NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Susquehanna Steam Electric Station-Unit 2	0 5 0 0 0 3 8 8	1 OF 0 2

TITLE (4)

RPS Manual Scram Due To Stuck Open Turbine Bypass Valve During Shutdown.

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 NAMES	DOCKET NUMBER(S)
0 5	2 7	8 4	8 4	0 0 8	0 0	0 6	2 7	8 4		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
2		20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
0 1 0 2		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Benjamin L. Wilks	AREA CODE 7 1 1 7 5 4 2 - 3 1 2 3 1 9

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
B	J I I	P C V	G 0 8 4	N							

SUPPLEMENTAL REPORT EXPECTED (14)

		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

At 0530 hours on 5/28/84 shutdown of the Unit 2 reactor commenced from low power testing in compliance with Action Statement (b)(3) of Technical Specification 3.5.1.b(2) incurred at 1730 hours seven days earlier on 5/21/84 due to the inoperability of the 'B' Loop of the Low Pressure Core Injection (LPCI) System (refer to LER 84-006-00). The shutdown was being accomplished by inserting control rods individually into the reactor core utilizing the rod pull sheet. Shutdown preceeded normally until at 0605 hours when it was observed that the #1 Turbine Bypass Valve would not close below the 18% open position.

Shutdown of the Unit 2 reactor was halted and control rods in group 5 were pulled to maintain reactor pressure with the #1 Turbine Bypass Valve Controling at a position slightly greater than 18%.

Further investigation determined that the #1 Bypass Valve could not be closed below the 18%. At this time, it was determined the best means available for shutting down the reactor would be thru an RPS Manual Scram and at 1346 hours, the Unit 2 reactor was manually scrammed. The plant control operator tripped the 'B' reactor feed pump and closed all inboard main steam isolation valves at approximately 700 psig.

Subsequent investigations of the EHC pressure control and bypass valve control logic indicated that all control functions were operating normally. Investigation of the #1 Bypass Valve revealed that a chipping hammer wedged between the bypass valve seat and the valve disc preventing the #1 Bypass Valve from fully closing (ref. Memo PLA-2229). Disassembly of the #1 Bypass Valve showed small dents on the disc and the seat of the valve. The valve's seat was machined to remove the dents and the disc was replaced due to the difficulties in removing the old disc, and the valve was returned to service.

Based on a review of work documents and that system flushes were performed during preoperational testing, it is concluded that the occurrance of this loose tool in the units piping is an isolated event.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Susquehanna Steam Electric Station Unit 2	0 5 0 0 0 3 8 8	8 4	— 0 0 8	— 0 0	0 2 OF 0 2

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

At 0530 hours on 5/28/84 shutdown of the Unit 2 reactor commenced from low portion testing in compliance with Action Statement (b)(3) of Technical Specification 3.5.1.b(2) incurred at 1730 hours seven days earlier on 5/21/84 due to the inoperability of the 'B' Loop of the Low Pressure Core Injection (LPCI) System (refer to LER 84-006-00). The shutdown was being accomplished by inserting control rods individually into the reactor's core utilizing the rod pull sheet until all of the control rods were at the full in position. Shutdown proceeded normally until at 0605 hours it was observed that the #1 Turbine Bypass Valve would not close below the 18% open position (ref. Memo PLA-2229, "Susquehanna Steam Electric Station Turbine Bypass Transient", B.D. Kenyon to Dr. Thomas E. Murley, dated 6/8/84). Shutdown of the Unit 2 reactor was halted and control rods in group 5 were pulled sequentially to maintain reactor pressure with the #1 Turbine Bypass Valve Controling at a position slightly greater than 18%.

Instrumentation and Control, and Mechanical Maintenance personnel were sent to investigate the valve's failure to close. These investigations determined that the #1 Bypass Valve could not be closed below 18%. It was then determined that the best means available for shutting down the reactor would be thru an RPS Manual Scram. At 1346 hours, the Unit 2 reactor was manually scrammed, and at reactor vessel pressure of 700 psig all inboard main steam isolation valves were closed.

Subsequent investigations of the EHC pressure control and bypass valve control logic indicated that all control functions were operating normally. Investigation of the #1 Bypass Valve revealed that a chipping hammer was wedged between the Bypass Valve seat and the valve disc preventing the #1 Bypass Valve from fully closing (ref. Memo PLA-2229).

Although a sizable portion of the handle and the head of the hammer itself remained intact, it is believed that a spring portion, small in comparison to the overall dimensions of the hammer, was severed from the handle. This severed portion would most likely be deposited in the bypass's sparger into the Main Condenser, posing no threat to components in other parts of the system.

Disassembly of the #1 Bypass Valve showed small dents on the disc and the seat of the valve. The valve's seat was machined to remove the dents, the disc was replaced due to the difficulties in removing the old disc and the valve was returned to service.

A review of unit work documents indicates the bypass system was one of the last systems worked on prior to startup for preoperational testing. Based on this review and the fact that system flushes are performed as part of the Preoperational Test Program, it is concluded that the occurrance of this loose tool in the Unit's piping is an isolated event.

During this occurrance, primary system integrity was maintained and no release of radiation occurred; the health and safety of the public was not affected.

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June 27, 1984

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 84-008-00
ER 100450 FILE 841-23
PLA-2244

Docket No. 50-388
License No. NPF-22

Attached is Licensee Event Report 84-008-00. This event was determined to be reportable per 10CFR50.73(a)(2)(iv) in that while shuting down the Unit 2 reactor, the #1 Turbine Bypass Valve would not close past the 18% open position, and an RPS manual scram was initiated to shut down the unit.

H.W. Keiser
Superintendent of Plant-Susquehanna

BLW/pjg

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