

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Salem Generating Station - Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 2 7 2										PAGE 13 1 OF 0 4																		
TITLE (4) Containment Isolation Valve 1CC131 Inoperable (Unit Shutdown)																																						
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					
1 0			1 4			8 4			8 4			0 2 1			0 0			1 1			1 3			8 4									0 5 0 0 0					
OPERATING MODE (9) 2						THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																																
POWER LEVEL (10) 0 0 0						20.402(b)						20.408(e)						50.73(a)(2)(iv)						73.71(b)														
						20.408(a)(1)(i)						50.38(e)(1)						50.73(a)(2)(v)						73.71(e)														
						20.408(a)(1)(ii)						50.38(e)(2)						50.73(a)(2)(vi)						OTHER (Specify in Abstract below and in Text, NRC Form 366A)														
						20.408(a)(1)(iii)						X 50.73(a)(2)(i)						50.73(a)(2)(vii)(A)																				
						20.408(a)(1)(iv)						50.73(a)(2)(ii)						50.73(a)(2)(viii)(B)																				
20.408(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																												
B	C	C	M	O		L	2	0	0	Y																												
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)						MONTH				DAY				YEAR												
X YES (If yes, complete EXPECTED SUBMISSION DATE)												NO						0 3						0 1				8 5										

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

On October 14, 1984, during a reactor startup, 1CC131 (the component cooling water Return Isolation Control Valve from the reactor coolant pump thermal barriers) closed. 1CC131, is designed to close upon a high flow condition in the event of a thermal barrier failure; however, this was an inadvertent closure resulting from a pressure transient induced by the flexing of the Component Cooling Water Heat Exchanger plates when a service water pump was started. Upon an opening attempt, the "open" light was not received. The motor apparently did not de-energize following the opening attempt, resulting in excessive current draw and motor failure. 1CC131 was declared inoperable and Technical Specification Action Statement 3.6.3.1.d was entered. The redundant isolation valve (1CC190) was maintained in an operable status and the Unit was placed in hot standby. 1CC131 was repaired, tested and returned to an operable status. An engineering review of the heat exchanger flexing plate phenomena will be conducted, with appropriate action to be taken based on the results of the review. 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 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:

Containment Isolation Valve 1CC131 Inoperable (Unit Shutdown)

Event Date: 10/14/84

Report Date: 11/13/84

This report was initiated by Incident Report No. 84-159

### CONDITIONS PRIOR TO OCCURRENCE:

Mode 2 - Rx Power 000 % - Unit Load 0000 MWe

### DESCRIPTION OF OCCURRENCE:

On October 14, 1984, a reactor startup was in progress, with the Unit in Mode 2 and reactor power level at  $10^{-8}$  amps. At 1050 hours, upon starting a service water pump, Component Cooling Water System [CC] Valve 1CC131 (Return Isolation Control Valve from the reactor coolant pump thermal barriers) closed. The control room operator initiated an open signal to the valve; however, the valve "open" light was not received. Upon investigation, smoke was found to be issuing from the circuit breaker for 1CC131 motor operator. Containment isolation valve 1CC131 was declared inoperable and Technical Specification Action Statement 3.6.3.1.d was entered at 1050 hours. The redundant isolation valve in the reactor coolant pump thermal barrier return line (1CC190) remained in an operable status.

In compliance with the action requirement the Unit was placed in hot standby (Mode 3) at 1600 hours. At 1630 hours, in accordance with the requirements of the Code of Federal Regulations, 10CFR 50.72(b)(1)(i)(A), the Nuclear Regulatory Commission was notified of the shutdown.

### APPARENT CAUSE OF OCCURRENCE:

1CC131 is designed to close upon a high flow condition, in the event of a reactor coolant pump thermal barrier failure. Experience has shown that starting service water pumps creates a momentary pressure transient on the component cooling water side of the component cooling water heat exchanger (caused by natural flexing of the heat exchanger plates). In this instance, the pressure transient resulted in the closure of 1CC131.

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**APPARENT CAUSE OF OCCURRENCE: (cont'd)**

Investigation revealed that the motor for LCC131 limitorque operator had failed and the motor overloads were overheated. When an attempt was made to open LCC131, the motor on the limitorque operator apparently did not de-energize. The increased torque resulted in excessive current draw by the motor. By design, the thermal overload contacts in the motor circuit breaker control circuit are jumpered to increase valve reliability in the event that this containment isolation valve is called upon to operate. Therefore, the overcurrent condition did not de-energize the motor, resulting in overheating and failure.

**ANALYSIS OF OCCURRENCE:**

Technical Specification Action Statement 3.6.3.1.d states:

With one or more isolation valve(s) specified in Table 3.6-1 inoperable, maintain at least one isolation valve operable in each affected penetration that is open, and be in at least hot standby within the next six (6) hours and in cold shutdown within the following thirty (30) hours.

As previously stated, the redundant isolation valve in the reactor coolant pump thermal barrier component cooling water return line remained in an operable status, and the Unit was placed in hot standby within the six (6) hour requirement. The occurrence therefore involved no undue risk to the health or safety of the public. Due to the completion of a Unit shutdown that 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:**

The motor and the motor overloads for LCC131 were replaced. In addition, due to a broken arm on a tripper lever in the limitorque operator, the tripper bar and the tripper levers were replaced. The limit switches were adjusted, and the valve was stroke tested with satisfactory results. LCC131 was declared operable and Technical Specification Action Statement 3.6.3.1.d was terminated at 2150 hours, October 14, 1984.

Operating Procedures OP-II-7.3.2 (Component Cooling Water System Normal Operation) and OP-V-1.3.1 (Service Water System Normal Operation) will be reviewed for the possible inclusion of precautions/cautions to alert operators to the possibility of a LCC131 closure during component cooling water pump shifts and/or service water pump starts.

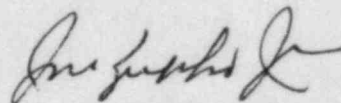


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CORRECTIVE ACTION: (cont'd)

In addition, an engineering review of the plate-type component cooling water heat exchanger design will be performed for possible modifications to minimize the flexing plate phenomena and preclude recurrence of LCC131 closure. Based on the results of the review, appropriate action will be taken and a supplemental report will be issued.



General Manager-  
Salem Operations

JLR:tns

SORC Mtg 84-148



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

Salem Generating Station

November 13, 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 84-021-00

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