

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) <b>SURRY POWER STATION, UNIT 1</b>	DOCKET NUMBER (2) <b>0 5 0 0 0 2 8 0</b>	PAGE (3) <b>1 OF 3</b>
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TITLE (4)  
**REACTOR TRIP (ANTI-MOTORING TURBINE TRIP)**

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)																													
01	28	85	85	006	00	02	21	85			050000																													
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">OPERATING MODE (9) <b>N</b></td> <td style="width:25%;">20.402(b)</td> <td style="width:15%;">20.405(c)</td> <td style="width:15%;"><input checked="" type="checkbox"/></td> <td style="width:20%;">50.73(a)(2)(iv)</td> <td style="width:20%;">73.71(b)</td> </tr> <tr> <td rowspan="5">POWER LEVEL (10) <b>0 1 5</b></td> <td>20.405(a)(1)(i)</td> <td>50.36(c)(1)</td> <td><input type="checkbox"/></td> <td>50.73(a)(2)(v)</td> <td>73.71(c)</td> </tr> <tr> <td>20.405(a)(1)(ii)</td> <td>50.36(c)(2)</td> <td><input type="checkbox"/></td> <td>50.73(a)(2)(vii)</td> <td rowspan="4">OTHER (Specify in Abstract below and in Text, NRC Form 366A)</td> </tr> <tr> <td>20.405(a)(1)(iii)</td> <td>50.73(a)(2)(i)</td> <td><input type="checkbox"/></td> <td>50.73(a)(2)(viii)(A)</td> </tr> <tr> <td>20.405(a)(1)(iv)</td> <td>50.73(a)(2)(ii)</td> <td><input type="checkbox"/></td> <td>50.73(a)(2)(viii)(B)</td> </tr> <tr> <td>20.405(a)(1)(v)</td> <td>50.73(a)(2)(iii)</td> <td><input type="checkbox"/></td> <td>50.73(a)(2)(ix)</td> </tr> </table>												OPERATING MODE (9) <b>N</b>	20.402(b)	20.405(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	73.71(b)	POWER LEVEL (10) <b>0 1 5</b>	20.405(a)(1)(i)	50.36(c)(1)	<input type="checkbox"/>	50.73(a)(2)(v)	73.71(c)	20.405(a)(1)(ii)	50.36(c)(2)	<input type="checkbox"/>	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)	<input type="checkbox"/>	50.73(a)(2)(viii)(A)	20.405(a)(1)(iv)	50.73(a)(2)(ii)	<input type="checkbox"/>	50.73(a)(2)(viii)(B)	20.405(a)(1)(v)	50.73(a)(2)(iii)	<input type="checkbox"/>	50.73(a)(2)(ix)
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THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)

LICENSEE CONTACT FOR THIS LER (12)

NAME <b>R. F. SAUNDERS, STATION MANAGER</b>	TELEPHONE NUMBER <b>8 0 4 3 5 7 - 3 1 8 4</b>
AREA CODE	

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)

YES (If yes, complete EXPECTED SUBMISSION DATE)       NO

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

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

On 1/28/85, during a Unit 1 startup, a Reactor trip occurred due to a differential pressure anti-motoring turbine trip. Plant parameters did not indicate that a generator motoring condition existed.

The trip occurred because the exhaust pressure sensing line root Valve in the anti-motoring instrumentation was isolated. It is believed that this valve, while shut, developed a small leak during a previous period of power operation, allowing the sensing line to become pressurized. The line remained sufficiently pressurized during the shutdown period to cause the anti-motoring delta P setpoint to be exceeded as the turbine was being loaded.

Station drawings and valve line up checklists for the Main Steam System will be changed to reflect the correct position and function of the valves.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8   5	—   0   0   6	—   0   0	0   2	OF	0   3

TEXT (If more space is required, use additional NRC Form 365A's) (17)

1. Description of the Event

On January 28, 1985 following previous reactor trips on 1/26/85 and 1/27/85 (See LERs 85-003 and 85-004), a unit 1 startup was in progress with reactor power at 15% and turbine power at 60 MWe. At 0030, approximately 70 seconds after closure of the generator output breakers, a reactor trip occurred due to a differential pressure anti-motoring turbine trip. Plant parameters did not indicate that a generator motoring condition existed.

Following the event, control and safety systems functioned as expected. Operators followed appropriate plant procedures and quickly stabilized the unit.

2. Safety Consequences and Implications

The anti-motoring protection is provided to trip the turbine if the load on the turbine has decreased to the point that generator motoring is imminent. Generator motoring is sensed by two means and two separate trips are provided. The differential pressure anti-motoring trip senses a low delta P across the high pressure turbine. The directional current anti-motoring trip senses a generator power-in condition. Although the differential pressure instrumentation was giving false indication, the turbine would have tripped had a valid generator motoring condition existed because the directional current protection remained operational. A similar trip from full power is considered in the UFSAR and would not have caused any safety limits to be exceeded. Therefore, an unreviewed safety question was not created and the health and safety of the public was not affected.

3. Cause

The anti-motoring turbine trip was caused by an isolated exhaust pressure sensing line in the anti-motoring differential pressure instrumentation. The valve line up checklist for the system incorrectly identified the valve as a piping drain and called for the valve to be shut. In addition, the station drawing for the system did not identify this valve as an instrument root valve.

It is believed that this valve, while shut, developed a small leak during a previous period of power operation, allowing the sensing line to become pressurized. The line remained sufficiently pressurized during the shutdown period to cause the anti-motoring delta P setpoint to be exceeded as the turbine was being loaded.

4. Immediate Corrective Action

Operators performed appropriate emergency and function restoration procedures to ensure the plant was returned to a stable condition. The Shift Technical Advisor performed the status tree reviews to ensure specific plant parameters were noted and maintained within safe limits.

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5. Additional Corrective Action

The anti-motoring differential pressure instrumentation was inspected; the setpoints checked and found to be satisfactory. Upon further investigation, the sensing line root valve was found isolated and was opened. The sensing line root valve on unit 2 was verified to be in the open position.

6. Action Taken to Prevent Recurrence

The station drawings and the valve line up checklist for the Main Steam System will be changed to reflect the correct position and function of the valves.

7. Generic Implications

None.