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JAN 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(388)/2015-003-01
UNIT 1 LICENSE NO. NPF-14
UNIT 2 LICENSE NO. NPF-22
PLA-7430**

**Docket Nos. 50-387
50-388**

Attached is LER-2015-003-01, a supplement to Licensee Event Report (LER) 50-387(388)/2015-003-00, which was submitted to the NRC on June 22, 2015. The original LER reported that on April 21, 2015, Susquehanna Steam Electric Station was unable to maintain differential pressure in the Zone III portion of Secondary Containment. These events were determined to be reportable under 10 CFR 50.73(a)(2)(v)(C), for an event or condition that at the time of discovery could have prevented the fulfillment of a safety function required to control the release of radioactive material.

Because the cause analysis had not been completed at the time the original LER was submitted, this supplement is being submitted in accordance with NUREG-1022 Rev. 3, Section 5.1.5, Supplemental Information and Revised LERs. It contains the final causes and planned corrective actions as determined by the Condition Report evaluation.

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

This letter contains no new regulatory commitments.

A handwritten signature in black ink, appearing to read "Jon Franke".

J. A. Franke

Attachment: LER 50-387(388)/2015-003-01

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

Electronic Copy:

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NRA File GENPL5

DCS GENPL4

Send PDF copy to: L. Oberrender for transmittal to INPO



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
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4. TITLE Secondary Containment Inoperability Due to Failure to Meet Technical Specification Surveillance Requirement 3.6.4.1.1

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
04	21	2015	2015	- 003	01	01	26	2014	Susquehanna Steam Electric Station, Unit 2	05000388
									FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)			
	<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)
10. POWER LEVEL 100	<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)
	<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 checked="" 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 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 Brittany Sprung, Nuclear Regulatory Affairs	TELEPHONE NUMBER (Include Area Code) (570) 542-3407
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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 <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On April 21, 2015, at 2258 hours, the Reactor Building ventilation system was unable to maintain a negative pressure in Zone III of Secondary Containment, resulting in entry into Limiting Condition of Operation (LCO) 3.6.4.1, Condition A, for failure to meet Surveillance Requirement (SR) 3.6.4.1.1 on Units 1 and 2. Because the cause analysis was not complete at the time the original LER was submitted, this supplement is being submitted in accordance with NUREG-1022, Rev. 3, Section 5.1.5, Supplemental Information and Revised LERs, to disclose the final cause determination and corrective actions generated.

Per Technical Specification (TS) 3.6.4.1, Secondary Containment must be maintained at 0.25 inches water column (in. w.c.) vacuum. This event was caused by a unique equipment line up coupled with high winds. The apparent cause was determined to be inadequate risk assessment of the test alignment. Corrective actions included reassessing the risk of this alignment and multi-department reviews of test procedures within the Extent of Condition to ensure risk is properly assessed.

There were no actual consequences to the health and safety of the public as a result of this event. An engineering evaluation determined no Safety System Functional Failure actually occurred 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, 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.

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Susquehanna Steam Electric Station, Unit 1	05000387	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 of 4
		2015	- 003	- 01	

NARRATIVE

CONDITIONS PRIOR TO THE EVENT

Unit 1 – Mode 1, 100 percent Rated Thermal Power
Unit 2 – Mode 5, Refueling

There were no systems, structures, or components that were inoperable at the start of the event and contributed to the event. On April 21, 2015, a procedure was in progress on Unit 2 for planned performance of Surveillance Requirements (SR). The procedure and SRs use a simulated loss of offsite power (LOOP) event, and load shedding from an Engineered Safeguards System (ESS) bus, and auto start of diesel generators from standby conditions. This procedure directs the use of a test alignment for the hand switch for the lead Reactor Building (RB) Secondary Containment Zone III supply fan for performance of the required surveillance testing. The test alignment for the hand switch defeats the low flow trip logic of operating supply fans and the auto start of the standby supply fans upon a loss and restoration of power to an ESS bus.

EVENT DESCRIPTION

On April 21, 2015, at 2258 hours, the ventilation system that maintains Secondary Containment was unable to maintain a negative pressure requiring entry into the Action Statement for Technical Specification (TS) 3.6.4.1, Condition A, for the failure to meet Surveillance Requirement (SR) 3.6.4.1.1 for Susquehanna Steam Electric Station (SSES) Unit 1 and Unit 2. The Reactor Building (RB) Zone III differential pressure fell below the TS requirement of 0.25 inches water column (in. w.c.) while Zone III fans were in the test alignment for the hand switch, [EISS System Code VA]. A wind gust of approximately 30 mph had been previously recorded at the station. The Zone III ventilation system is designed to shut down if the sensed differential pressure between the zone and the outside atmosphere is too high or too low, as can occur during winds. After the ventilation shuts down, the sensed differential pressure lowers and the system is designed to restart when operating properly. The RB ventilation was restored when the handswitch for the lead Zone III supply fan was returned to the START position, enabling the low flow trip logic of operating RB supply fans, and the auto start of the standby RB supply fans. When the fans restarted, differential pressure was restored to meet the TS requirement of 0.25 in. w.c. at 2314 hours. TS 3.6.4.1, Condition A, was later exited on April 22, at 0015 hours.

On April 22, 2015, at 0158 hours, this condition was reported as an 8-hour Event Notification #51001 in accordance with 10 CFR 50.72(b)(3)(v)(C) for any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to control the release of radioactive material. SSES has no redundant Secondary Containment system. In accordance with 10 CFR 50.73(a)(2)(v)(C), this LER is being submitted for an event or condition that at the time of discovery, could have prevented the fulfillment of the safety function of Secondary Containment to control the release of radioactive material.

CAUSE OF THE EVENT

The combination of the equipment line up and high winds caused the Zone III supply fans to trip, resulting in the inability to maintain the vacuum required by TS 3.6.4.1. Since the loss would not have occurred in the absence of high winds, high winds were determined to be the direct cause.

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NARRATIVE

CAUSE OF THE EVENT (contd.)

The apparent cause was determined to be inadequate risk assessment of the test alignment with respect to Secondary Containment operability. This equipment configuration had not affected testing in the past, which allowed the risk to become latent. If risk of the alignment had been properly assessed prior to being incorporated into the test procedure, the event would have been prevented either through voluntary LCO entry or via the use of an alternative equipment alignment.

ANALYSIS/SAFETY SIGNIFICANCE

Potential consequences of this event include:

- Unit 1 shutdown per TS 3.6.4.1 action statements if the Completion Time of Condition A was not met
- An unmonitored release of radioactivity to the environment
- Extended refueling outage time for Unit 2

The actual consequence of this event was a degradation of the Secondary Containment differential pressure, which led to an unplanned entry into the Action Statement for TS 3.6.4.1, Condition A, for Unit 1 and Unit 2. An Engineering evaluation was performed, which concluded that Secondary Containment could have performed its safety function of isolating as assumed in the SSES accident analysis and also of re-establishing 0.25 in. w.c. differential pressure within the assumed accident analysis time of 10 minutes (i.e., drawdown time). Therefore, the safety function of the Secondary Containment boundary and Standby Gas Treatment systems were unaffected and capable of performing their safety function during this event. As such, there were no actual consequences to the health and safety of the public.

Additionally, this event will not be counted as a safety system functional failure (SSFF) for the NRC performance indicator based on the engineering evaluation that was done in accordance with the Nuclear Energy Institute 99-02, Rev. 7, "Regulatory Assessment Performance Indicator Guideline" that concluded there was no loss of Secondary Containment's ability to fulfill its safety function.

CORRECTIVE ACTIONS

Compensatory action was immediately initiated to suspend movement of light loads over irradiated fuel in the Unit 2 Spent Fuel Pool and cavity. Corrective action was taken to restore the RB Zone III ventilation, and exit the TS 3.6.4.1, Condition A, when differential pressure for Secondary Containment was restored to meet the TS requirement in SR 3.6.4.1.1.

Corrective actions included reassessment of the hand switch alignment method from procedures known to use it and departmental reviews of test procedures that fall within the Extent of Condition to ensure no other procedures use inadequately assessed reactor building fan manipulations. All corrective actions to address the event are complete.

Completed Actions:

- Test procedures involved in this event were revised to preclude future occurrences
- A cross-departmental review of procedures was performed to identify any procedures that may utilize alternate positioning of Secondary Containment (Zone I, II and III HVAC) fan exhaust dampers to identify if similar events could occur using the alignment. The action required revision of any identified procedures to prevent challenges to Secondary Containment differential pressure.

**LICENSEE EVENT REPORT (LER)
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NARRATIVE

PREVIOUS SIMILAR EVENTS

This event is similar to the following events involving the use of procedures that had an impact on maintaining the RB Secondary Containment ventilation.

- LER 50-387(388)/2014-007-00, Loss of Secondary Containment Pressure During RPS Transfer, issued June 12, 2014.
- LER 50-387(388)2013-006-01, Loss of Secondary Containment due to Differential Pressure not Meeting Technical Specification 3.6.4.1, issued July 30, 2014