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TALEN ENERGY

August 10, 2022

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

10 CFR 50.73

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 50-387/2022-001-01
UNIT 1 LICENSE NO. NPF-14
PLA-8020

Docket No. 50-387

Attached is Licensee Event Report (LER) supplement 50-387/2022-001-01. The LER supplement reports an event involving inoperability of a Main Steam Line Isolation Valve that 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 or revised regulatory commitments.

K. Cimorelli

Attachment: LER 50-387/2022-001-01

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

NRC FORM 366 (08-2020) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2023

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-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

Main Steam Isolation Valve Leakage due to Seating Surfaces Wear and Material Deposits

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
										05000
04	02	2022	2022	- 001 -	01	08	10	2022	Facility Name	Docket Number
										05000

9. Operating Mode	10. Power Level
5	0

11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: *(Check all that apply)*

10 CFR Part 20	☐ 20.2203(a)(2)(vi)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(A)	**10 CFR Part 73**
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.69(g)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(4)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(i)	**10 CFR Part 21**	☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(1)(i)
☐ 20.2203(a)(2)(ii)	☐ 21.2(c)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(i)
☐ 20.2203(a)(2)(iii)	**10 CFR Part 50**	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)	☐ 73.77(a)(2)(ii)
☐ 20.2203(a)(2)(iv)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)	
☐ 20.2203(a)(2)(v)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)	

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

12. Licensee Contact for this LER

Licensee Contact	Phone Number (Include Area Code)
Peggy Kramer, Regulatory Affairs Engineer	(570) 542-3131

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
X	SB	ISV	A585	Y					

14. Supplemental Report Expected		15. Expected Submission Date	Month	Day	Year
☒ No	☐ Yes (If yes, complete 15. Expected Submission Date)				

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

On April 02, 2022, during Local Leak Rate Testing (LLRT) conducted during the Unit 1 refueling outage, as-found leakage through the inboard Main Steam Isolation Valve (MSIV) (HV141F022B) was 227.0 standard cubic feet per hour (scfh) which exceeded the Technical Specification Surveillance Requirement (TS SR) 3.6.1.3.12 limit of 100 scfh for individual valve leakage.

Based on cause, there is evidence that the condition existed during the last operating cycle for longer than allowed by TS 3.6.1.3. The condition is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications.

HV141F022B LLRT failure was caused by normal wear consisting of material deposit on the seating surfaces and low spots on the main poppet seat. Repairs to the valve resulted in an acceptable as-left LLRT value. Additionally, further review identified that procedure changes should be made to better define criteria for leadership challenge when step changes in performance are noted; corrective actions are established to revise Leakage Rate Test Program procedure.

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

NARRATIVE

CONDITIONS PRIOR TO EVENT

Unit 1 – Mode 5, approximately 0 percent Rated Thermal Power (RTP)
Unit 2 – Mode 1, approximately 100 percent RTP

EVENT DESCRIPTION

On April 02, 2022, during Local Leak Rate Testing (LLRT) conducted during the Unit 1 refueling outage, as-found leakage through the inboard Main Steam Isolation Valve (MSIV) (HV141F022B) [EIIS System / Component Code: SB/ISV] was 227.0 standard cubic feet per hour (scfh) which exceeded the Technical Specification Surveillance Requirement (TS SR) 3.6.1.3.12 limit of 100 scfh for individual valve leakage.

As-found inspection of HV141F022B identified normal wear, consisting of stellite scaling (build-up) on the MSIV valve seat and poppet and low spots on the main poppet seat, as the primary cause of the as-found leakage. HV141F022B was repaired resulting in an acceptable as-left individual valve LLRT value.

Based on cause, there is evidence that the condition existed during the last operating cycle for longer than allowed by TS 3.6.1.3. The condition is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications.

CAUSE OF EVENT

The direct cause of HV141F022B LLRT failure was material deposits on the seating surfaces and low spots on the main poppet seat. Additionally, further review identified that procedure changes should be made to better define criteria for leadership challenge when step changes in performance are noted.

ANALYSIS/SAFETY SIGNIFICANCE

The redundant MSIV (HV141F028B) in the “B” steam line had an as-found individual leakage value of 32.8 scfh which is below the TS SR 3.6.1.3.12 limit of 100 scfh. The redundant valve, bounded by engineering evaluation, provides assurance that the dose consequences remain within the regulatory limit of 5 rem Total Effective Dose Equivalent (TEDE) for the control room and 25 rem TEDE for the low population zone and exclusion area boundary. As such, there was no loss of safety function for the redundant valve or the main steam penetration. 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

Corrective actions include repairing HV141F022B, resulting in a leak rate within TS SR 3.6.1.3.12 allowable value, and revision of the Leakage Rate Test Program procedure. The procedure revision will provide additional information on MSIV leakage trend indicators and additional guidance for preventative maintenance decisions based on MSIV performance.

COMPONENT FAILURE INFORMATION

Component Identification – HV141F022B

Component Name – Unit 1 Main Steam Line ‘B’ Inboard Isolation Valve

Valve Manufacturer – Atwood & Morrill Co.

Valve Type – Wye Globe

Valve Size – 26”

Actuator Manufacturer – S&P

Actuator Type – Tandem Cylinder

PREVIOUS OCCURRENCES

LER 50-388/2019-001-01, Main Steam Isolation Valve Leakage, dated July 10, 2019

LER 50-387/2018-003-01, Main Steam Isolation Valve Leakage Due to Pilot Poppet and Pilot Poppet Seat Wear/Degradation, dated September 5, 2018