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MAY 23 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 50-388/2019-001-00
UNIT 2 LICENSE NO. NPF-22
PLA-7794**

Docket No. 50-388

Attached is Licensee Event Report (LER) 50-388/2019-001-00. This LER is reporting an event involving inoperability of a Main Steam Line Isolation Valve (MSIV) 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.

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

K. Cimorelli

Attachment: LER 50-388/2019-001-00

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
Ms. J. C. Tobin, NRC Project Manager



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, 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
Susquehanna Steam Electric Station Unit 2

2. Docket Number
05000388

3. Page
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 |
| 03 | 28 | 2019 | 2019 | 001 | 00 | 05 | 23 | 2019 | N/A | 05000 |
| | | | | | | | | | 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 | <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)(vii)(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) |
| | <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) |
| 10. Power Level 000 | <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)(ii) |
| | <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)(iii) |
| | | <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 | Manufacturer | Reportable To ICES | Cause | System | Component | Manufacturer | Reportable To ICES |
|-------|--------|-----------|--------------|--------------------|-------|--------|-----------|--------------|--------------------|
| | | | | | | | | | |

14. Supplemental Report Expected

☒ Yes (If yes, complete 15. Expected Submission Date) ☐ No

15. Expected Submission Date

| Month | Day | Year |
|-------|-----|------|
| 06 | 14 | 2019 |

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 preliminary cause and history, there is firm 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 information will be provided in a supplement to this LER. Repairs made to the valve resulted in an acceptable as-left LLRT.

There were no actual safety consequences associated with the condition.

**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/>)

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| 1. FACILITY NAME | | 2. DOCKET NUMBER | 3. LER NUMBER | | |
|--|--|------------------|---------------|----------------------|------------|
| Susquehanna Steam Electric Station, Unit 2 | | 05000-388 | YEAR | SEQUENTIAL NUMBER | REV NO. |
| | | | 2019 | 001 | 00 |

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, an LLRT conducted on March 27, 2019 determined combined as-found leakage through the inboard MSIV (HV241F022D) [EIS System / Component Code: SB/ISV] and the outboard MSIV (HV241F028D) [EIS 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.

The valve was repaired and an as-left LLRT measured a total penetration leakage value of 28,201 sccm.

Based on preliminary cause and history, there is firm evidence that the condition 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 cause of the condition will be provided in a supplement to this LER.

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.

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

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|--|------------------|---------------|----------------------|------------|
| Susquehanna Steam Electric Station, Unit 2 | 05000-388 | YEAR | SEQUENTIAL NUMBER | REV NO. |
| | | 2019 | 001 | 00 |

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 OCCURENCES

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