

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Surry Power Station, Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 2 8 0	PAGE (3) 1 OF 0 4
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TITLE (4)
Debris In Containment Sumps Due To Inadequate Inspection Program

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 6	0 6	8 8	8 8	0 1	7	0 0	0 7	0 6	8 8			0 5 0 0 0

OPERATING MODE (8) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10) 0 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(e)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.38(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)						
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.38(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)							
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input checked="" type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)							
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)								

LICENSEE CONTACT FOR THIS LER (12)

NAME D. L. Benson, Station Manager	TELEPHONE NUMBER
	AREA CODE: 8 0 4 NUMBER: 3 5 7 - 1 3 1 8 4

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

SUPPLEMENTAL REPORT EXPECTED (14)

<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)
		MONTH: 0 8 DAY: 3 0 YEAR: 8 8

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

On June 6, 1988 with Units 1 & 2 in cold shutdown, following a special test run of the Unit 1 Inside Recirculation Spray (IRS) pump {EIIS-P}, foreign material was found in the temporary discharge cone strainer. As a result of this finding, an inspection of the Unit 2 Recirculation Spray pump sumps was conducted, and foreign objects were also discovered. The sump screens were inspected and various deficiencies were noted. The foreign objects were removed from the sumps, the screens were repaired and sump divider screens were installed. A containment sump and pump screen surveillance will be implemented. A similar inspection program for Unit 1 was initiated and completed. These results are being evaluated and will be submitted as a supplement to this report.

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

1.0 Description of the Event

On June 6, 1988, with Units 1 and 2 in cold shut-down, following a special test run of the Unit 1 Inside Recirculation Spray (IRS) pump {EIIS-P}, foreign material was found in the temporary discharge cone strainer. The material consisted of cap screws, a swagelock cap, nuts, weld wire and other objects. As a result of this finding and the imminent return to power by Unit 2, an inspection of the Unit 2 Recirculation Spray (RS) pump sumps was conducted. This area includes the pump suction for the IRSPs, the Outside Recirculation Spray (ORS) pumps {EIIS-P} and the Low Head Safety Injection (LHSI) pumps {EIIS-P}. This inspection utilized fiber optics and included removal of foreign objects. The foreign objects removed included nuts, bolts, wire, metal and wood pieces, and other material.

Multiple screens are installed to prevent foreign objects from entering the above pump suction. These screens were inspected. Various deficiencies were noted which included gaps in the cylindrical screens surrounding the individual pump suction, a missing divider screen which separates the 'A' and 'B' trains of these pumps, and various missing fasteners for the screen sections. A similar inspection program for unit 1 was initiated and completed. The completed unit 1 inspection results are being evaluated and will be submitted as a supplement to this report.

2.0 Safety Consequences and Implications

An engineering review of the "as found" condition of the Unit 2 Recirculation Spray systems and LHSI systems was conducted. It was found that the fine mesh cylindrical screens were loosely fastened with small gaps between some sections. The fine mesh cylindrical screens are intended as a backup to the roughing and fine mesh screen arrangement. The roughing and fine mesh screens also had minor gaps. The "as found" screen arrangement provides an extremely tortuous path for foreign object introduction into the suction piping of the RS and LHSI lines. Therefore, a remote possibility of foreign object introduction did exist.

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The review also concluded that a small probability existed for one of the foreign objects, a swagelock pipe fitting discovered in the LHSI suction piping, to migrate to one of three parallel venturi flow limiting devices and block LHSI to one loop. However, an analysis of the geometry of the venturi restrictions and that of the pipe fitting found the probability of a flow blockage event to be too small to be considered a credible event. The study concluded that the RS and LHSI systems would function as designed. Therefore, the health and safety of the public were not affected.

A similar engineering review of the inspection of unit 1 will be conducted.

3.0 Cause

The debris in the RS and LHSI sumps and suction piping resulted from inadequate sump well cleaning and screen inspection in the past. Due to the inadequacy of sump cleaning and inspection, foreign objects were allowed to accumulate in the sump wells.

The gaps in the cylindrical pump suction well filter screens appear to be a design deficiency which has existed since initial installation.

Since there had been no established sump screen inspection program, it is unknown when and why the divider screens were removed without replacement or if they were initially installed.

4.0 Immediate Corrective Action(s)

Since the unit was in the cold shutdown condition at the time of the event, no immediate corrective actions were required.

5.0 Additional Corrective Action(s)

The foreign objects were removed from the sumps. The cylindrical screens on which gaps were discovered were repaired. Sump divider screens were fabricated and installed.