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September 01, 2021

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

10 CFR 50.73

**SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 50-388/2021-001-00
UNIT 2 LICENSE NO. NPF-22
PLA-7963**

Docket No. 50-388

Attached is Licensee Event Report (LER) 50-388/2021-001-00. This LER reports an event involving drifting of a Reactor Pressure Steam Dome – Low permissive switch (Microswitch 2). This event was determined to be reportable as a condition prohibited by Technical Specifications in accordance with 10 CFR 50.73(a)(2)(i)(B), a condition that could have prevented fulfillment of a safety function in accordance with 10 CFR 50.73(a)(2)(v)(D), and a common cause inoperability of independent trains or channels in accordance with 10 CFR 50.73(a)(2)(vii).

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

This letter contains no new or revised regulatory commitments.

A handwritten signature in black ink, appearing to be "K. Cimorelli", written over a horizontal line.

K. Cimorelli

Attachment: LER 50-388/2021-001-00

Copy: NRC Region I
Ms. A. Klett, NRC Project Manager
Mr. C. Highley, NRC Senior Resident Inspector
Mr. M. Shields, PA DEP/BRP



LICENSEE EVENT REPORT (LER)

(See Page 3 for required number of digits/characters for each block)
(See NUREG-1022, R.3 for instruction and guidance for completing this form <https://www.nrc.gov/reading-m/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 FOIA, Library, and Information Collections Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk all: oir_submission@omb.eop.gov. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

1. Facility Name Susquehanna Steam Electric Station Unit 2	2. Docket Number 05000388	3. Page 1 of 3
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4. Title
Condition Prohibited by Technical Specifications Due to Drift of Reactor Pressure Switch

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
07	06	2021	2021	- 001 -	00	09	01	2021	Facility Name	05000
										Docket Number
										05000

9. Operating Mode 1	10. Power Level 100
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11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)

<input type="checkbox"/> 10 CFR Part 20	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	10 CFR Part 73
<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.69(g)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(4)
<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.71(a)(5)
<input type="checkbox"/> 20.2203(a)(2)(i)	10 CFR Part 21	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(1)(i)
<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 21.2(c)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input checked="" type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(i)
<input type="checkbox"/> 20.2203(a)(2)(iii)	10 CFR Part 50	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	<input type="checkbox"/> 73.77(a)(2)(ii)
<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<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)(v)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)	

Other (Specify here, in Abstract, or in NRC 366A).

12. Licensee Contact for this LER

Licensee Contact C. E. Manges, Jr, Principle Engineer – Nuclear Regulatory Affairs	Phone Number (Include Area Code) 570-542-3089
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13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable to IRIS	Cause	System	Component	Manufacturer	Reportable to IRIS

14. Supplemental Report Expected				15. Expected Submission Date		
<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date)			Month	Day	Year
				10	29	2021

16. Abstract (Limit to 1560 spaces, i.e., approximately 15 single-spaced typewritten lines)

On July 6, 2021, the Unit 2 "D" Reactor Steam Dome Pressure – Low permissive pressure switch, Microswitch 2, was found outside of the Technical Specification (TS) 3.3.5.1 allowable value. The switch drifted outside of the lower allowable value which is intended to ensure that the Emergency Core Cooling System (ECCS) injection prevents the fuel peak cladding temperature from exceeding the limits of 10 CFR 50.46.

Based on the information available, the condition likely existed for longer than allowed by TS 3.3.5.1, TS 3.5.1, and TS 3.0.3. As such, this is a condition prohibited by TS and is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B). In addition, since the "C" channel (PIS-B21-2N021C) was surveillance tested just prior to identification of the drift of the "D" channel (PS-B21-2N021D), redundant channels were inoperable at the same time impacting both Core Spray and LPCI functions; therefore, this is also considered a condition that could have prevented fulfillment of a safety function (10 CFR 50.73(a)(2)(v)(D)) and a common cause inoperability of independent trains or channels (10 CFR 50.73(a)(2)(vii)).

The cause of the event is under investigation and will be provided under a supplement to this LER along with associated corrective actions.

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
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1. FACILITY NAME Susquehanna Steam Electric Station Unit 2	2. DOCKET NUMBER 05000-388	3. LER NUMBER		
		YEAR 2021	SEQUENTIAL NUMBER - 001 -	REV NO. 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

Prior to September 2017, Susquehanna Steam Electric Station (SSES) had been utilizing International Telephone and Telegraph (ITT)-Barton 288A pressure switches in the Reactor Steam Dome Pressure – Low channels [EIS System/Component Identifier: JE/PS] that provide the injection permissive for the Core Spray system [EIS System Identifier: BM] (Technical Specification (TS) 3.3.5.1, Function 1d) and the Residual Heat Removal (RHR)/Low Pressure Coolant Injection system (LPCI) [EIS System Identifier: BO] (TS 3.3.5.1, Function 2d). Due to instrument drift concerns, all eight obsolete ITT-Barton 288A pressure switches were replaced with General Electric (GE) recommended Cameron-Barton 288A pressure switches between September 6, 2017 and November 15, 2017. Following replacement, instrument drift continued to be an issue, and additional corrective action was determined necessary to resolve the drift concerns. The additional corrective action included procuring and installing Cameron-Barton 288A instruments that had been modified to remove an over-range condition and the movement assembly/associated linkages that were determined to be affecting instrument drift. The first of these modified instruments was installed and calibrated on July 8, 2020 in the Unit 2 “D” channel (pressure switch for PS-B21-2N021D).

On August 10, 2020, the new, modified PS-B21-2N021D switch, Microswitch 2, was tested for its first surveillance interval and found to be outside of TS acceptance criteria. The switch drifted 1.2 psig 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. This event was reported in LER 50-388/2020-002-01, dated July 1, 2021.

On July 6, 2021, the Unit 2 “D” Reactor Steam Dome Pressure – Low permissive pressure switch, Microswitch 2, was found outside of the TS 3.3.5.1 allowable value. The switch drifted outside of the lower allowable value which is intended to ensure that the Emergency Core Cooling System (ECCS) injection prevents the fuel peak cladding temperature from exceeding the limits of 10 CFR 50.46.

Based on the information available, the condition likely existed for longer than allowed by TS 3.3.5.1, “Emergency Core Cooling System (ECCS) Instrumentation,” TS 3.5.1, “ECCS-Operating,” and TS 3.0.3. As such, this is a condition prohibited by TS and is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B). In addition, since the “C” channel (PIS-B21-2N021C) was surveillance tested just prior to identification of the drift of the “D” channel (PS-B21-2N021D), redundant channels were inoperable at the same time impacting both Core Spray and LPCI functions; therefore, this is also considered a condition that could have prevented fulfillment of a safety function (10 CFR 50.73(a)(2)(v)(D)) and a common cause inoperability of independent trains or channels (10 CFR 50.73(a)(2)(vii)).



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NARRATIVE

CAUSE OF EVENT

The cause of the event is under review and will be provided in a supplement to this LER.

ANALYSIS/SAFETY SIGNIFICANCE

Although outside of the TS 3.3.5.1 allowable value, the as-found setpoint remained above the analytical limit assumed in the accident analysis. Therefore, Core Spray and RHR would have been able to perform their safety functions and the condition described herein did not result in a safety system functional failure. Accordingly, this event will not be counted as a safety system functional failure in the Reactor Oversight Process Performance Indicators. There were no actual consequences to the health and safety of the public as a result of this event.

CORRECTIVE ACTIONS

The cause of the event is under review and will be provided in a supplement to this LER.

COMPONENT FAILURE INFORMATION

Component failure information will be provided in a supplement to this LER.

PREVIOUS OCCURRENCES

As indicated by the previous occurrences listed below, the condition of drifting pressure indicating switches is a known issue at SSES. Previously reported Corrective Actions are in progress; additional corrective actions will be dictated by the Susquehanna Corrective Action Program.

LER 50-388/2020-002-01, "Condition Prohibited by Technical Specifications Due to Drift of Reactor Pressure Switch Caused by Lack of Requirements for Acclimation of the Instrument to the Operating Environment", dated July 1, 2021.

LER 50-387(388)/2018-005-02, "Condition Prohibited by Technical Specifications Due to Drift of Reactor Pressure Switches", dated July 1, 2021.

LER 50-388/2017-010-02, "Condition Prohibited by Technical Specifications Due to Drift of Reactor Pressure Switches", dated July 1, 2021.

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.