

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) <b>Salem Generating Station - Unit 2</b>	DOCKET NUMBER (2) <b>0 5 0 0 0 3 1 1</b>	PAGE (3) <b>1 OF 0 4</b>
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TITLE (4)  
**T. S. 3.0.3 Entry; 2 Steam Flow Channels For 1 Steamline Inoperable Due To An Equip. Prob.**

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)
04	01	89	89	007	00	04	27	89			0 5 0 0 0

OPERATING MODE (9) <b>1</b>	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
	POWER LEVEL (10) <b>0 4 9</b>	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 80.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 80.38(c)(1)	<input type="checkbox"/> 80.73(a)(2)(v)	<input type="checkbox"/> 73.71(e)	OTHER (Specify in Abstract below and in Text, NRC Form 385A)
<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 80.38(c)(2)	<input type="checkbox"/> 80.73(a)(2)(vi)	<input type="checkbox"/>							
<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 80.73(a)(2)(i)	<input type="checkbox"/> 80.73(a)(2)(vii)(A)	<input type="checkbox"/>							
<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 80.73(a)(2)(ii)	<input type="checkbox"/> 80.73(a)(2)(vii)(B)	<input type="checkbox"/>							
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 80.73(a)(2)(iii)	<input type="checkbox"/> 80.73(a)(2)(viii)	<input type="checkbox"/>							

LICENSEE CONTACT FOR THIS LER (12)									
NAME <b>M. J. Pollack - LER Coordinator</b>							TELEPHONE NUMBER		
							AREA CODE <b>6 0 9</b>		
							<b>3 3 9 - 4 0 2 2</b>		

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
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)							<input checked="" type="checkbox"/> NO				

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

On April 1, 1989, Operations shift personnel observed steam flow channels I and II for No. 21 Steam Generator (S/G) steamline and channel I for No. 24 S/G steamline to be reading approximately 5% lower than feed flow. They were declared inoperable and Technical Specification 3.3.2.1 Table 3.3-3 Action 14 was implemented. In accordance with the Action Statement, the channel bistables were placed in a tripped condition. However, since the Technical Specification Table Action Statement addresses the actions required for one inoperable channel per steamline and more than one channel per steamline was declared inoperable, Technical Specification 3.0.3 was entered. The root cause of this event has been attributed to an equipment problem. The steamline flow transmitters were found to be out of calibration. The channels were calibrated successfully. Subsequently, Technical Specification 3.0.3 was exited at 2005 hours on April 1, 1989 and Technical Specification 3.3.2.1 Table 3.3-3 Action 14 was exited at 1937 hours on April 2, 1989. System Engineering is continuing a review of the design and operation of the steamline flow measurement equipment.

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PLANT AND SYSTEM IDENTIFICATION:

Westinghouse - Pressurized Water Reactor

Energy Industry Identification System (EIIS) codes are identified in the text as {xx}

IDENTIFICATION OF OCCURRENCE:

Technical Specification 3.0.3 Entry; Two Steam Flow Channels for One Main Steamline Inoperable Due To An Equipment Problem

Event Date: 4/01/89

Report Date: 4/27/89

This report was initiated by Incident Report No. 89-187.

CONDITIONS PRIOR TO OCCURRENCE:

Mode 1 Reactor Power 49% - Unit Load 480 MWe

DESCRIPTION OF OCCURRENCE:

On April 1, 1989 at 1530 hours, Operations shift personnel observed steam flow channels I and II for No. 21 Steam Generator (S/G) steamline and channel I for No. 24 S/G steamline to be reading approximately 5% lower than feed flow. They were declared inoperable and Technical Specification 3.3.2.1 Table 3.3-3 Action 14 was implemented. In accordance with the Action Statement, the channel bistables were placed in a tripped condition. However, since the Technical Specification Table Action Statement addresses the actions required for one inoperable channel per steamline and more than one channel per steamline was declared inoperable, Technical Specification 3.0.3 was entered.

Technical Specification 3.0.3 states:

"When a Limiting Condition for Operation is not met except as provided in the associated ACTION requirements, within one hour action shall be initiated to place the unit in a MODE in which the specification does not apply by placing it, as applicable, in:

1. At least HOT STANDBY within the next 6 hours,
2. At least HOT SHUTDOWN within the following 6 hours, and
3. At least COLD SHUTDOWN within the subsequent 24 hours.

Where corrective measures are completed that permit operation under the ACTION requirements, the ACTION may be taken in accordance with the specified time limits as measured from the time of failure to meet the Limiting Condition of Operation. Exceptions to these requirements are stated in the individual specifications."

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APPARENT CAUSE OF OCCURRENCE:

The root cause of this event has been attributed to an equipment problem. The steamline flow transmitters were found to be out of calibration.

ANALYSIS OF OCCURRENCE:

Main Steam steamline flow is used as an input for S/G Feed Pump speed control and S/G water level control. In addition, steamline flow signals are used for input to steamline isolation, safety injection (SI), and steam flow/feed flow mismatch. Steam flow/feed flow mismatch when coupled with "Low S/G Level" will initiate a reactor trip signal.

The 5% low steam flow indication would have a negligible effect on S/G Feed Pump speed control or S/G water level control.

The 5% low steam flow inaccuracy may delay the Steam flow/feed flow mismatch with "Low S/G Level" reactor trip. However, this trip is not taken credit for in the accident analysis. Loss of heat sink protection is provided by the Low-Low S/G Level trip.

Steamline isolation and SI will occur when sensed high steam flow is combined with either Low-Low  $T_{avg}$  or low steamline pressure. These functions minimize the transient associated with a main steamline break. The 5% steam flow error is not sufficient to prevent actuation of the steam break protection logic because a break of the magnitude which warrants the actuation would result in steam flow exceeding the setpoint by a sufficient amount to compensate for the flow error. For a leak which would increase the steam flow from 100% to just beyond the setpoint for the SI actuation, the transient on the remainder of the plant would probably not be sufficient to cause the other coincident inputs (i.e., Low-Low  $T_{avg}$  or low steamline pressure) to decrease to the value required to satisfy the actuation logic. However, any developing transient would be slow enough for Operator action(s) to mitigate it.

The SI high steam flow setpoint is the differential pressure corresponding to 40% of full steam flow between 0% and 20% load and then a differential pressure increasing linearly to a differential pressure corresponding to 110% of full steam flow at full load.

In accidents such as main steam line rupture or accidental depressurization of the main steam system with the main steam isolation valve closed, the steam flow inaccuracy will not prevent the differential pressure signals between steam lines to actuate SI.

Based upon the analysis above, this event did not affect the health or safety of the public. However, this event is reportable in accordance with Code of Federal Regulations 10CFR 50.73(a)(2)(i)(B).

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CORRECTIVE ACTION:

The channels were calibrated successfully. Subsequently, Technical Specification 3.0.3 was exited at 2005 hours on April 1, 1989 and Technical Specification 3.3.2.1 Table 3.3-3 Action 14 was exited at 1937 hours on April 2, 1989.

System Engineering is continuing a review of the design and operation of the steamline flow measurement equipment.



General Manager -  
Salem Operations

MJP:pc

SORC Mtg. 89-035



Public Service Electric and Gas Company P.O. Box E Hancocks Bridge, New Jersey 08038

Salem Generating Station

April 27, 1989

U. S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

Dear Sir:

SALEM GENERATING STATION  
LICENSE NO. DPR-75  
DOCKET NO. 50-311  
UNIT NO. 2  
LICENSEE EVENT REPORT 89-007-00

This Licensee Event Report is being submitted pursuant to the requirements of the Code of Federal Regulations 10CFR 50.73 (a)(2)(i)(B). This report is being submitted within thirty (30) days of discovery.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "L. K. Miller".

L. K. Miller  
General Manager -  
Salem Operations

MJP:pc

Distribution

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