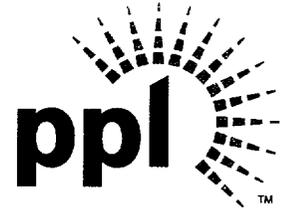


Bryce L. Shriver  
Vice President – Nuclear Site Operations

**Susquehanna Steam Electric Station**  
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APR 21 2000

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Station P1-137  
Washington, DC 20555

SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSEE EVENT REPORT 50-387/00-002-00  
PLA - 5189 FILE R41-2

Docket No. 50-387  
License No. NPF-14

Attached is Licensee Event Report 50-387/00-002-00 . This event was determined to be reportable per 10CFR50.73(a)(2)(ii) in that the total Main Steam Line Isolation Valve leakage exceeded the Technical Specification maximum pathway limit during Local Leak Rate Testing. The Main Steam Line Isolation Valves have been reworked and returned to within limits.

A handwritten signature in black ink, appearing to read "Bryce L. Shriver".

Bryce L. Shriver  
Vice President – Nuclear Site Operations

Attachment

cc: Mr. H. J. Miller  
Regional Administrator  
U. S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Mr. S. L. Hansell  
Sr. Resident Inspector  
U.S. Nuclear Regulatory Commission  
P. O. Box 35  
Berwick, PA 18603-0035

Handwritten initials in black ink, possibly "JES".

**LICENSEE EVENT REPORT (LER)**

(See reverse for required number of digits/characters for each block)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  
Susquehanna Steam Electric Station - Unit 1

DOCKET NUMBER (2)  
05000387

PAGE (3)  
1 OF 3

TITLE (4)  
Main Steam Isolation Valve Total Leakage Exceeded Technical Specification Limit

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
03	24	00	00	-- 002	-- 00	04	21	00	FACILITY NAME	DOCKET NUMBER
										05000
										05000

OPERATING MODE (9)	5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)								
POWER LEVEL (10)	0	20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)					
		20.2203(a)(1)	20.2203(a)(3)(i)	X 50.73(a)(2)(iii)	50.73(a)(2)(x)					
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71					
		20.2203(a)(2)(ii)	20.2203(a)(4)	50.73(a)(2)(iv)	OTHER					
		20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A					
		20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)						

LICENSEE CONTACT FOR THIS LER (12)

NAME C. T. Coddington - Senior Engineer, Licensing	TELEPHONE NUMBER (Include Area Code) 610 / 774-4019
---	--

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
X	SB	ISV	A585	Y					
B	SB	ISV	A585	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

At 0445 hours on March 24, 2000, with Unit 1 in its eleventh refueling and inspection outage (Mode 5, Refueling, 0% power), an evaluation of data from the scheduled Main Steam Line (MSL) penetration Local Leak Rate Testing (LLRT) determined that the "as-found" maximum pathway leakage for the Main Steam Isolation Valves (MSIV) was in excess of the limit of Technical Specification 3.6.1.3 for the MSL containment penetration maximum pathway leakage of 300 standard cubic feet per hour (SCFH). The total "as-found" maximum pathway leakage could not be determined since one of the MSIVs was unable to be pressurized. However, the total "as-found" minimum pathway leakage was only 135 SCFH. The evaluation determined that the MSIV LLRT excess "as-found" maximum pathway leakage was reportable pursuant to 10CFR50.73(a)(2)(ii). The cause was determined to be that two (2) MSIVs had excessive leak rates. This excessive leakage was due to a misalignment of the poppet to body seat on the "C" inboard MSIV and due to a metal piece embedded in the upper guide surface of the poppet in the "A" outboard MSIV. The corrective actions included reworking of the MSIVs and retesting them to ensure they were left below the Technical Specification limits. Since the leakage (the minimum path leak rate - 135 SCFH) that would have actually reached the main condenser is below the 300 SCFH analyzed in the dose calculations, there were no safety consequences or compromises to public health and safety as a result of this event.

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

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Susquehanna Steam Electric Station - Unit 1	05000				2 OF 3
	387	00	-- 002	-- 00	

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

**EVENT DESCRIPTION**

At 0445 hours on March 24, 2000, with Unit 1 in its eleventh refueling and inspection outage (Mode 5, Refueling, 0% power) an evaluation of data from the scheduled Main Steam Line (MSL; EIS CODE: SB) penetration Local Leak Rate Testing (LLRT) determined that the "as-found" maximum pathway leakage for the Main Steam Isolation Valves (MSIV; EIS CODE: BD) was in excess of the limit of Technical Specification 3.6.1.3 for the MSL due to the leak rate for the "C" inboard MSIV being approximately 1400 SCFH. The Technical Specification limit for total MSL containment penetration maximum pathway leakage is 300 standard cubic feet per hour (SCFH). At 1530 hours on March 24, 2000, the "A" outboard MSIV failed to pressurize. The total "as-found" maximum pathway leakage could not be determined since one of the MSIVs could not be pressurized. However, the total "as-found" minimum pathway leakage was only 135 SCFH. The evaluation determined that the MSIV LLRT excess "as-found" maximum pathway leakage was reportable pursuant to 10CFR50.73(a)(2)(ii).

**CAUSE OF EVENT**

The excess "as-found" total maximum pathway leakage was attributed to the performance of two MSIVs. The leak rate for the "C" inboard MSIV was approximately 1400 SCFH. The leak rate for the "A" outboard MSIV could not be determined. The cause of the failure of the "C" inboard MSIV was the misalignment of the poppet to body seat. It is most likely that a manufacturing error or a misalignment of a lapping tool caused the misalignment between the poppet and body seat. The cause of the failure of the "A" outboard MSIV was the existence of a metal piece embedded in the upper guide surface of the poppet. This piece caused a protrusion from the guide surface sufficient to interact with the upper body bore of the MSIV that the poppet guide surface rides on. The embedded metal piece appears to have come from a gouged area on the valve upper body bore. The gouging was likely due to the poppet guide surface outside diameter being slightly larger than original design. This reduced poppet to bore clearance may have caused a sharp guide edge that may have initiated the gouge.

**REPORTABILITY/ANALYSIS**

This event was determined to be reportable per 10CFR50.73(a)(2)(ii), as a condition resulting in degraded barriers found while the reactor was shutdown, in that the total MSL containment penetration leakage for the MSIVs was in excess of the total "as-found" maximum pathway leakage Technical Specification limit.

The MSIV leakage was found during scheduled testing with the unit in Mode 5, Refueling. If the MSIVs had been challenged to perform their safety function during unit operation, the MSIVs would have closed. The maximum pathway leak rate through the valves would have been greater than the 300 SCFH Technical Specification criteria. However, the leakage that would have actually reached the main condenser (i.e., the minimum pathway leak rate) was 135 SCFH. This value is below the 300 SCFH analyzed for the main condenser and in the dose calculations. As such, there were no safety consequences or compromises to public health and safety as a result of this event.

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

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Susquehanna Steam Electric Station - Unit 1	05000				3 OF 3
	387	00	-- 002	-- 00	

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

In accordance with the guidelines provided in NUREG-1022, Revision 1 Section 5.1.1, the required submission date for this report was determined to be April 24, 2000.

**CORRECTIVE ACTIONS**

The "C" inboard MSIV and the "A" outboard MSIV were reworked. The leak rate for the "C" inboard MSIV was restored to 6.3 SCFH. The leak rate for the "A" outboard was restored to less than 0.1 SCFH. The total "as-left" maximum pathway leak rate is 18.0 SCFH. Additionally, preventative maintenance was performed on three MSIVs that had passed the testing, as proactive action to reduce the probability of future failures. The total "as-left" minimum pathway leak rate is 16.7 SCFH. The leak rate for each of the eight MSIVs is less than 100 SCFH as required by the Technical Specifications.

**ADDITIONAL INFORMATION**

The events listed below are for the total minimum pathway leak rates exceeding the Technical Specification MSIV as-found criteria. The Technical Specifications were revised in 1995 for Unit 2 and in 1996 for Unit 1 to change the acceptance criteria to the total maximum pathway leak rates which is the subject of this LER.

Past Similar Events: LER 83-062-00, Docket No. 387/License No. NPF-14  
 LER 83-064-00, Docket No. 387/License No. NPF-14  
 LER 86-007-00, Docket No. 388/License No. NPF-22  
 LER 89-010-01, Docket No. 388/License No. NPF-22  
 LER 90-020-00, Docket No. 387/License No. NPF-14  
 LER 92-005-00, Docket No. 387/License No. NPF-14  
 LER 95-006-00, Docket No. 387/License No. NPF-14  
 LER 95-012-00, Docket No. 388/License No. NPF-22  
 LER 96-010-00, Docket No. 387/License No. NPF-14

The events listed below are for the total maximum pathway leak rates exceeding the Technical Specification MSIV as-found criteria.

Past Similar Events: LER 97-004-00, Docket No. 388/License No. NPF-22  
 LER 99-001-00, Docket No. 388/License No. NPF-22  
 LER 99-003-00, Docket No. 387/License No. NPF-14

Failed Component: MSIVs, HV-241F022C and HV-241F028A

Manufacturer: Atwood and Morrill Co., Inc.

Model: 21190-H