

**PSE&G**

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

Salem Generating Station

February 22, 1983

*Eisenhart*

Mr. R. C. Haynes  
Regional Administrator  
USNRC  
Region 1  
631 Park Avenue  
King of Prussia, Pennsylvania 19406

Dear Mr. Haynes:

LICENSE NO. DPR-75  
DOCKET NO. 50-311  
REPORTABLE OCCURRENCE 83-005/03L

Pursuant to the requirements of Salem Generating Station Unit No. 2, Technical Specifications, Section 6.9.1.9.b, we are submitting Licensee Event Report for Reportable Occurrence 83-005/03L. This report is required within thirty (30) days of the occurrence.

Sincerely yours,

*H. J. Midura*

H. J. Midura  
General Manager -  
Salem Operations

RF:ks

*2/27*

CC: Distribution

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Report Number: 83-005/03L

Report Date: 02-17-83

Occurrence Date: 01-22-83

Facility: Salem Generating Station Unit 2  
Public Service Electric & Gas Company  
Hancock's Bridge, New Jersey 08038

IDENTIFICATION OF OCCURRENCE:

Reactor Coolant System - Pressurizer Overpressure Protection System - Inoperable.

This report was initiated by Incident Report 83-020.

CONDITIONS PRIOR TO OCCURRENCE:

Mode 4 - RX Power 0 % - Unit Load 0 MWe.

DESCRIPTION OF OCCURRENCE:

January 21, 1983, during the planned shutdown for refueling of Salem Unit 2, a cooldown of the Reactor Coolant System (RCS) was initiated. Due to leakage problems with the power operated relief valves (PORVs), Block Valves 2PR6 and 2PR7 had been closed since prior to unit startup in October, 1981 (See LER 81-59/03X-1). Isolation of the relief lines had rendered Pressurizer Overpressurization Protection System (POPS) Valves 2PR47 and 2PR48 inoperable.

In accordance with established procedure, the POPS would first be demonstrated operable then would be placed in operation when RCS temperature reached 312°F. A bubble would be maintained, and following degasification and further cooldown to 180°F, a cleanup of the RCS would be conducted utilizing Reactor Coolant Pumps and hydrogen peroxide addition. After completion of the cleanup, the pressurizer would be cooled down, the RCS taken solid and a vent established.

Attempts to demonstrate the operability of the POPS valves failed due to excessive leakage in the pressurizer relief lines. In view of the recurrent problems with the relief valves, and the resultant questionable status of the POPS, the cooldown was continued to place the plant in a vented, safe condition.

At 1130 hours, January 22, 1983, when the RCS temperature reached 312°F, Action Statement 3.4.10.3b was entered. The pressurizer relief line valves were cycled and resealed in attempts to reduce leakage and restore at least one POPS channel to an operable status. The attempts failed, however, and at 1930 hours, January 22, 1983, Action Statement 3.0.3 came into effect.

The cooldown was continued in orderly fashion, until 0423 hours, January 23, when the leakage on Valve 2PR47 was reduced to an acceptable level. The valve was declared operable, and with only one

DESCRIPTION OF OCCURRENCE: (cont'd)

POPS channel inoperable, Action Statement 3.4.10.3a applied. The cooldown was subsequently completed, and at 1242 hours, January 24, 1983, an RCS vent was established. A bubble in the pressurizer was maintained until one POPS valve was operable, and no RCS pressure transients were involved. The integrity of multiple fission product barriers was maintained throughout the occurrence.

APPARENT CAUSE OF OCCURRENCE:

POPS Valves 2PR47 and 2PR48 had been reworked due to excessive leakage during initial fueling of the unit in 1980 (See LER 80-05/03L). Valve 2PR47 had exhibited similar problems during shutdown operation in 1981 (See LER 81-43/03L). As noted, in October 1981, during the plant startup, the pressurizer relief lines had been isolated to stop leakage from the PORVs. Unit 2 was then operated at power until the current shutdown for refueling, when the problems with the POPS valves were re-encountered. Further investigation of the problems is pending disassembly of the valves, which is scheduled for the current refueling.

ANALYSIS OF OCCURRENCE:

The operability of two POPS valves or an RCS vent opening of greater than 3.14 square inches ensures that the RCS will be protected from pressure transients which could exceed the limits of 10 CFR 50 Appendix G when one or more RCS cold legs are less than or equal to 312°F. Either POPS has adequate relieving capability to protect the RCS from overpressurization resulting from events postulated to occur including starting an idle reactor coolant pump or a safety injection pump with a solid RCS.

Action Statement 3.4.10.3b requires:

With both POPS inoperable, depressurize and vent the RCS through a 3.14 square inch vent(s) within 8 hours.

As noted, due to plant conditions, the RCS vent could not be established within 8 hours as required, and Action Statement 3.0.3 applied. The action statement requires:

When a limiting condition for operation is not met except as provided in the associated action statements, within one hour action shall be initiated to place the unit in a mode in which the specification does not apply, by placing it, as applicable, in at least hot standby within the next 6 hours, hot shutdown within the following 6 hours, and cold shutdown within the subsequent 24 hours. Where corrective measures are completed that permit operation under the action requirements, the action may be taken in accordance with the specified time limits as measured from the time of the failure to meet the limiting condition for operation.

As mentioned, a plant cooldown was already in progress, and thus action was being taken to establish the required RCS vent within 24

hours, in compliance with the limiting condition for operation. With the restoration of one POPS channel to an operable status, Action Statement 3.4.10.3a came into effect requiring:

With one POPS inoperable, restore the inoperable POPS to operable status within 7 days or depressurize and vent the RCS through a 3.14 square inch vent(s) within the next 8 hours.

The POPS is designed to protect the integrity of the RCS Pressure Boundary, one of the multiple fission product boundaries required by 10 CFR 50 (others include the containment and cladding). As noted, the integrity of all fission product boundaries was maintained. For this reason, and since one operable channel was obtained and the vent was established within the intervals specified, no risk to the health and safety of the public was involved. The event constituted operation in a degraded mode permitted by a limiting condition for operation, and is reportable in accordance with Technical Specification 6.9.1.9b.

CORRECTIVE ACTION:

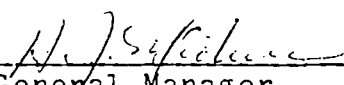
As stated, one POPS valve was returned to an operable status at 0423 hours, January 23, 1983, in compliance with Limiting Condition for Operation 3.0.3. The required RCS vent was subsequently established at 1242 hours, January 24, 1982, and Action Statement 3.4.10.3a was terminated. Corrective action is pending disassembly of the valves and determination of the failure mechanism. Further investigation of the problems by the Nuclear Engineering Department has been requested.

The occurrence illustrates a possible incompatibility between the 8 hour time interval required by Action Statement 3.4.10.3b and proceeding safely to establish the RCS vent. A review of the Technical Specifications will be performed to identify appropriate changes. A Supplemental Report will be submitted upon final resolution of the problems with POPS.

FAILURE DATA:

Marotta Scientific Controls  
Relief Valve  
Model MV-225C

Prepared By R. Frahm

  
General Manager -  
Salem Operations

SORC Meeting No. 83-019