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TALEN ENERGY

DEC 1 4 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 50-388(387)/2016-024-00
UNIT 1 LICENSE NO. NPF-14
UNIT 2 LICENSE NO. NPF-22 **Docket No. 50-387**
PLA-7561 **50-388**

Attached is Licensee Event Report (LER) 50-388(387)/2016-024-00. This LER reports a condition involving exceeding the Technical Specification Allowable Value for Secondary Containment Isolation Instrumentation. This LER is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(i)(B) and 10 CFR 50.73(a)(2)(v)(C) as a condition prohibited by Technical Specifications and as a condition that could have prevented fulfillment of a safety function.

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.

R. J. Franssen

Attachment: LER 50-388(387)/2016-024-00

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

NRC FORM 366 (06-2016) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2018

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/)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Susquehanna Steam Electric Station Unit 1	05000387	1 OF 3

4. TITLE Refuel Floor Radiation Exhaust Monitor Isolation Setpoint Above Technical Specification Limit 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
									Susquehanna Steam Electric Station Unit 2	**05000**388
10	19	2016	2016	024	00	12	14	2016	FACILITY NAME	DOCKET NUMBER **05000**

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*			
1	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
10. POWER LEVEL	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
100	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☒ 50.73(a)(2)(v)(C)	☐ 73.77(a)(1)
	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(i)
	☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(ii)
		☐ 50.73(a)(2)(i)(C)	☐ OTHER Specify in Abstract below or in NRC Form 366A	

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT	TELEPHONE NUMBER *(Include Area Code)*
M. L. Krick, Senior Engineer - Nuclear Regulatory Affairs	(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
A	IL	RM	GE	Y	N/A	N/A	N/A	N/A	N/A

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO				

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

On October 19, 2016, during performance of surveillance procedure SI-079-335, 24 Month Calibration of Refuel Floor High Exhaust Duct High Radiation Monitor Channel R-D12-1K615B, the as-found HiHi trip setpoint of the Unit 1 Refuel Floor High Exhaust Duct B Radiation Monitor was found at 36 mR/hr. This exceeds the Technical Specification 3.3.6.2, Secondary Containment Isolation Instrumentation and Technical Specification 3.3.7.1, Control Room Emergency Outside Air Supply (CREOAS) System Instrumentation, Allowable Value of ≤25 mR/hr. Based upon investigation, this condition was determined to have existed since prior to the previous 24 month calibration of the instrument on 11/15/14.

The cause of this condition was determined to be less than adequate use of Human Performance Tools, including Self-Checking, Verification Practices and Procedure Use and Adherence by the maintenance crew performing the surveillance on 11/15/14. As a result of not properly using these tools, the setpoint graph was mislabeled resulting in incorrect setpoint calculation.

This condition requires reporting in accordance with 10 CFR 50.73(a)(2)(i)(B) and 10 CFR 50.73(a)(2)(v)(C) as a condition prohibited by Technical Specifications and as a condition that could have prevented fulfillment of a safety function.

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

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Susquehanna Steam Electric Station Unit 1	05000-387	2016	- 024	- 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

EVENT DESCRIPTION

On October 19, 2016, during performance of surveillance procedure SI-079-335, 24 Month Calibration of Refuel Floor High Exhaust Duct High Radiation Monitor Channel R-D12-1K615B, the as-found Hi-Hi trip setpoint of the Unit 1 Refuel Floor High Exhaust Duct B Radiation Monitor [EIIS Component Identifier: RM] was found at 36 mR/hr. This exceeds the Technical Specification (TS) 3.3.6.2, Secondary Containment [EIIS System Identifier: NG] Isolation Instrumentation and TS 3.3.7.1, Control Room Emergency Outside Air Supply (CREOAS) System [EIIS System Identifier: NA] Instrumentation, Allowable Value of ≤25 mR/hr.

Upon investigation, this condition was determined to have existed since prior to the previous 24 month calibration performed on 11/15/2014. During performance of the previous Refuel Floor High Exhaust Duct B Radiation Monitor calibration under SI-079-335, the I&C Technician performing the surveillance mislabeled the X and Y axis on the setpoint graph combined with inconsistent use of the procedure instruction. This resulted in all the setpoint calculations performed in the remainder of the procedure to be incorrect. This includes the "as-found" and "as-left" trip setpoints for the monitor. The following timeline summarizes the investigation findings:

- 8/4/2012: SI-079-335 was performed. Both the "as- found" and "as-left" trip setpoints were calculated and set correctly- within TS allowable value.
- 11/15/2014: SI-079-335 was performed incorrectly due to mislabeling of the X and Y axis on the setpoint plot and inconsistent use of the procedure instruction. Supervisor performed a review and did not identify the error on the plot.
    - "As- Found" trip setpoint recorded as 18 mR/hr
    - Actual "as-found" trip setpoint based upon 2016 re-review was 45 mR/hr
    - "As-Left" trip setpoint recorded as 24 mR/hr
    - Actual "as-left" trip setpoint based upon 2016 re-review was 35 mR/hr
- 10/19/16: SI-079-335 was performed. The "as-found" setpoint was found at 36 mR/hr, outside the TS Allowable Value. This aligns with the actual "as-left" trip setpoint determined from re-performing the 2014 calibration calculations. The calibration was completed and the trip setpoint corrected to within the TS Allowable Value.

Based on this investigation, the Refuel Floor High Exhaust Duct B Radiation Monitor Hi-Hi trip setpoint was above the TS allowable value from some point after the 2012 calibration until the 2016 calibration.

This condition requires reporting in accordance with 10 CFR 50.73(a)(2)(i)(B) and 10 CFR 50.73(a)(2)(v)(C) as a condition prohibited by Technical Specifications and as a condition that could have prevented fulfillment of a safety function.

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Susquehanna Steam Electric Station Unit 1	05000-387	2016	- 024	- 00

CAUSE OF EVENT

The cause of the event was determined to be less than adequate use of Human Performance Tools including Self-Check (STAR), Verification Practices and Procedure Use and Adherence.

ANALYSIS/SAFETY SIGNIFICANCE

The Technical Specification (TS) 3.3.6.2, Secondary Containment Isolation Instrumentation and TS 3.3.7.1, Control Room Emergency Outside Air Supply (CREOAS) System Instrumentation, Allowable Value for the Refuel Floor High Exhaust Duct Radiation – High instrument function is ≤25 mR/hr. For each of these Technical Specifications, the Refuel Floor High Exhaust Duct Radiation Monitor is required to be operable during the following:

- During operations with a potential for draining the reactor vessel
- During Core alterations, and during movement of irradiated fuel assemblies in secondary containment

At the time of discovery, Susquehanna Steam Electric Station Unit 1 and Unit 2 were not in the applicable condition for these Technical Specifications and no TS LCO action was entered. As stated above, the condition of the radiation monitor trip setpoint existed since prior to the 2014 calibration. The function of this instrumentation is to isolate secondary containment Zone III (includes the refuel floor) in the event of a fuel handling accident. This trip system is a dual train system. Additionally, the refuel floor is common to both Unit 1 and 2, so there are 2 trains at both units. Based on the fact that the instrument is not a single train system and that the other instruments could have isolated secondary containment, this condition would not prevent secondary containment isolation in the event of a fuel handling accident. Additionally, the as found setpoint of the subject instrument was still below the calculated design basis exposure dose rate for a fuel handling accident, which means the instrument would have still initiated secondary containment isolation as credited in the analysis. Therefore, the described condition does not represent a safety system functional failure.

This event will not be counted as a safety system functional failure (SSFF) for the NRC performance indicator based on the Engineering analysis supporting the system's ability to fulfill the safety function.

CORRECTIVE ACTIONS

Key corrective actions include the following:

1. Correctly set the Refuel floor High Exhaust Duct B Radiation Monitor Hi-HI trip setpoint (Complete).
2. An I&C Maintenance department communication with respect to lessons learned is to be distributed.
3. Perform an extent of condition review of similar procedures to validate no errors exist with respect to the calculated "as found" and "as-left" setpoints.
4. The individual involved in the surveillance procedure error, as required by procedure, was coached and remediated.

PREVIOUS SIMILAR EVENTS

None