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TALEN ENERGY

JUL 10 2019

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

10 CFR 50.73

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 50-388/2019-001-01
UNIT 2 LICENSE NO. NPF-22
PLA-7799 **Docket No. 50-388**

Attached is a supplement to Licensee Event Report (LER) 50-388/2019-001-00. The LER reported 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 regulatory commitments.

Should you have any questions regarding this submittal, please contact Ms. Melisa Krick, Manager – Nuclear Regulatory Affairs, at (570) 542-1818.

K. Cimorelli

Attachment: LER 50-388/2019-001-01

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
Ms. J. C. Tobin, NRC Project Manager

NRC FORM 366 (04-2018) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 03/31/2020

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, 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.

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 2	05000388	1 OF 3

4. Title

Main Steam Isolation Valve Leakage

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
									N/A	05000
03	28	2019	2019	001	01	07	10	2019	Facility Name	Docket Number
									N/A	05000

9. Operating Mode	11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: *(Check all that apply)*			
5	☐ 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)
000	☐ 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)(ii)
	☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(iii)
		☐ 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)
C. E. Manges, Jr., Senior Engineer – Nuclear Regulatory Affairs	570-542-3089

13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable To ICES	Cause	System	Component	Manufacturer	Reportable To ICES
B	SB	ISV	A585	Y					

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 14 single-spaced typewritten lines)

During the Susquehanna Unit 2 refueling outage, Local Leak Rate Testing (LLRT) conducted on March 27, 2019 determined combined as-found leakage through the inboard Main Steam Isolation Valve (MSIV) (HV241F022D) and the outboard MSIV (HV241F028D) in the "D" Main Steam Line was 55,425 standard cubic centimeters per minute (sccm). Subsequent testing, on March 28, 2019 at approximately 20:30, measured the leakage through HV241F028D as 47,791 sccm, which exceeded the Technical Specification (TS) Surveillance Requirement (SR) 3.6.1.3.12 limit of 100 standard cubic feet per hour (scfh) (47,194 sccm) for individual valve leakage.

Based on cause and history, the condition likely 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.

The direct cause of the LLRT failure was valve seating surface wear/degradation over the 34 years in service. Repairs made to the valve resulted in an acceptable as-left LLRT.

There were no actual safety consequences associated with the condition.

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Susquehanna Steam Electric Station, Unit 2	05000-388	2019	001	01

NARRATIVE

CONDITIONS PRIOR TO EVENT

Unit 1 – Mode 1, approximately 100 percent Rated Thermal Power

Unit 2 – Mode 5, 0 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

During the Susquehanna Unit 2 refueling outage (19RIO), an LLRT conducted on March 27, 2019 determined combined as-found leakage through the inboard MSIV (HV241F022D) [EIIS System / Component Code: SB/ISV] and the outboard MSIV (HV241F028D) [EIIS System / Component Code: SB/ISV] in the "D" Main Steam Line was 55,425 sccm. Subsequent testing, on March 28, 2019 at approximately 20:30, measured the leakage through HV241F028D as 47,791 sccm, which exceeded the TS SR 3.6.1.3.12 limit of 100 scfh (47,194 sccm) for individual valve leakage.

As-found internal inspections of HV241F028D were performed by the original equipment manufacturer, WEIR Valves and Controls (WEIR) and Continental Field Services (CFS). The inspections identified degradation of the in-body stellite seating surface near the two o'clock guide rib and inconsistency in the pilot poppet seating profile. Based on discussions with WEIR and CFS personnel, it is most likely that the degraded condition of the seat was due to a material or fabrication process deficiency that became apparent over the 34 years that the valve was in service.

A seating surface repair was performed during 19RIO. An as-left LLRT was performed, and measured a total penetration leakage value of 28,201 sccm, which is below the TS SR 3.6.1.3.12 limit of 47,194 sccm.

Based on cause and history, the condition likely existed during the last operating cycle for longer than allowed by TS SR 3.6.1.3.12. 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 the MSIV HV241F028D LLRT failure was valve seating surface wear/degradation over the 34 years in service. Contributing to the HV241F028D LLRT failure was the latent seat material and/or fabrication deficiency that existed from original production.

ANALYSIS/SAFETY SIGNIFICANCE

The redundant MSIV (HV241F022D) in the "D" Main Steam Line had an as found individual leakage value of 7634 sccm (approximately 16.2 scfh) which is below the TS SR 3.6.1.3.12 limit of 100 scfh

(47,194 sccm). As a result, there was no loss of safety function for the redundant valve. Additionally, engineering evaluation of the condition demonstrates 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 (LPZ) and exclusion area boundary (EAB). As such, for the identified condition, there was no loss of safety function for the main steam penetration nor any actual or potential consequences to the health and safety of the public.

CORRECTIVE ACTIONS

Corrective actions included repairs to the valve resulting in an acceptable as-left LLRT.

COMPONENT FAILURE INFORMATION

Component Identification – HV241F028D

Component Name – Unit 2 Main Steam Line ‘D’ Outboard Isolation Valve

Valve Manufacturer – Atwood & Morrill (Acquired By Weir Valve)

Valve Type – Wye Globe

Valve Size – 26 inch

Actuator Manufacturer – Hanna

Actuator Type – Tandem Cylinder

PREVIOUS OCCURRENCES

The following are the most recent Susquehanna LERs involving MSIV leakage:

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

LER 50-387/2012-006-01, "D" Outboard Main Steam Isolation Valve Leakage – 2012, dated August 8, 2013

LER 50-387/2010-004-00, "D" Outboard Main Steam Isolation Valve Leakage – 2010, dated August 8, 2013