

**Jon A. Franke**  
Site Vice President

**Susquehanna Nuclear, LLC**  
769 Salem Boulevard  
Berwick, PA 18603  
Tel. 570.542.2904 Fax 570.542.1504  
Jon.Franke@TalenEnergy.com



**MAY 16 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 50-387/2016-011-00  
UNIT 1 LICENSE NO. NPF-14  
PLA-7476**

**Docket No. 50-387**

Attached is Licensee Event Report (LER) 50-387/2016-011-00. This LER reports an event involving the inoperability of specific isolation valves for a period longer than allowed by Technical Specifications. This event was determined to be reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition which was prohibited by plant 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 regulatory commitments.



J. A. Franke

Attachment: LER 50-387/2016-011-00

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

<b>NRC FORM 366</b> (11-2015)	<b>U.S. NUCLEAR REGULATORY COMMISSION</b>   <b>LICENSEE EVENT REPORT (LER)</b> (See Page 2 for required number of digits/characters for each block)	<b>APPROVED BY OMB: NO. 3150-0104</b> <b>EXPIRES: 10/31/2018</b>  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, NEOF-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.
----------------------------------	---	---

<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> Valve inoperability for a period longer than allowed by Technical Specifications
---

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	17	2016	2016	- 011	- 00	05	16	16	FACILITY NAME	DOCKET NUMBER

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)(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)				
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 checked="" 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 Brittany Sprung, Nuclear Regulatory Affairs Engineer	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
B	SJ	ISV	A391	N					

14. SUPPLEMENTAL REPORT EXPECTED		15. EXPECTED SUBMISSION DATE		MONTH	DAY	YEAR
<input checked="" type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input type="checkbox"/> NO				07	29	2016

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)
<p>On March 17 and 19, 2016, two safety related check valves would not properly close during surveillance testing. After investigation, it was discovered that interference between the hinge arm and internal seat ring was preventing the valves from closing. The valves were newly installed in 2014; post installation leak rate testing revealed the valves were sticking open, however, after exercising air pressure in the line the valves were able to achieve acceptable leak rate values.</p> <p>No immediate reporting requirements are associated with this event. This Licensee Event Report (LER) is being submitted in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications (TS).</p> <p>The direct cause of the event was determined to be interference between the hinge arm and internal seat ring. The apparent cause of this event has not yet been determined; a supplement to this LER will be issued when the final cause has been determined. Completed corrective actions included rework of the valves. A preliminary extent of condition determined the equivalent valves on Unit 2 are not affected.</p> <p>There were no actual consequences to the health and safety of the public as a result of this event.</p>



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

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	2. DOCKET NUMBER	3. LER NUMBER		
Susquehanna Steam Electric Station, Unit 1	05000387	YEAR	SEQUENTIAL NUMBER	REV NO.
		2016	- 011	- 00

### NARRATIVE

#### CONDITIONS PRIOR TO EVENT

Unit 1 – Mode 5, 0 percent Rated Thermal Power

Unit 2 – Mode 1, 100 percent Rated Thermal Power

Unit 1 was in Mode 5 for a planned 24 month refueling cycle outage.

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

#### EVENT DESCRIPTION

On March 17 and 19, 2016, two (2) safety related check valves would not properly close during surveillance testing. The valves subject of this LER (141F039A, 141F039B; EISS code ISV) provide a boundary between water in the Reactor Water Clean Up (RWCU) and Feedwater (FW) Systems. They are both swing check valves designed to close and isolate the reactor vessel and primary containment from the RWCU system. Additionally, the 'A' valve functions to prevent diversion of RCIC injection flow away from the reactor vessel; the 'B' valve performs the same function for HPCI.

During the 2016 performance of the surveillance to verify Local Leak Rate Test (Appendix J requirements) values were within required limits, the valves were discovered to be open when expected to be closed. Despite this, the As-Found Minimum Path Criteria to meet Appendix J requirements were not exceeded. Correction of this condition was required to meet As-Left test requirements.

These valves were newly installed during the 2014 refueling outage. During initial post installation surveillance testing, the test volume(s) would not pressurize, indicating the valves were not seated. Rapid pressurization and depressurization was used to simulate dynamic flow to close the valves by normal means. The valves were tested following the exercising and met As-Left criteria.

Investigation of the valve internals by maintenance personnel following testing in 2016 revealed interference between the hinge arm and internal seat ring was causing the valves to stick open.

This Licensee Event Report (LER) is being submitted in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications based on evidence that the valves were not in the fully closed position prior to discovery of the condition. Specifically, the need for the valves to be closed is a requirement delineated in TS 3.6.1.3, Primary Containment Isolation Valves (PCIVs).

**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.

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Susquehanna Steam Electric Station, Unit 1	05000387	2016	- 011	- 00

**NARRATIVE****CAUSE OF EVENT**

Investigation of the valve internals by maintenance personnel revealed the valves were sticking due to interference between the hinge arm and internal seat ring. The condition was resolved by the removal of the excess hinge arm material causing the interference. A condition report was generated to determine the cause(s) of the event; preliminary results indicate the interference was created during the manufacturing process. The same valves on Unit 2 were examined for this cause (preliminary extent of condition) and were determined to not be affected by this manufacturing defect.

**ANALYSIS/SAFETY SIGNIFICANCE**

There were no actual safety consequences that occurred as a result of this event.

A review of surveillance test results obtained from the redundant valves each in series with 141F039A and 141F039B revealed no issues. The quantified leakage from these redundant valves (141818A and 141818B; EIS code ISV) obtained during testing in both 2014 and 2016 was well below administrative limits. Therefore, the safety function of these valves was maintained during the period in question.

**CORRECTIVE ACTIONS**

Completed corrective actions include reworking the valves and performing post maintenance Leak Rate Testing (which confirms valve closure) to restore operability. Results from the causal analysis will be reviewed and additional corrective actions will be generated as required.

**PREVIOUS SIMILAR EVENTS**

None