

**Brad Berryman**  
Site Vice President

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



**FEB 0 2 2018**

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

10 CFR 50.73


**SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSEE EVENT REPORT 50-388/2017-010-00  
UNIT 2 LICENSE NO. NPF-22  
PLA-7681**

**Docket No. 50-388**

Attached is Licensee Event Report (LER) 50-388/2017-010-00. This LER is reporting an event involving drifting of Reactor Pressure Steam Dome – Low switches. This event was determined to be reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by 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.



B. Berryman

Attachment: LER 50-388/2017-010-00

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



**LICENSEE EVENT REPORT (LER)**

(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  
<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, 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.

1. FACILITY NAME Susquehanna Steam Electric Station Unit 2	2. DOCKET NUMBER 05000388	3. PAGE 1 OF 3
---	------------------------------	-------------------

4. TITLE Condition Prohibited by Technical Specifications Due to Drift of Reactor Pressure Switches

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
12	5	2017	2017	- 010	- 00	02	02	2018	FACILITY NAME	DOCKET NUMBER
										05000
										05000

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)(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)		
10. POWER LEVEL  100	<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)		
	<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 C. E. Manges, Jr., Senior Engineer - Nuclear Regulatory Affairs	TELEPHONE NUMBER (Include Area Code) (570) 542-3089
---	--

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 checked="" type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
		3	30	2018

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On December 5, 2017, the Unit 2 "C" and Unit 2 "D" Reactor Steam Dome Pressure – Low permissive switches were found outside of the Technical Specification (TS) allowable value. Both drifted outside of the upper allowable value which is intended to ensure that the reactor dome pressure has fallen to a value below the Core Spray and Residual Heat Removal (RHR)/Low Pressure Coolant Injection (LPCI) maximum design pressures to preclude over-pressurization of the low pressure systems prior to low pressure injection initiation. Based on the information currently available, Susquehanna believes that the condition existed for longer than allowed by TS 3.3.5.1 and TS 3.5.1. As such, this is a condition prohibited by Technical Specifications and is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B).

The cause is still under investigation. Corrective actions will be determined following completion of the cause analysis. Causal and corrective action information will be provided in a supplement to this Licensee Event Report (LER).

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



**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 2	05000-0388	YEAR	SEQUENTIAL NUMBER	REV NO.
		2017	- 010	- 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

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

**EVENT DESCRIPTION**

Susquehanna Steam Electric Station (SSES) had been utilizing Barton 288A switches in the Reactor Steam Dome Pressure – Low channels that provide the injection permissive for the Core Spray system [EISS System Identifier: BM] (Technical Specification (TS) Function 1d) and the Low Pressure Coolant Injection system (LPCI) [EISS System Identifier: BO] (TS Function 2d). In order to address drift issues with the Barton pressure switches, all eight were replaced with GE recommended Cameron 288A pressure switches between September 6, 2017 and November 15, 2017. The switches were bench tested prior to installation and calibration checked at the time of installation. Subsequent calibration checks were performed at intervals less than the quarterly Technical Specification (TS) required calibrations. During these subsequent calibration checks, the Unit 2 “C” (PIS-B21-2N021C) and Unit 2 “D” (PIS-B21-2N021D) pressure switches, were found outside of the Technical Specification (TS) allowable value. A timeline of events is as follows:

On September 20, 2017, the obsolete Barton 288A pressure switch for PIS-B21-2N021C was replaced with a GE recommended Cameron 288A pressure switch.

On October 9 2017 the obsolete Barton 288A pressure switch for PIS-B21-2N021D was replaced with a GE recommended Cameron 288A pressure switch.

On October 20, 2017, PIS-B21-2N021C and PIS-B21-2N021D were calibration checked. PIS-B21-2N021C had drifted to 454 pounds per square inch (psi), which was within the TS allowable value (upper allowable value of 454.4 psi). PIS-B21-2N021C was adjusted to a value of 441.4 psi. PIS-B21-2N021D had drifted to 447.8 psi, which was within the TS allowable value (upper allowable value of 455 psi). PIS-B21-2N021D was adjusted to a value of 444.1 psi.

On December 5, 2017, PIS-B21-2N021C and PIS-B21-2N021D were found outside of the TS allowable value during the calibration check. Both drifted outside of the upper allowable value which is intended to ensure that the reactor dome pressure has fallen to a value below the Core Spray and RHR/LPCI maximum design pressures to preclude over-pressurization of the low pressure systems prior to low pressure injection initiation. PIS-B21-2N021C exceeded the TS allowable value by 1.4 psi (455.8 psi versus an upper allowable value of 454.4 psi). PIS-B21-2N021D exceeded the TS allowable value by 2.8 psi (457.8 psi versus an upper allowable value of 455 psi). Both switches were adjusted to within the TS allowable value.

Although drift in the same manner was seen in the other six switches, none of the others were observed to have drifted outside of the TS allowable value during any of the subsequent calibration checks.

Based on the information currently available, Susquehanna believes that the condition existed for longer than allowed by TS 3.3.5.1 and TS 3.5.1. As such, this is a condition prohibited by Technical Specifications and is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B).



**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 2	05000-0388	YEAR	SEQUENTIAL NUMBER	REV NO.
		2017	- 010	- 00

**CAUSE OF EVENT**

The cause is still under investigation. Further information associated with the cause will be provided in a supplement to this LER.

**ANALYSIS/SAFETY SIGNIFICANCE**

Information concerning safety significance will be provided in a supplement to this LER.

**CORRECTIVE ACTIONS**

Corrective actions will be determined following completion of the cause analysis and will be provided in a supplement to this LER.

**COMPONENT FAILURE INFORMATION**

The switches that drifted are Cameron Model 288A pressure switches.

**PREVIOUS SIMILAR EVENTS**

LER 50-388(387)/2015-001-01, "Condition Prohibited by Technical Specifications Due to Drift of Reactor Pressure Steam Dome-Low Switches", dated February 10, 2016.