



**PSEG**

Public Service Electric and Gas Company P.O. Box 236 Hancocks Bridge, New Jersey 08038-0236  
Nuclear Business Unit

**AUG 13 1998**

LR-N980396

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

**LER 272/98-012-00  
SALEM GENERATING STATION - UNIT 2  
FACILITY OPERATING LICENSE NO. DPR-70  
DOCKET NO. 50-272**

Gentlemen:

This Licensee Event Report entitled "Potential to Exceed the Rating of Piping due to Isolation of an Overpressure Protection" is being submitted pursuant to the requirements of the Code of Federal Regulations \*\*\*\*10CFR50.73 (a)(2)(ii)\*\*\*\*.

Sincerely,

A. C. Bakken III  
General Manager  
Salem Operations

22/

Attachment

PJD/

C Distribution  
LER File 3.7

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PDR ADOCK 05000272  
S PDR

The power is in your hands.

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

**LICENSEE EVENT REPORT (LER)**

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1) <p style="text-align: center;">SALEM UNIT 1</p>	DOCKET NUMBER (2) <p style="text-align: center;">05000272</p>	PAGE (3) <p style="text-align: center;">1 OF 4</p>
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TITLE (4)  
**POTENTIAL TO EXCEED THE RATING OF PIPING DUE TO ISOLATION OF AN OVERPRESSURE PROTECTION LINE.**

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 NAME	DOCKET NUMBER
07	15	98	98	-012	- 00	08	13	98	FACILITY NAME	DOCKET NUMBER
									FACILITY NAME	DOCKET NUMBER

<b>OPERATING</b>	1	<b>THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR *; (Check one or more) (11)</b>								
		20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)		
<b>POWER LEVEL (10)</b>	100%	20.2203(a)(1)		20.2203(a)(3)(i)		X	50.73(a)(2)(ii)		50.73(a)(2)(x)	
		20.2203(a)(2)(i)		20.2203(a)(3)(ii)			50.73(a)(2)(iii)		73.71	
		20.2203(a)(2)(ii)		20.2203(a)(4)			50.73(a)(2)(iv)		OTHER	
		20.2203(a)(2)(iii)		50.36(c)(1)			50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A	
		20.2203(a)(2)(iv)		50.36(c)(2)			50.73(a)(2)(vii)			

LICENSEE CONTACT FOR THIS LER (12)	
NAME Philip J. Duca Jr. , Salem Licensing Engineer	TELEPHONE NUMBER (Include Area Code) <p style="text-align: center;">(609) 339-2381</p>

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED		
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

**ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)**

On July 15, 1998, while Unit 1 was in mode 1, the 13 Containment Fan Coil Unit (CFCU) was taken out of service in preparation for scheduled corrective maintenance on 13SW57, the 13 CFCU service water air operated inlet valve. The isolation configuration effectively eliminated the associated overpressure relief path from the piping being removed from service. There was no overpressure protection for the service water piping once the manual isolation valves were shut. This condition lasted for a period of hours, until the vent and draining process started. During this period, an accident could have compromised containment due to overpressurization of the service water system. The apparent cause of this event was inadequate procedural guidance, specifically information included in a design change package was not included in an associated operations procedure revision. There were no safety consequences to the health and safety of the public since no overpressure condition occurred during the event. This event is reportable pursuant to 10CFR50.73(a)(2)(ii) "any event or condition.....that resulted in the nuclear power plant being:..... (B) in a condition that was outside the design basis of the plant".

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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

PLANT AND SYSTEM IDENTIFICATION

Westinghouse - Pressurized Water Reactor

Containment Fan Cooling System/Pipe {BK/PSP}\*

\* Energy Industry Identification System {EIIS} codes and component function identifier codes appear as (SS/CCC)

CONDITIONS PRIOR TO OCCURRENCE

At the time of identification, Salem Unit 1 was operating at 100% Power.

DESCRIPTION OF OCCURRENCE

On July 15, 1998, while Unit 1 was in mode 1, the 13 Containment Fan Coil Unit (CFCU) was taken out of service in preparation for scheduled corrective maintenance on 13SW57, the 13 CFCU service water air operated inlet valve. All ten CFCUs (5 for each Salem Unit) have overpressure relief paths to protect the fan coil unit piping from overpressure conditions. The overpressure relief paths are shown on USFAR Figures 9.2-1A and 9.2-1B (Sheet 6 of 6). This design basis requirement is documented in the NRC Safety Evaluation Report provided as an attachment to Amendment Nos. 196 and 176 to Unit 1 and 2 Facility Operating Licenses respectively. Nine of the ten CFCU's have the discharge side of their overpressure relief path outside their manual isolation valve (SW76). The exception is the 13 CFCU. The discharge point of its overpressure relief path is inside 11SW78 and 12SW78 valves, the manually operated gate valves used to isolate the 13 CFCU service water return line.

The isolation and draining of the CFCU was being performed in accordance with the procedure for service water system operation, S1.OP-SO.SW-0005(Q). Section 3.12 of this procedure provides a precaution against using the remote air operated boundary valves, the SW58's and SW72's, for isolation boundaries in modes 1 - 4 unless there is a leak requiring immediate isolation of the associated CFCU. Using these valves would separate any CFCU from its associated overpressure relief path (SW646) which eliminates the CFCU overpressure protection. All of the CFCU's (including Unit 2) have their overpressure relief taps outside of the boundary of SW58's and SW72's. Since the overpressure relief discharge for the 13 CFCU is within the manual isolation valves (11/12SW78), the effect is the same as the warning in step 3.12. Therefore, there is no overpressure protection.

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for the service water portion of the 13 CFCU once the manual isolation valves are shut, until the vent and draining process starts.

When the 13CFCU was first isolated on July 15th, it was approximately ten hours before the service water header was vented. During this period an accident could have compromised containment due to overpressurization of the service water system. The delay resulted when the control room shift turned over to the oncoming shift and the new shift completed a pre-evolution brief and assembled the necessary pumps and hoses required to perform the drain down. The exact time duration could not be established but it is estimated to have been approximately ten hours. Consequently for this period of time the CFCU piping was without overpressure protection, a condition outside the design basis for the plant.

CAUSE OF OCCURRENCE

The apparent cause of this event was inadequate procedural guidance contained in the current revision of the service water system operation procedure, S1.OP-SO.SW-0005(Q). The comments added by revision 8, dated November 25, 1997, to support the mechanical system changes which added the overpressure protection, made by Design Change Package (DCP) 1EC-3668, package 19, do not contain sufficient detail to make the operators aware of the potential overpressure condition created within the 13 CFCU when the manual isolation valves (11SW78 and 12SW78) are shut as directed.

The procedure writer failed to fully incorporate the guidance provided in the DCP. The possibility of overpressure on the 13 CFCU service water header was addressed in the 10CFR50.59 safety evaluation prepared to support the DCP. It was also addressed in the design analysis with procedural changes recommended by change document CD P504, 506 & 510.

PRIOR SIMILAR OCCURRENCES

1996, 1997 and 1998 LERs were reviewed for similar occurrences.

LER 272/96-020-00 reported the Containment Fan Coil Units outside the plant design basis including thermal overpressure conditions. This condition resulted from a 1976 startup test modification that increased the time delay associated with the isolation of non-essential service water loads. As a result, design basis flows to the CFCUs could not be achieved during certain scenarios. Several causes were identified: failure of the design change to update the design basis or consider the impact on other analyses and design

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inputs; failure to recognize heat up of the CFCUs during fan coast down as input to the design; and failure to address the need to examine service water valve timing in the response time testing procedures.

SAFETY CONSEQUENCES AND IMPLICATIONS

There were no safety consequences to the health and safety of the public since no overpressure condition occurred during the short period when the CFCU piping was isolated but not yet drained.

CORRECTIVE ACTIONS

1. The 13 CFCU service water header was drained as soon as possible when the hazardous condition was realized.
2. The appropriate Operations Department procedures have been reviewed and revised.
3. The human performance issues identified in the development and review process for S1.OP-SO.SW-0005(Q), Rev. 8, have been discussed with the Procedure Writer Staff and the appropriate actions have been addressed and documented in accordance with company policy for the personnel involved.