less than adequate verification practices in that the CO writer did not engage the system engineer for a final peer check after modification of the engineer's recommendations and prior to CO application. Two causal factors were identified as follows: 1) The CO review process did not require a final review by the system engineer, and 2) The CO writer was focused on energy isolation more than the impacts and effects of energy isolation.

Prior to writing the CO, the CSCW system engineer evaluated the impacts and effects of repairing Valve 0251389 (Instrument Air Supply to CSCW Expansion Tank Valve). The system engineer reviewed the impacts and effects and recommended closing valves 086001 and 086101 (CS Chiller A/B Condenser Service Water Return Isolation Valves). Rather than closing the recommended valves, the CO closed valves 086003 and 086103 (CS Chiller A/B Condenser Service Water Outlet Isolation Valve) and opened Breakers A and B to protect the CS Chiller Condenser Service Water Circulating Pumps. Procedure NDAP-QA-0322, "Energy Control Process" requires that pump breakers be opened when flow has been isolated to the affected pumps. Opening Breakers A and B had not been evaluated by the system engineer, and the impacts and effects of opening Breakers A and B were not understood by the CO writer.

The CO writer and the system engineer were in communication throughout the evaluation of the impacts and events of the CO. However, when the final CO was completed the CO writer did not engage the system engineer for a final peer check of the impacts and effects. By not engaging the system engineer after revising the impacts and effects, a technical review opportunity was missed. This led to the CO being issued with flaws that caused the loss of both trains of CSCW, and resulting loss of CS HVAC and CREOAS. There was no procedural requirement for the CO writer to engage the station engineer after the CO was written and before it was applied.

# LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
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		2014	- 009	- 00	

## NARRATIVE

### ANALYSIS/SAFETY SIGNIFICANCE

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

In accordance with NEI 99-02 Revision 7, engineering evaluated this event and determined CS HVAC and CREOAS were capable of performing their safety functions. As such, this event will not be counted as a Safety System Functional Failure for the NRC Reactor Oversight Process Performance Indicators.

### CORRECTIVE ACTIONS

Key corrective actions include:

1. NDAP-QA-0322, "Energy Control Process," will be revised to ensure that in instances where system engineering evaluates the impacts and effects of a CO, the system engineer shall review the final impacts and effects prior to establishing the CO.
2. Breakers A and B will be labelled to indicate that if the breakers are open, a loss of both trains of CSCW will occur resulting in a dual unit entry into LCO 3.0.3

### PREVIOUS SIMILAR EVENTS

LER 50-387(388)/2012-010-01: Both Trains of Control Structure HVAC at Susquehanna were Rendered Inoperable  
LER 50-387(388)/2014-008-00: Loss of Both Trains of Controlled Structure Chilled Water due to Personnel Error