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 2	0 5 0 0 0 2 8 1	1 OF 0 3

TITLE (4)
High Level "A" Steam Generator

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 1 4	8 4	8 4	—	0 0 3	— 0 0	0 2 1 3	8 4			0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 2 3	20.402(b)	20.405(c)	✓ 50.73(a)(2)(iv)	73.71(b)
		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
J. L. Wilson - 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	
B	L D	P S F	0 0 0 0	N							
X	I G	R I	W 1 2 0	Y							

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	✓ NO				

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

With Reactor Power at 23 percent, the feed flow to "A" steam generator increased to full flow. The operator was not quick enough to close the valve and the "A" steam generator high level trip initiated a Turbine Trip, which tripped the reactor.

An elbow in the air supply piping to the 'A' feed regulating valve was damaged and leaking. The 1/2 inch line was not secured and vibration had caused it to hit against it's support.

The damaged elbow was replaced and the line was secured.

NRC Form 366A (9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
SURRY POWER STATION	0 5 0 0 0 2 8 1	8 4	— 0 0 3	— 0 0	0 2 OF 0 3

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

1.0 Description of the Event

On January 14, 1984, a unit two start-up was in progress with the Reactor Power at 23% and turbine power at 30 MWe. Feedwater control was in manual and the transition from bypass to main feed regulating valve (FRV) (EIIS FCV) had just been completed. The "A" feed flow suddenly increased to full flow. The operator manually closed the FRV and motor operated valve MOV-FW-154A (EIIS 20) however, these actions were not rapid enough to prevent a high level condition in the steam generator and at 13:15 a turbine trip and feed pump trip was initiated by the high level indication. The turbine trip initiated a reactor trip.

During this event, all other control and safety systems functioned properly except Source Range Monitor N-31 (EIIS RI) did not automatically reinstate.

2.0 Safety Consequences and Implications

A reactor trip in coincidence with low Tave or Safety Injection (SI) will cause the feed regulating valves to trip closed, minimizing plant cooldown. The automatic closure of this valve on SI or Low Tave was not affected by the air line failure.

Source Range Channels, when reinstated, prevent uncontrolled power increases during a reactor startup. The redundant channel functioned normally.

All other safety related systems remained operable during the event and plant parameters remained within the bounds of the accident analysis. Therefore this event did not constitute an unreviewed safety question or effect the health and safety of the public.

3.0 Cause

An elbow in the air supply piping to the "A" FRV was found to be damaged and leaking. The 1/2" line was not properly secured and vibration had caused it to hit against it's support. The leak reduced the air pressure available to the valve positioner and therefore, a higher than normal demand signal was required to maintain a given valve position. It is believed that the line moved in such a way as to decrease the leakage. The higher air pressure with the high demand caused the FRV to move to the full open position.

The cause for the failure of N-31 to reinstate was a failure in the "crowbar" circuit. The failure of the crowbar circuit is believed to be due to failure of the .1 μF capacitor in the circuit due to age.

NRC Form 366A
(9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
SURRY POWER STATION	0 5 0 0 0 2 8	8 4	— 0 0 3	— 0 0	0 3 OF 0 3

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

4.0 Immediate Corrective Action

The operators performed all appropriate Emergency Procedures and Function Restoration Procedures to ensure the plant was returned to a stable condition. This included closing MOV-FW-154A to isolate the feedwater to "A" steam generator.

The STA performed status tree reviews to ensure specific plant parameters were noted and maintained within safe bounds.

5.0 Additional Corrective Action

Inspection of the air lines revealed a second elbow that showed signs of damage. Both elbows were replaced and the air line was secured.

The Source Range was reinstated by removing and reinstalling the power fuse.

6.0 Action Taken to Prevent Recurrence

The air line has been properly secured. The source range "crowbar" circuit will be repaired upon receipt of a replacement capacitor.

7.0 Generic Implications

None.