NRC FORM 366 (7-77)

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

CONTROL BLOCK: | | | | | | | (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1	V A S P S 1 (2)	0 0 - 0 0 0 0 0 - 0 0 (3)	4 1 1 1 1 (4)		(5)
	LICENSEE CODE	LICENSE NUMBER	LICENSE TYPE	CAT

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0 1	REPORT SOURCE L (6)	0 5 0 0 0 2 8 0 (7)	0 9 0 1 8 2 (8)	0 9 3 0 8 2 (9)
		DOCKET NUMBER	EVENT DATE	REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 On 9-1, and 20, 1982, 1-SW-P-10A experienced a loss of suction pressure. A similar
0 3 loss of suction was experienced on 1-SW-P-10B on 9-1, 14 and 20, 1982. The
0 4 inoperability of these pumps is contrary to T.S.3.3.A.8.b and reportable per
0 5 T.S.6.6.2.b.(2). Since the charging pump bearing temperatures remained within
0 6 specifications and the low pressure alarms were in for only a short time, the health
0 7 and safety of the public were not affected.
0 8

0 9	SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
	W A (11)	X (12)	Z (13)	P U M P X X (14)	B (15)	Z (16)

(17) LER/RO REPORT NUMBER	EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
	8 2	—	0 8 7	/	0 3	L	—	0

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS (22)	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER
X (18)	F (19)	Z (20)	Z (21)	0 0 0 0	Y (23)	N (24)	A (25)	I 0 7 5 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 The loss of suction to the operating pump (s) was due to insufficient NPSH. During
1 1 these incidents, service water to the air conditioning chillers was replaced and
1 2 the affected service water pump (s) vented to restore NPSH.
1 3
1 4

1 5	FACILITY STATUS	% POWER	OTHER STATUS (30)	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION (32)
	E (28)	1 0 0 (29)	N/A	A (31)	Operator Observation

1 6	ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY (35)	LOCATION OF RELEASE (36)
	Z (33)	Z (34)	N/A	N/A

PERSONNEL EXPOSURES

1 7	NUMBER	TYPE	DESCRIPTION (39)
	0 0 0 (37)	Z (38)	N/A

PERSONNEL INJURIES

1 8	NUMBER	DESCRIPTION (41)
	0 0 0 (40)	N/A

LOSS OF OR DAMAGE TO FACILITY (43)

1 9	TYPE	DESCRIPTION
	Z (42)	N/A

PUBLICITY

2 0	ISSUED	DESCRIPTION (45)	NRC USE ONLY
	N (44)	N/A	

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PDR ADOCK 05000280
S PDR

NAME OF PREPARER J. L. Wilson PHONE (804) 357-3184

ATTACHMENT 1
SURRY POWER STATION, UNIT NO. 1
DOCKET NO: 50-280
REPORT NO: 82-087/03L-0
EVENT DATE: 09-01-82

TITLE OF THE EVENT: Inoperable Charging Pump Service Water Pumps

1. DESCRIPTION OF THE EVENT:

On September 1 and 20, with the unit at full power, 1-SW-P-10A (Charging Pump service water pump) experienced a loss of suction pressure which resulted in a loss of discharge pressure. On September 1, 14, and 20, 1-SW-P-10B experienced a loss of suction pressure.

Inoperability of the charging pump service water pumps is contrary to Technical Specification 3.3.A.8.b and is reportable per Technical Specification 6.6.2.b.(2).

2. PROBABLE CONSEQUENCES and STATUS of REDUNDANT EQUIPMENT:

The charging pump service water pumps supply cooling water to the charging pump intermediate seal oil coolers and the charging pump lubricating oil coolers. During the short periods when these pumps were inoperable, a maximum of 20 minutes, the charging pump bearing temperature did not show any significant increase. In all cases, the pumps were restored to service within the time limits of T.S.3.3.B.6 and 3.0.1; therefore, the health and safety of the public were not affected.

3. CAUSE:

The presence of air in the pump is due to insufficient NPSH. Four charging pump service water pumps, along with three Air Conditioner Chiller units are located in No. 3 equipment room. The aforementioned components are supplied with service water, via rotating strainers, from two 6" supply lines. Each supply line is gravity fed from the intake canal.

Two-inch branch lines supply service water to the charging pump service water pumps, while the service water lines to the chiller units are four-inch lines. In addition, the Unit No. 1 and Unit No. 2 'B' charging pump service water pumps are located at a higher elevation.

Experience has shown that the performance of the charging pump service water pumps, especially the 'B' pumps, are sensitive to the available NPSH.

A recent modification (DC 80-42) attempted to resolve the NPSH problems of the service water system. Installation and testing, completed in early spring, indicated satisfactory performance; However, an intermittent problem is now indicated.

4. IMMEDIATE CORRECTIVE ACTION:

The service water flow through the air conditioning chillers was reduced, thereby increasing the available NPSH to the service water pumps. In addition, the associated service water pump suction strainer was inspected. The service water pump was vented and returned to service.

5. SUBSEQUENT CORRECTIVE ACTION:

The setpoint for 'B' air conditioning chiller service water flow control valve was checked. Minor adjustments were required. The setpoints for the remaining flow control valves will be checked.

6. ACTION TAKEN TO PREVENT RECURRENCE:

A Design Change has been initiated that will relocate two of the charging pump service water pumps, i.e. lower the pumps and increase the size of the suction piping to the pumps. In an effort to reduced air inleakage in the suction header, a preventative maintenance procedure has been implemented.

7. GENERIC IMPLICATIONS:

The NPSH problem is Generic at both Surry Units.