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MAY 26 2016

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

10 CFR 50.73

**SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 50-387/2016-009-00
UNIT 1 LICENSE NO. NPF-14
PLA-7479**

Docket No. 50-387

Attached is Licensee Event Report (LER) 50-387/2016-009-00. This LER reports a Primary Containment Isolation System (PCIS) actuation as a result of a valid automatic isolation signal. This LER is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(iv)(A).

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

This letter contains no new regulatory commitments.

John A. Franke
J. A. Franke

Attachment: LER 50-387/2016-009-00

Copy: NRC Region I
Mr. J. E. Greives, NRC Sr. Resident Inspector
Ms. T. E. Hood, NRC Project Manager
Mr. M. Shields, 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

05000387

3. PAGE

1 of 4

4. TITLE

Valid Primary Containment Isolation Actuation during Local Leak Rate Testing due to Human Performance Error

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
03	31	2016	2016	- 009	- 00	05	26	2016	FACILITY NAME	DOCKET NUMBER
										05000
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)			
5	<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 checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
10. POWER LEVEL	<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 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

M. Krick, Senior Engineer - Nuclear Regulatory Affairs

TELEPHONE NUMBER (Include Area Code)

(570) 542-1818

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
					N/A	N/A	N/A	N/A	N/A

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 March 31, 2016 at approximately 06:03, while performing lineups for Local Leak Rate Testing (LLRT), the Control Room received a Division two (2) Primary Containment Isolation System (PCIS) alarm along with a Division two (2) Heating Ventilation Air Conditioning (HVAC) isolation, and Standby Gas Treatment (SBGT) and Control Room Emergency Outside Air Supply System (CREOASS) initiation. This was shortly followed by the Division one (1) Primary Containment Isolation System (PCIS) alarm along with a Division one (1) Heating Ventilation Air Conditioning (HVAC) isolation, and Standby Gas Treatment (SBGT) and Control Room Emergency Outside Air Supply System (CREOASS) initiation.

The valid actuation signal was the result of the performance of four (4) LLRT procedures concurrently for four (4) separate drywell pressure instruments. These instruments are divisional with each powered by a different channel. Placing each in "TEST" mode, resulted in bringing both the Division one (1) and Division two (2) isolation logic. The cause of the valid actuation signal was less than adequate procedure use and adherence by Operations staff members. Corrective action included coaching and remediation of an individual involved in confirming the position of the test switch, communication to the Operations organization and revision to the LLRT procedures.

There was no operational impact as a result of this this event due to the plant being in Mode 5. This event resulted in a eight (8) hour Emergency Notification System (ENS) communication pursuant to 10 CFR 50.72(b)(3)(iv)(A). This Licensee Event Report (LER) is being communicated pursuant to 10 CFR 50.73(a)(2)(iv)(A).

NRC FORM 366A
(11-2015)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104

EXPIRES: 10/31/2018



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	05000387	YEAR	SEQUENTIAL NUMBER	REV NO.
		2016	- 009	- 00

NARRATIVE

CONDITIONS PRIOR TO EVENT

Unit 1 - Mode 5, 0 percent Rated Thermal Power

Unit 2- Mode 1, 100 percent Rated Thermal Power

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

EVENT DESCRIPTION

On March 31, 2016 at approximately 06:03, while performing lineups for Local Leak Rate Testing (LLRT), the Control Room received a Division two (2) Primary Containment Isolation System (PCIS) [EIS System Identifier: JM] alarm along with a Division two (2) Heating Ventilation Air Conditioning (HVAC) [EIS System Identifier: VA] isolation, and Standby Gas Treatment (SBGT)[EIS System Identifier: BH] and Control Room Emergency Outside Air Supply System (CREOASS) initiation [EIS System Identifier: VI]. This was shortly followed by the Division one (1) Primary Containment Isolation System (PCIS) alarm along with a Division one (1) Heating Ventilation Air Conditioning (HVAC) isolation, and Standby Gas Treatment (SBGT) and Control Room Emergency Outside Air Supply System (CREOASS) initiation. The following timeline summarizes the events prior to the PCIS isolation:

3/25/16: LLRT PCO (Plant Control Operator) requested Operations Supervision release LLRT procedure SE-159-123 (B channel) and LLRT procedure SE-159-125 (D channel). The Senior Reactor Operator (SRO) reviewed the procedures and outage schedule. There were no issues with performing the LLRTs noted and the work was released.

3/31/16: 0550: LLRT PCO began system alignment for LLRT procedure SE-159-122 (A channel) and LLRT procedure SE-159-124 (C channel). The Residual Heat Removal (RHR) to Radwaste (RW) Inboard Valve, F040, Isolation Logic Test Switch, B21H-S22A and RHR to RW Outboard Valve, F049, Isolation Logic Test Switch [EIS Component identifier: HS], B21H-S22C were placed in the "TEST" position. These switches are located in the Upper Relay Room. These LLRT procedures were not released by Operations Supervision at the time of performance.

3/31/16: 0603: LLRT PCO began system alignment for LLRT procedures SE-159-123 (B Channel) and SE-159-125 (D Channel). The RHR to RW Outboard Valve, F049, Isolation Logic Test Switch, B21H-S22D and the RHR to RW Inboard Valve, F040, Isolation Logic Test Switch, B21H-S22B were placed in the "TEST" position. These switches are located in the Lower Relay Room [EIS System Code: NA].

At this time, the Control Room received Division 2 PCIS alarm (AR-112-G03), along with Division 2 HVAC isolation and SBGT and CREOASS initiations. Approximately 1 minute later, the Division 1 PCIS alarm, HVAC isolation and SBGT and CREOASS actuations occurred.

NRC FORM 366A
(11-2015)

U.S. NUCLEAR REGULATORY COMMISSION

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Susquehanna Steam Electric Station, Unit 1	05000387	YEAR	SEQUENTIAL NUMBER	REV NO.
		2016	- 009	- 00

NARRATIVE

3/31/16: 0830: Due to the loss of Zone 3 HVAC, Operations backed- out of LLRT procedure SE-159-122, SE-159-123, SE-159-124, and SE-159-125. The associated test switches, B21H-S22A, B21H-S22C, B21H-S22B and B21H-S22D were restored to the "NORMAL" position.

The valid actuation signal was the result of performing the four (4) LLRT procedures concurrently for four (4) separate drywell pressure instruments, PSH-1N002A/B/C/D [EIS Component Code: PS]. These instruments are divisional with each powered by a different channel. When placed in the "TEST" mode, the S22 (A/B/C/D) contacts open and de- energize (actuate) portions of the PCIS logic. By placing all four Nuclear Steam Supply Shutoff System (NSSSS) channels to "TEST" at the same time, both divisions of the isolation logic were made up and all corresponding valves and dampers received an isolation signal. Based on the plant being in Refueling Mode (Mode 5) with Residual Heat Removal (RHR) Shutdown Cooling (SDC) out of service [EIS System Code: BO], there was no operational consequence to this event. All equipment functioned as expected, including the initiation of Standby Gas Treatment and Control Room Emergency Outside Air Supply System.

Based on investigation, only two of the four test procedures were released by Shift Supervision at the time of the event. LLRT procedure SE-159-123 (B Channel) and LLRT procedure SE-159-125 (D Channel) were released on 3/25/16. The LLRT procedure SE-159-122 (A Channel) and SE-159-124 (C Channel) were not signed and released to be performed. The LLRT Plant Control Operator (PCO) believed all four tests were signed and ready to be performed.

In addition to the utilizing procedures that were not released, each procedure contains a step as part of the "As Found Test Prerequisites" requiring verification that the all test switches, B21H-S22A, B, C, D, are in the "NORMAL" position prior to beginning the test.

This event resulted in an eight (8) hour NRC Emergency Notification System (ENS) notification pursuant to 10 CFR 50.72(b)(3)(iv)(A) for a valid actuation of the primary containment isolation system. The ENS notification (#51838) was on 3/31/2016 at 12:45. This Licensee Event Report (LER) is pursuant to 10 CFR 50.73(a)(2)(iv)(A).

CAUSE OF EVENT

The cause of this event was less than adequate procedure use and adherence with respect to confirmation that Operations Shift Supervision approval was obtained prior to performance of each LLRT test and with respect to confirmation that the S22A/B/C/D switches were in the normal position prior to beginning the LLRT.

NRC FORM 366A
(11-2015)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104

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		2016	- 009	- 00

NARRATIVE

ANALYSIS/SAFETY SIGNIFICANCE

There was no actual safety consequence as a result of this event. The primary containment isolation system operated as designed upon receipt of a valid isolation signal. Additionally, the Zone 3 HVAC isolation and subsequent actuation of both trains of the SBT and CREOASS responded as expected. The response of these systems would ensure that fission product release and control room habitability are not affected in an actual event requiring PCIS isolation.

As discussed, the Unit was in Refueling Mode, with RHR Shutdown Cooling (SDC) out of service at the time of the event. While the RHR SDC Suction Inboard Isolation Valve, HV151F009, stroked closed as a result of the PCIS signal, the system was not in service at the time, and therefore did not impact system operation. If RHR SDC was in service at the time of the event, the inboard isolation valve, HV151F009, breaker would have been open, and the outboard isolation valve, HV151F008, and the test switch, B21H-S22D, would have been protected equipment, which would have prevented the system isolation.

CORRECTIVE ACTIONS

The following corrective actions have been completed or are in progress to address this event:

1. Revise the LLRT procedures, SE-159-122 thru 126 and corresponding Unit 2 LLRT procedure, SE-259-122 thru 126, to add a note in the "As Found Test Prerequisites" section that these procedures cannot be performed concurrently.
2. The individual involved in confirming that test switch B21H-S22A/B/C/D was in the NORMAL position, as required by the procedure, was coached and remediated.
3. An Operations department communication with respect to required authorization prior to commencement of work and review of OI-AD-046, Operations Conduct of Outages, was issued.

PREVIOUS SIMILAR EVENTS

No other similar events were identified.