

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Salem Generating Station - Unit 2										DOCKET NUMBER (2) 0 5 0 0 0 3 1 1 1 OF 04				PAGE (3) 1 OF 04								
TITLE (4) Residual Heat Removal System - Loss of Flow																						
EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (9)												
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES				DOCKET NUMBER(S)									
0	2	0	9	8	48	4	0	0	2	0	0	0	3	0	98	4	0	5	0	0	0	0
OPERATING MODE (8)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)																				
5		20.402(b)				20.406(c)				50.73(a)(2)(iv)				73.71(b)								
POWER LEVEL (10)		20.406(a)(1)(i)				50.36(c)(1)				X 50.73(a)(2)(v)				73.71(c)								
990		20.406(a)(1)(ii)				50.36(c)(2)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)								
		20.406(a)(1)(iii)				50.73(a)(2)(i)				50.73(a)(2)(viii)(A)												
		20.406(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)												
		20.406(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 7 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 February 9, 1984, during a maintenance shutdown, Residual Heat Removal common suction valve (2RH1) inadvertently shut while testing was being performed on the Pressurizer Overpressure Protection System. This resulted in a loss of RHR flow through the Reactor Coolant System. The breakers for the RHR common suction valves were not tagged, as required, prior to POPS testing. The controls for these valves, located on the control room console, contained red bezel covers, which indicated that the valves already contained Shift Supervisor tags for a previous job. Since the tags were not required for personnel safety, POPS testing was authorized with the use of the existing tags. Unknown to the Shift Supervisor, these tags had been temporarily released, and the red bezel covers had not been removed. Technical Specifications allow RHR to be removed from service for up to two hours, provided there are no operations which would result in a reduction of Reactor Coolant System boron concentration. RHR flow was reestablished within seventeen minutes. A system will be established for updating the status of the control room console bezel covers, whenever tagging releases or requests are initiated. This occurrence involved no undue risk to the health or safety of the public. This event is reportable in accordance with 10CFR50.73(a)(2)(v).

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**PLANT AND SYSTEM IDENTIFICATION:**

Westinghouse - Pressurized Water Reactor

Energy Industry Identification System (EIIS) codes are indentified in the text as [XX].

**IDENTIFICATION OF OCCURRENCE:**

Reactor Coolant System (AB) - Residual Heat Removal System [BP] - Loss of Flow

Event Date: 02/09/84

Report Date: 03/09/84

This report was initiated by Incident Report No. 84-029

**CONDITIONS PRIOR TO OCCURRENCE:**

Mode 5 - Rx Power 000 % - Unit Load 0000 MWe

**DESCRIPTION OF OCCURRENCE:**

On February 9, 1984, during a maintenance shutdown, testing of the Pressurizer Overpressure Protection System (POPS) was in progress. At 1113 hours, Residual Heat Removal (RHR) [BP] common suction valve (2RH1) closed. This resulted in a loss of RHR flow through the Reactor Coolant System (RCS) [AB]. No. 21 RHR Pump was secured, and Technical Specification Action Statement 3.4.1.4.b was entered at this time. 2RH1 was reopened and its 230 volt breaker was opened and tagged. The pump was returned to service, and RHR flow was reestablished. Technical Specification Action Statement 3.4.1.4.b was terminated at 1130 hours. The Commission was notified at 1400 hours, within the four (4) hour requirement, in accordance with the 10CFR 50.72(b)(2)(iii)(B).

**APPARENT CAUSE OF OCCURRENCE:**

The breakers for the RHR common suction valves are required to be opened and tagged, in accordance with the POPS testing procedure, to prevent 2RH1 or 2RH2 from closing during the testing prccess. The controls for these valves, on the control room console, contained red bezel covers, which indicated that the valves already contained Shift Supervisor tags for a previous job. Since the tags are not required for personnel safety, the POPS testing was authorized with the use of the existing tags. Unknown to the Shift Supervisor, the tags had been temporarily released, and the bezel covers had not been removed to reflect the release. Upon testing, 2RH1 closed upon a control signal from the RCS Wide Range Pressure Transmitter.

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**ANALYSIS OF OCCURRENCE:**

The operability of the RHR loops is required to provide the capability for the removal of decay heat. A single loop provides sufficient heat removal capability; single failure considerations require that two loops be operable. A single RHR pump will also provide adequate flow to ensure mixing, prevent stratification and produce gradual reactivity changes during RCS boron concentration reductions. Technical Specification 3.4.1.4 requires two (2) RHR loops to be operable and at least one (1) RHR loop to be in operation while the unit is in mode 5.

Action Requirement 3.4.1.4.b. states:

With no RHR loop in operation, suspend all operations involving a reduction in boron concentration of the RCS and immediately initiate corrective action to return the required RHR loop to operation.

The closure of 2RH1 resulted in a loss of RHR shutdown cooling. Technical Specification 3.4.1.4 allows all RHR to be removed from service for up to two (2) hours, provided there are no operations which would result in a reduction of RCS boron concentration and, provided that core outlet temperature is maintained at least ten degrees below saturation, as indicated by the core exit thermocouples. In this instance, RHR flow was reestablished within seventeen (17) minutes, well within the prescribed time constraints. Had conditions arisen which would have prevented the restoration of RHR cooling, RCS temperature would have increased to the point where the steam generators would begin removing heat. At this point, RCS temperatures would stabilize and could be maintained indefinitely by utilizing the steam generators as a heat sink. During this event, the RCS was partially drained, although the level was maintained three (3) feet above the center-line of the RCS loops. The steam generators were filled to approximately ninety (90) percent by Narrow Range indication; the Technical Specifications require a minimum of five (5) percent. EI-I-4.22 (Loss of RHR Shutdown Cooling) directs that the RCS be filled and vented in preparation for establishing natural circulation or RCP operation. Venting would not have been required, since the RCS had not been drained to a level which would have drained the RCS loops or the steam generator tubes; therefore, the steam generators were available as a heat sink. Had this event occurred during refueling, or other operations when the steam generators are not available, sufficient direction is contained in EI-I-4.22 to maintain the plant in a safe condition. This occurrence involved no undue risk to the health or



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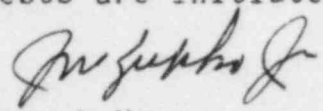
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ANALYSIS OF OCCURRENCE: (cont'd)

safety of the public. Because the event could have prevented the fulfillment of the safety function of the RHR System, the occurrence is reportable in accordance with the Code of Federal Regulations, 10CFR 50.73(a)(2)(v).

CORRECTIVE ACTION:

As a result of this occurrence, a system will be established for updating the status of the control room console bezel covers, whenever tagging releases or requests are initiated.

  
General Manager-  
Salem Operations

JLR:tns

SORC Mtg 84-026



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

Salem Generating Station

March 9, 1984

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 84-002-00

This Licensee Event Report is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(v). This report is required within thirty (30) days of discovery.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "J. M. Zupko, Jr.", is written above the typed name.

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

JR:k11 *7/87*

CC: Distribution

*IE22*  
*1/1*

The Energy People