



PSEG

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

Nuclear Business Unit

JUN - 1 1998

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

Gentlemen:

**LER 272/98-010-00
SALEM GENERATING STATION - UNIT 1
FACILITY OPERATING LICENSE NO. DPR-70
DOCKET NO. 50-272**

This Licensee Event Report entitled " Reactor Pressure Vessel Inspection Plugs out of configuration." is being submitted pursuant to the requirements of the Code of Federal Regulations 10CFR50.73(a)(2)(ii).

Sincerely,

*John P. Robertson
for A.C. Bakken III*

A. C. Bakken III
General Manager -
Salem Operations

Attachment

EHV

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LER File 3.7

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The power is in your hands.

LICENSEE EVENT REPORT (LER)

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

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND 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.

FACILITY NAME (1) SALEM GENERATING STATION UNIT 1		DOCKET NUMBER (2) 05000272	PAGE (3) 1 OF 4
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TITLE (4)
REACTOR PRESSURE VESSEL INSPECTION PLUGS OUT OF CONFIGURATION.

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
10	19	93	98	010	00	06	01	98	SALEM 2	05000311
									FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	3	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)								
		20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)					
POWER LEVEL (10)	0	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 E. H. Villar (Station Licensing Engineer)	TELEPHONE NUMBER (Include Area Code) 609 339 5456
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)		MONT	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	<input checked="" type="checkbox"/>	NO				H		

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

On April 3, 1998, with Salem Unit 1 in Mode 3, the system manager noted that some of the reactor pressure vessel nozzle inspection plugs were out of configuration during the pre-start up missile hazard inspection. Three of the inspection plugs (also known as sandboxes) were affected. These components serve as pressure relieving devices in the event of a large-break LOCA (i.e. failure of a reactor pressure vessel nozzle.) The as-found configuration of three of these nozzles was such that they might become a missile inside containment during an accident. Without these sandboxes properly secured, it is possible that in the event of a nozzle failure the sandboxes could become a missile previously unaccounted for in the analysis for a nozzle failure. The root cause of this event was not determined. However, the apparent cause of this condition is believed to be personnel (human) error. The inspection plugs were returned to their proper configuration, the Unit 2 plugs were verified properly secured.

This Licensee Event Report (LER) is being made in accordance with 10 CFR 50.73(a)(2)(ii).

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TEXT CONTINUATION

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SALEM GENERATING STATION UNIT 1	05000272	98	010	00	2 OF 4

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

PLANT IDENTIFICATION:

Salem Generating Station - Unit 1
Public Service Electric and Gas Company
Hancocks Bridge, New Jersey 08038

IDENTIFICATION OF OCCURRENCE:

Date of Occurrence: October 19, 1993
Date of Identification: May 5, 1998.
Report Date: June XX, 1998.

CONDITIONS PRIOR TO OCCURRENCE:

Salem Unit 1 - Mode 3 at the time of discovery.

DESCRIPTION OF OCCURRENCE:

On April 3, 1998, with Salem Unit 1 in Mode 3, the system manager noted that some of the reactor pressure vessel nozzle inspection plugs were out of configuration during the pre-start up missile hazard inspection. Three of the inspection plugs (also known as sandboxes) were affected. These components serve as pressure relieving devices in the event of a large-break LOCA (i.e. failure of a reactor pressure vessel nozzle.) The as-found configuration of three of these nozzles was such that they might become a missile inside containment during an accident.

At the time of identification, PSE&G believed that this condition resulted from the extensive work that had been performed during the unit prolonged (2.5 years) shutdown. However, on May 4, 1998, PSE&G determined that this configuration might have potentially existed while the Salem Unit 1 operated at power. Therefore, this event was conservatively reported under 10CFR50.72.b.2.i. and constitutes a reportable condition per 10CFR50.73.

There are eight reactor vessel nozzles in each of the Salem Units, and each nozzle has an access port through the cavity floor at the 104-foot elevation. These access ports are covered when the reactor cavity is flooded, but the covers are removed at all other times. Below each cover is a "sandbox", which is bolted to the foundation, and at the lower portion of each sandbox is a blowout plug.

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

DESCRIPTION OF OCCURRENCE (cont'd):

The purpose of these blowout plugs is to provide pressure relief in case of a failure of a reactor pressure vessel nozzle (UFSAR Section 3.8). Each plug is approximately 10 square feet in area and vents to the 104-foot elevation. The plug is designed to fail at approximately 900 pounds per square inch pressure. In this particular condition, one of the sandboxes was missing all of its bolting and the other one was missing some of them (approximately 20 bolts). Without these sandboxes properly secured, it is possible that in the event of a nozzle failure the sandboxes could become a missile previously unaccounted for in the analysis for a nozzle failure. Therefore, this event was reported under 10CFR50.72.b.2.i. and constitutes a reportable condition per 10CFR50.73.

CAUSE OF OCCURRENCE:

The root cause of this event was not determined. However, the apparent cause of this condition is believed to be personnel (human) error.

These access inspection ports are low maintenance items, and there is normally no reason to remove them. However, the sandboxes are removed during the periodic (10 year interval) inspection of the nozzles. For Salem Unit 1, this inspection took place during the 1R11 outage in 1993 under work order 930601187. This work order was taken to work complete on October 19, 1993.

A line item search (work order description) of the work order database did not reveal any work being performed since they were last removed for the ISI inspection. Therefore, the most probable cause of this event is associated with human performance issues, such as improper installation of these sandboxes following the 1993 ISI inspection.

PRIOR SIMILAR OCCURRENCES:

A review of the Salem LER database did not reveal any similar occurrence within the past two years.

SAFETY CONSEQUENCES AND IMPLICATIONS:

There were no safety consequences associated with this event.

The failure of a reactor pressure vessel nozzle is a limiting fault of improbable occurrence (Condition IV as defined in the Salem UFSAR). However, should this fault occur, a rapid pressure rise in these access ports will occur due to the nozzle failure.

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

SAFETY CONSEQUENCES AND IMPLICATIONS (cont'd):

The failure point of the blowout plugs is approximately 900 psig, and with a surface area of approximately 10 square feet without being properly restrained, there is considerable upward force on these plugs. Without the proper restraints, these plugs would become missiles, possibly impacting the control rod drive mechanisms (CRDM). The CRDM are the most likely target of these plugs.

However, the control rod drives are protected from missiles generated from an equipment failure (UFSAR Section 3.5.1.2). In addition, the rod control system is fail-safe; i.e. damage to the controls would not prevent the rods from falling. However, procedural guidance exists whenever one or more control rods fail to insert. Therefore, PSE&G believes that the safety implications of this condition were minimal.

CORRECTIVE ACTIONS:

1. The proper configuration was restored under work order 980403238 shortly after discovery. This was accomplished prior to entering Mode 2.
2. The Unit 2 sandboxes were verified properly installed.
3. The reactor reassembly procedure will be revised to ensure that the reactor vessel inspection ports are properly secured. This revision will be in place prior to the next refueling outage.