

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Salem Generating Station - Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 2 7 2				PAGE (3) 1 OF 0 3										
TITLE (4) Engineered Safety Feature Actuation System Feedwater Isolation Malfunction																								
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)											
1	0	2	0	8	4	8	4	0	2	4	0	0	1	1	6	8	4	0	5	0	0	0	0	0
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8: (Check one or more of the following) (11)																						
1		20.402(b)				20.405(e)				50.73(e)(2)(iv)				73.71(b)										
POWER LEVEL (10)		0 0 5				20.405(a)(1)(i)				50.36(e)(1)				50.73(a)(2)(v)				73.71(e)						
		20.405(a)(1)(ii)				50.36(e)(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)(ix)														
LICENSEE CONTACT FOR THIS LER (12)																								
NAME J. L. Rupp										TELEPHONE NUMBER														
										AREA CODE 6 0 9 3 3 9 - 4 3 0 9														
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																								
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC														
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 October 20, 1984, during Unit startup operations, while in the process of shifting from Auxiliary Feedwater to Main Feedwater, 11, 12, and 13BF13 Valves (Steam Generator Feedwater Regulation Valve Isolation Valves) closed. It was apparently caused by a spurious feedwater actuation signal; however, 14BF13, the feedwater regulation valves and the feedwater regulation valve bypass valves were unaffected. In addition, there were no plant conditions at the time which warranted an actuation signal. When initial investigation and testing did not reveal a cause, Technical Specification Action Statement 3.3.2.1.b was entered and the Unit was placed in Mode 3 in accordance with the action requirement. Extensive testing verified proper operation of the feedwater isolation function, and the partial actuation could not be duplicated. Feedwater isolation functioned as designed, and the event was attributed to a spurious, non-repeatable signal. A partial actuation such as this has not been previously or subsequently experienced. This occurrence involved no undue risk to the health or safety of the public. However, due to the completion of a Unit shutdown which is required by the Technical Specifications, the event is reportable in accordance with the Code of Federal Regulations, 10CFR 50.73(a)(2)(i)(A).

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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:**

Engineered Safety Feature Actuation System - Feedwater Isolation Malfunction

Event Date: 10/20/84

Report Date: 11/16/84

This report was initiated by Incident Report No. 84-166

**CONDITIONS PRIOR TO OCCURRENCE:**

Mode 1 - Rx Power 005 % - Unit Load 0000 MWe

**DESCRIPTION OF OCCURRENCE:**

At approximately 2300 hours, October 20, 1984, during Unit startup operations, while in the process of shifting from Auxiliary Feedwater [BA] to Main Feedwater [SJ], 11, 12 and 13BF13 Valves (Steam Generator Feedwater Regulation Valve Isolation Valves) closed; 14BF13 Valve did not close. There was apparently a partial feedwater isolation signal, although no other valves were affected, and there were no plant conditions which warranted an actuation. 14BF13 was closed and all valves were verified to be on the shut limit. When initial testing and investigations did not reveal the cause, Technical Specification Action Statement 3.3.2.1.b was entered at 0200 hours, October 21, 1984, and the Unit was placed in Mode 3 at 0317 hours.

**APPARENT CAUSE OF OCCURRENCE:**

Extensive testing could not conclusively determine the cause of the partial actuation of the feedwater isolation. The occurrence was attributed to a spurious, non-repeatable signal.

**ANALYSIS OF OCCURRENCE:**

The operability of the Engineered Safety Features (ESF) instrumentation systems and interlocks ensure that 1) the associated ESF action will be initiated when the parameter monitored by each channel or combination thereof exceeds its setpoint, 2) the specified coincidence logic is maintained, 3) sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance, and 4) sufficient system functional capability is available for ESF purposes from diverse parameters.

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**ANALYSIS OF OCCURRENCE: (cont'd)**

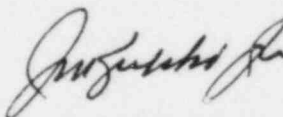
The operability of these systems is required to provide the overall reliability, redundancy and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the accident analyses.

At the time of the occurrence, reactor power level was low enough so the Auxiliary Feedwater System was able to maintain steam generator levels within specification. Had this event occurred at a higher power level, a reactor trip would most likely have resulted due to decreasing steam generator water level.

When this event occurred, immediate action was taken to ensure that the isolation valves were conservatively on their shut limit. When initial investigations revealed no cause, the appropriate Technical Specification Action Statement was entered and the Unit was placed in hot standby in accordance with the action requirement. This occurrence involved no undue risk to the health or safety of the public; however, due to the completion of a Unit shutdown which is required by the Technical Specifications, the event is reportable in accordance with the Code of Federal Regulations, 10CFR 50.73(a)(2)(i)(A).

**CORRECTIVE ACTION:**

On October 21, 1984, a visicorder was connected to the twenty-eight (28) volt control circuits of 11 through 14BF13 Valves, and remained connected until October 23, 1984. Complete testing was performed to verify operability of the feedwater isolation function. Although some spikes were observed in the control circuits at different periods during testing, these spikes were not sufficient to cause valve actuations, and the problem could not be duplicated. Feedwater isolation functioned as designed. This inadvertent partial actuation has not been previously or subsequently experienced.

  
General Manager-  
Salem Operations

JLR:tns

SORC Mtg 84-155



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

Salem Generating Station

November 16, 1984

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

Dear Sir:

SALEM GENERATING STATION  
LICENSE NO. DPR-70  
DOCKET NO. 50-272  
UNIT NO. 1  
LICENSEE EVENT REPORT 84-024-00

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

Sincerely yours,

J. M. Zupko, Jr.  
General Manager -  
Salem Operations

JR:k11

CC: Distribution

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