POW 28-06-01

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)
Surry Power Station, Unit 1	0 5 0 0 0 2 8 0	1 OF 0 3

TITLE (4)

Isolated Phase Bus Duct Arcing

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 1 2 4	8 6		8 6	0 0 5	0 0	0 2 2 1	8 6			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)			
N	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 0 4 2	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
	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
	AREA CODE
R. F. Saunders, Station Manager	8 0 4 3 5 7 - 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)		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)

ABSTRACT

On 1-24-85 at 0925 hours, unit 1 was manually tripped from 42% power due to arcing on the A isolated phase bus duct.

The ground straps that bridge butting sections of duct developed corrosion product buildup on the contact surfaces of their lugs. The straps carried less current which led to the duct arcing.

The damaged section of duct was replaced and was welded to prevent a possible recurrence. Where possible, other butting sections of duct will be welded to eliminate grounding straps and reduce the probability of future occurrences.

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PDR ADOCK 05000280
S PDR

NRC Form 366A
(9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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Surry Power Station, Unit 1	0 5 0 0 0 2 8 0	8 6	— 0 0 5	— 0 0	0 2 OF 0 3

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

Manual Trip Due To Isolated Phase Bus Duct Arcing

1. Description of the Event

On 1-24-86, unit 1 was at 99% power. At 0435 hours a Security Officer observed arcing on the "A" isolated phase bus duct. The Control Room was notified and a 150 MW per hour rampdown was begun. A fire team was assembled at the duct as a precaution; however, they were not needed. The arcing was occurring at the junction of two bus enclosure sections.

At 0745 hours, the frequency and severity of the arcing was greatly reduced, and the ramp was halted to evaluate the problem. At 0922 hours, the arcing again increased and a ramp to hot shutdown was started. However, at 0925 it was decided to manually trip the reactor and by 0927 hours, all arcing had stopped.

2. Safety Consequences

The isolated phase bus does not supply power to safety related components and manual reactor trips are analyzed in the UFSAR. Although the failed bus can be used as an alternate supply of offsite power, power was not needed by this means and redundant off site power was available. For these reasons, an unreviewed safety question was not created and the public's health and safety remained unaffected.

3. Cause

A main generator isolated phase bus creates induced currents in the cooling duct that surrounds it. This bus duct was originally designed to telescope for maintenance. Where sections of the telescoping enclosure meet, grounding straps (called shunt straps) are used to tie one section to the other.

Part of the isolated bus ducts are outside and therefore exposed to the elements. Over a period of time, the lugs on the shunt straps are susceptible to corrosion product build up on the contact surfaces. If enough resistance to current flow is developed in the shunt straps of one enclosure connection, arcing from one section of the duct to the other will occur. This event is an example of such an occurrence.

4. Immediate Corrective Actions

Following the trip, the appropriate procedures were used to quickly stabilize the plant.

The Shift Technical Advisor monitored the critical status trees to ensure that plant parameters remained within safe bounds.

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5. Additional Corrective Actions

The damaged section of the duct was replaced and the duct connection was welded. The remaining shunt straps were inspected and replaced where necessary.

6. Action Taken to Prevent Recurrence

Where possible, butting sections of ducting will be welded to eliminate the need for shunt straps.

7. Generic Implications

A similar event occurred on unit 1 on 1-5-82.