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 5

TITLE (4)

Reactor Shutdown due to inoperability of the 'B' Loop of Low Pressure Core Injection.

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 0 0 0
0 5	2 8	8 4	8 4	—	0 0 6	—	0 0	0 6	2 7	8 4		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)	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 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
B.L. Wilks	AREA CODE 7 1 7 — 5 4 2 - 3 2 3 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	
X	B 0	I S V	A 3 9 1	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 at a power level of 2% in accordance with Action Statement (b)(3) of Technical Specification (T.S.) 3.5.1.b.2 due to the inoperability of the 'B' Loop of the Low Pressure Coolant Injection (LPCI) System (Also refer to LER 84-008-00).

The LCO was incurred at 0615 hours on 5/21/84 when the LPCI Injection Valve HV-2F015B was closed and de-energized in compliance with T.S. 3.6.3 following the occurrance of dual indication on the Testable Check Valve HV-2F050B and its Bypass Valve HV-2F122B (Also refer to Time Line and Figure 1 attached to this report). Later that day, the RHR Throttle Valve HV-2F017B was closed and HV-2F015B was cycled in an attempt to seat HV-2F050B; when HV-2F017B was reopened the 'B' RHR primary side heat exchanger pressure was observed increasing. Valve HV-2F017B was closed.

On 5/24/84 a Local Leak Rate Test (LLRT) showed leakage was occuring thru HV-2F015B and this leakage was the source of pressurization of the heat exchanger; LCO 3.4.3.2 was incurred at this time and Valve HV-2F017B was de-energized to ensure separation between the high and low pressure portions of the 'B' RHR. Loop B LPCI remained inoperable and the reactor was shutdown in seven days in compliance with T.S. 3.5.1.b.2. LPCI Injection Valve HV-2F015B was disassembled, repaired and returned to service. A loose plate connector on Valve HV-2F122B was found to be the cause for dual indication; the plate connector's set screws were tightened and the valve returned to service on 5/30/84.

On 6/10/84, LCO's for T.S.'s 3.6.3, 3.5.1.b.2 and 3.4.3.2 were cleared; 'B' Loop LPCI was returned to service and the Unit 2 reactor was allowed to start up for further testing.

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 6	— 0 0	0 3 OF 0 5

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 power testing at a power level of 2% in accordance with Action Statement (b)(3) of T.S. 3.5.1.b.2 due to the inoperability of the 'B' Loop of LPCI (Also refer to LER 84-008-00). The LCO was incurred at 0615 hours on 5/21/84 when the LPCI Injection Valve HV-2F015B was closed and de-energized in compliance with T.S. 3.6.3 following the occurrance of dual indication on Testable Check Valve HV-2F050 and its Bypass Valve HV-2F122B. Later that day, the RHR Throttle Valve HV-2F017B was closed and HV-2F015B was cycled in an attempt to seat HV-2F050B; when HV-2F017B was reopened, the 'B' RHR primary side heat exchanger pressure was observed increasing (Also refer to Time Line and Figure 1 attached to this report). Valve HV-2F017B was closed.

On 5/24/84 an LLRT showed leakage was occurring thru HV-2F015B and this leakage was the source of pressurization in the heat exchanger; LCO 3.4.3.2 was incurred at this time and Valve HV-2F017B was de-energized to ensure separation between the high and low pressure portions of the 'B' RHR. Loop B LPCI remain inoperable and in compliance with T.S. 3.5.1.b.2; the reactor was shutdown on 5/28/84.

The HV-2F015B is a horizontally mounted gate valve. Upon disassembly and inspection of LPCI Injection Valve HV-2F015B it was found that the valve's disc would not center on its seat due to the dimensions of the disc guide bearing surface and this resulted in the valve's disc sitting "low" in the valve's body. Due to machining tolerances during manufacturing, the disc would not seat in the same location each time it was stroked. To stop leakage thru the valve, its seat was lapped and upon the vendor's recommendation, its lower disc guide bearing surface was built up one-quarter ($\frac{1}{4}$) inch. The valve was reassembled and an LLRT and a hydro were satisfactorly completed on 6/7/84 and 6/8/84, respectively.

The reason for dual indication on Testable Check Valve's Bypass, HV-2F122B was attributed to a loose diaphram plate connector that resulted in improper contact with the limit switches on the bypass valve. The plate connector and its set screws were tightened, and its operator reconnected. Proper stroking and indication was observed during the performance of a subsequent LLRT.

On 6/10/84, LCO's for T.S.'s 3.6.3, 3.5.1.b.2 and 3.4.3.2 were closed; 'B' Loop of LPCI was returned to service and the Unit 2 reactor was allowed to start up for further testing. During this event, Loop A RHR remained operable, as were both systems of core spray; no release of radioactive material occurred. The health and safety of the public was not affected.

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 6	— 0 0	0 3 OF 0 5

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

Time Line

5/21/84

0455 hours — Dual indication received on Testable Check Valve HV-2F050B and its associated Bypass Valve HV-2F122B. LCO entered in accordance with T.S. 3.6.3 allowing either four (4) hours to repair the valve or isolate the penetration.

0615 hours — LPCI Injection Valve HV-2F015B on Loop B LPCI de-energized to comply with LCO per T.S. 3.6.3 action statement (a)(2). An LCO was entered in accordance with T.S. 3.5.1.b.2 since valve HV-2F015B was shut and de-energized inopting 'B' LPCI. Action statement (b)(3) requires LPCI to be operable in seven (7) days or the reactor is to be in hot shutdown (HSD) in twelve (12) hours and cold shutdown in twenty-four (24) hours.

Between 0615 and 1730 hours — LPCI Throttle Valve HV-2F017B was closed and valve HV-2F015B was cycled in attempts to close HV-2F050B. Pressure observed increasing in the primary side of 'B' RHR Heat Exchanger when valve HV-2F017B was opened with HV-2F015B closed. Valve HV-2F017B was again placed in a closed position.

5/24/84

0430 hours — LLRT performed indicated leakage from the RCS boundary in excess of 1 gpm. An LCO was entered at this time in accordance with T.S. 3.4.3.2.d. LPCI Throttle Valve HV-2B017B de-energized to insure separation between high and low pressure 'B' Loop of LPCI.

5/28/84

prior to 0530 hours — LLRT Retest showed no leakage thru HV-2F050B and a 3.0 gpm leak rate thru HV-2F015B.

0530 hours — Commenced Unit 2 Reactor shutdown in accordance with seven (7) day limit specified by T.S. 3.5.1.b.2, action (b)(3).

1345 hours — Unit 2 reactor shut down by placing Reactor Mode Switch in shutdown.

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 6	— 0 0	0 4 OF 0 5

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

Time Line

5/30/84 — Dual indication on Testable Check Valve HV-2F050B and Bypass Valve HV-2F122B attributed to a loose diaphram plate connector that resulted in improper contact with the bypass valve's indication limit switches. Valve's plate connector re-connected, set screws tightened. Valve returned to service on subsequent LLRT.

Between 5/28/84 and 6/7/84 — Valve 2F015B disassembled and inspected; valve's disc would not center on its seat due to improper dimensions of the disc guide bearing surface; the valve's seat was lapped and the lower disc guide bearing surface was built up ¼ inch with the valve vendors recommendation; the valve was then reassembled.

6/7/84 — LLRT (SE-259-032) completed satisfactory.

6/8/84 — Hydro per SE-259-112 completed satisfactory.

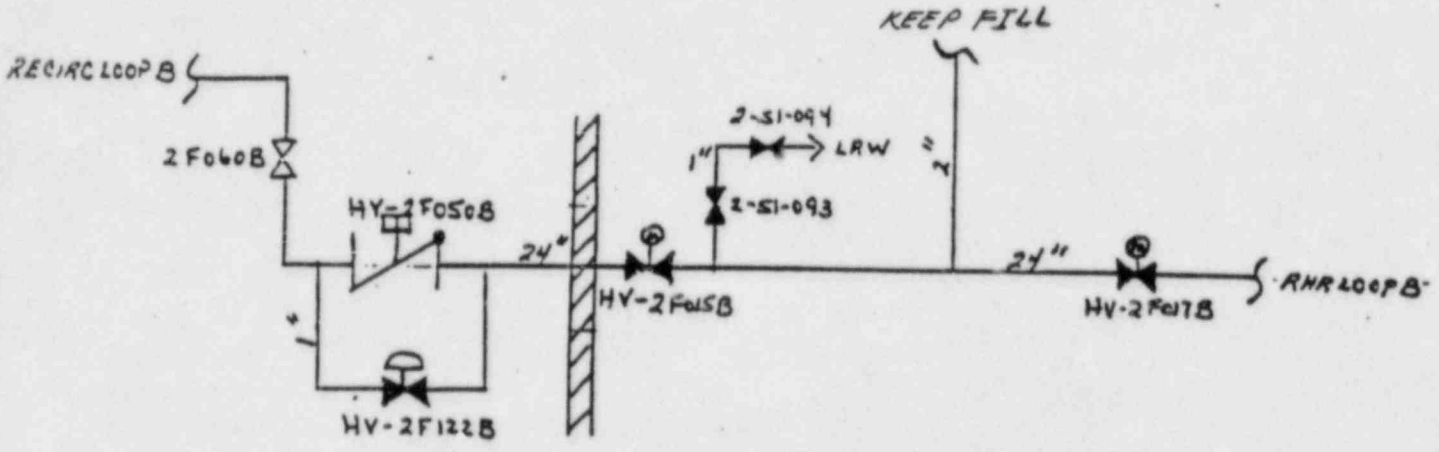
6/10/84

0045 - 0140 hours — LCO's per T.S. 3.6.3, 3.5.1.b.2 and 3.4.3.2 cleared.

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 1 6	— 0 2	0 5 OF 0 5

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

Figure 1



LOOP B RHR

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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 84-006-00
ER 100450 FILE 841-23
PLA-2243

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

Attached is Licensee Event Report 84-006-00. This event was determined to be reportable per 10CFR50.73(a)(2)(i) in that the Unit 2 reactor was required to be shutdown on May 28, 1984 in accordance with Action Statement (b)(3) of Technical Specification 3.5.1.b.2, due to the inoperability of the 'B' Loop of the Low Pressure Coolant Injection System.

H.W. Keiser
Superintendent of Plant-Susquehanna

BLW/pjg

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