

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Salem Generating Station - Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 3 1 1 1	PAGE (3) 1 OF 0 4
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TITLE (4) Loss of RHR Injection Capability to Two Cold Legs Due to Technical Specification Misinterpretation

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)																																																																																						
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<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">OPERATING MODE (9)</td> <td colspan="10">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8: (Check one or more of the following) (11)</td> </tr> <tr> <td>POWER LEVEL (10) 0 9 5</td> <td>20.402(b)</td> <td>20.406(e)</td> <td>90.73(a)(2)(iv)</td> <td>73.71(b)</td> <td colspan="8"></td> </tr> <tr> <td></td> <td>20.406(a)(1)(i)</td> <td>90.38(e)(1)</td> <td>90.73(a)(2)(v)</td> <td>73.71(e)</td> <td colspan="8"></td> </tr> <tr> <td></td> <td>20.406(a)(1)(ii)</td> <td>90.38(e)(2)</td> <td>90.73(a)(2)(vi)</td> <td>OTHER (Specify in Abstract below and in Text, NRC Form 366A)</td> <td colspan="8"></td> </tr> <tr> <td></td> <td>20.406(a)(1)(iii)</td> <td>90.73(a)(2)(i)</td> <td>90.73(a)(2)(vii)(A)</td> <td colspan="8"></td> </tr> <tr> <td></td> <td>20.406(a)(1)(iv)</td> <td>X 90.73(a)(2)(ii)</td> <td>90.73(a)(2)(vii)(B)</td> <td colspan="8"></td> </tr> <tr> <td></td> <td>20.406(a)(1)(v)</td> <td>90.73(a)(2)(iii)</td> <td>90.73(a)(2)(ix)</td> <td colspan="8"></td> </tr> </table>												OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8: (Check one or more of the following) (11)										POWER LEVEL (10) 0 9 5	20.402(b)	20.406(e)	90.73(a)(2)(iv)	73.71(b)										20.406(a)(1)(i)	90.38(e)(1)	90.73(a)(2)(v)	73.71(e)										20.406(a)(1)(ii)	90.38(e)(2)	90.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)										20.406(a)(1)(iii)	90.73(a)(2)(i)	90.73(a)(2)(vii)(A)										20.406(a)(1)(iv)	X 90.73(a)(2)(ii)	90.73(a)(2)(vii)(B)										20.406(a)(1)(v)	90.73(a)(2)(iii)	90.73(a)(2)(ix)								
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LICENSEE CONTACT FOR THIS LER (12)

NAME R. K. Heller - LER Coordinator	TELEPHONE NUMBER AREA CODE: 6 0 9 9 3 5 - 3 0 7 8
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15) MONTH:    DAY:    YEAR:
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On January 12, 1987, No. 22 Residual Heat Removal (RHR) Pump and the piping associated with the injection path to two Reactor Coolant System cold legs was tagged for preventive maintenance. On January 13, 1987, IE Notice 87-01 was reviewed by the station and it was realized that the RHR System alignment was in the condition described in the IE Notice. A Unit shutdown was commenced and the RHR system alignment was corrected. The "root cause" was determined to be an inadequacy in the Technical Specifications. The Technical Specifications did not clearly require that injection capability to all four loops be maintained. A directive with a proper interpretation of the Technical Specifications was issued to all Licensed Operators and the surveillance procedure will be revised to reflect the injection requirements. A request for changes to the Valve Surveillance Testing Program is being formulated to prevent future occurrences. The Training Center will be requested to make appropriate changes to their ECCS training.

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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:

LOSS OF RHR INJECTION CAPABILITY TO TWO COLD LEGS DUE TO TECHNICAL SPECIFICATION MISINTERPRETATION

Event Date: 01/13/87

Report Date: 02/12/87

This report was initiated by Incident Report No. 87-013

CONDITIONS PRIOR TO OCCURRENCE:

Mode 1 Reactor Power 95% - Unit Load 1060 MWe

DESCRIPTION OF OCCURRENCE:

On January 12, 1987, at 2342 hours, the Operations Department tagged No. 22 Residual Heat Removal (RHR){BP} Pump which also included the piping associated with the injection path to Nos. 22 and 24 Reactor Coolant System (RCS){AB} cold legs for preventive maintenance. Technical Specification 3.5.2.d Action "a" was entered.

On January 13, 1987, when IE Notice 87-01 was reviewed by Salem Station, it was realized that the RHR system alignment associated with the tagging on No. 22 RHR Pump placed the system in the condition addressed in the Notice. At 1733 hours, Technical Specification 3.0.3 was entered and a Unit 2 shutdown was commenced. At 2040 hours, the Maintenance Department returned Valves 22RH19 (RHR train cross connect valve) and 22SJ49 (cold leg injection isolation valve) to the Operations Department. The valves were tested and Technical Specification 3.0.3 was terminated.

APPARENT CAUSE OF OCCURRENCE:

The "root cause" of this occurrence has been determined to be an inadequacy in the Technical Specifications, in that the specifications did not clearly reflect the necessity to maintain four cold leg injection points from each RHR pump. In addition, the Updated Final Safety Analysis (UFSAR) does not clearly reflect this requirement.

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ANALYSIS OF OCCURRENCE:

Technical Specification Limiting Condition for Operation Action Requirement "a" States:

"With one ECCS subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next twelve hours."

Previously, it has been the interpretation of the Operations Department that each RHR pump had an associated flowpath that would allow one loop of RHR to be removed and still be able to comply with the Action Requirements of Limiting Condition for Operation 3.5.2. Upon review of IE Notice 87-01, it was realized that isolation of No. 22 RHR loop resulted in an unacceptable configuration. Although the design basis for the Emergency Core Cooling System (ECCS) {BP} assumes that four cold leg injection points are available, this assumption is not clearly reflected in either the UFSAR or the Technical Specifications.

Appropriate operator actions are contained in the Emergency Operating Procedures (EOP)s to address the required line-ups to assure that adequate flow is provided to the charging {CB} and safety injection {BQ} pump suction, and to the Containment Spray Header {BE} in the event of an RHR pump not being available during the recirculation phase following a LOCA.

Subsequently, an investigation was conducted to determine if this misalignment has previously occurred. A review of the computerized Tagging Request Inquiry System (TRIS) for the past twelve months indicated that the RHR system valves have previously been mispositioned during tagging operations for maintenance. In addition, surveillance testing performed to meet the requirements of Technical Specification 4.0.5, and Pressure Boundary Check Valve Testing, has resulted in the RHR valves being mispositioned for short periods of time.

As noted earlier, Technical Specification Limiting Condition for Operation 3.5.2 does not clearly state that each RHR pump must be capable of supplying all four RCS cold legs. Though Technical Specification Surveillance Requirement 4.5.2 states that both SJ49 valves must be open for each ECCS subsystem, it does not address the position of the RH19 valves.

Operations Procedure SP(O)4.5.3.1 verifies ECCS subsystem valve alignment for entering Mode 4. This procedure only required one of the SJ49 valves to be verified open. The procedure did not verify the RH19 valves to be open as part of the alignment.

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ANALYSIS OF OCCURRENCE: (cont'd)

Based on this, it can be surmised that in the past, the Salem Units may have been in Mode 4 in a degraded valve alignment because all four valves were not specifically verified in the open position. The procedure has since been revised to require the RH19s and SJ49s to be opened prior to changing from Mode 5 to Mode 4.

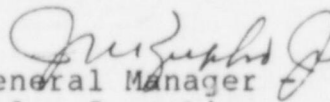
CORRECTIVE ACTION:

Upon realization that the Unit was in a similar condition as that described in IE Notice 87-01, Limiting Condition for Operation 3.0.3 was entered and a unit shutdown commenced. Injection capability to all four RCS cold legs was restored as soon as possible.

An Operations Department Information Directive was issued to all Licensed Operators which contained a copy of IE Notice 87-01 for their review. Also included was an interpretation of Technical Specifications 3.5.2e and 3.5.3d. The interpretation defines what is required for an operable flow path of the RHR system. In addition, Surveillance Procedure SP(O)4.5.3.1 was changed to reflect the requirement that both RH19s and both SJ49s must be opened prior to changing from Mode 5 to Mode 4. Furthermore, a request for changes to the Valve Testing Surveillance Program is being formulated for submittal to the NRC. This submittal will address testing of ECCS flowpath valves.

We have been in contact with the NSSS Supplier regarding this occurrence to discuss the issues involved and the experience of other plants. Any proposals resulting from these discussions will be reviewed for their applicability to Salem.

The Nuclear Training Department will be requested to revise their ECCS training to define an operable RHR System to be each pump with injection capability to four loops.

  
General Manager  
Salem Operations

RKH:pc

SORC Mtg. 87-010



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

Salem Generating Station

February 12, 1987

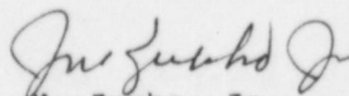
U. S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

Dear Sir:

SALEM GENERATING STATION  
LICENSE NO. DPR-75  
DOCKET NO. 50-311  
UNIT NO. 2  
LICENSEE EVENT REPORT 87-001-00

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

Sincerely yours,

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

RKH:pc

Distribution

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