PSEG

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

Nuclear Business Unit

DEC 18 1995

LR-N95231

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

Gentlemen:

LICENSEE EVENT REPORT 272/95-012-000
SALEM GENERATING STATION - UNIT 1
FACILITY OPERATING LICENSE NO. DPR-70
DOCKET NO. 50-272

This Licensee Event Report entitled "Adequacy of Turbine Driven Auxiliary Feed Water Pump Enclosures" is being submitted pursuant to the requirements of the Code of Federal Regulations 10CFR50.73(a)(1).

Sincerely,

Clay C. Warren
General Manager -
Salem Operations

SORC Mtg. 95-149

Attachment

JHA/tcp

C Distribution
LER File

IE22
1/1

Attachment A

PSE&G Commitments for LER 272/95-012-000

The following items represent PSE&G commitments made to the Nuclear Regulatory Commission related to LER 272/95-012-000. The commitments are as follows:

Design change alternatives are under consideration to eliminate the potential for overpressurization of the TDAFP enclosure. The design change will be described in the LER supplement and will be implemented prior to restart of the units.

Other HELB calculations involving similar plant configurations will be reviewed to verify the correctness of the input assumptions. A schedule for completion of this review will be provided in the supplement to this LER.

Any additional corrective actions identified as a result of the continuing investigation into this occurence will be provided in the supplement.

NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

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

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Salem Generating Station - Unit 1	05000272	1 OF 3

TITLE (4)

Adequacy of Turbine Driven Auxiliary Feed Water Pump Enclosures

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
12	11	76	95	-- 012 --	000	12	18	95	Salem Generating Station - Unit 2	05000311
									FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	*
POWER LEVEL (10)	0

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)
	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	TELEPHONE NUMBER (Include Area Code)
Greg Cranston, Manager - Nuclear Engineering, Mechanical	609 - 339 - 1955

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)	MONTH	DAY	YEAR
X	YES (If yes, complete EXPECTED SUBMISSION DATE).	NO		02	15	96

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

In early November 1995 it was discovered that assumptions in the High Energy Line Break (HELB) analysis for the turbine driven auxiliary feed water pump (TDAFP) enclosure did not match as-built conditions and could allow pressure in the enclosure to exceed the enclosure design pressure during a HELB. A detailed analysis is being performed to determine the extent of the potential overpressurization and the affect on the structural integrity of the TDAFP enclosure. The cause of this occurrence is attributed to inadequate verification of assumptions in the calculations performed to evaluate previously identified as-built design deficiencies and inaccurate design drawings. Corrective actions include a review of other HELB calculation assumptions and evaluation of design changes to eliminate the potential TDAFP enclosure overpressure.

This condition is being reported in accordance with 10CFR50.73(a)(2)(ii). A four hour 10CFR50.72 notification was made on November 16, 1995.

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Salem Generating Station - Unit 1	05000272	95	-- 012	-- 000	2 OF 3

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

PLANT AND SYSTEM IDENTIFICATION

Westinghouse - Pressurized Water Reactor

Auxiliary Feedwater System (AF) {BA}*
Auxiliary Building Ventilation System (ABS) {VF}

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

IDENTIFICATION OF OCCURRENCE

Event Date: Unit 1: December 11, 1976 (Initial Plant Criticality)
Unit 2: August 2, 1980 (Initial Plant Criticality)

Date Determined to be Reportable: November 16, 1995

CONDITIONS PRIOR TO OCCURRENCE

Unit 1: Defueled, 0 % Reactor Power
Unit 2: Mode 5, 0 % Reactor Power

DESCRIPTION OF OCCURRENCE

In early November 1995 it was discovered that assumptions in the HELB analysis for the turbine driven auxiliary feed water pump (TDAFP) {BA/P} enclosure did not match as-built conditions and could potentially allow pressure in the enclosure to exceed the enclosure design pressure during a HELB.

The ABS 6 damper {VF/DMP} is located in the wall separating the TDAFP enclosure and the adjacent pipe chase. The ABS 6 damper automatically opens to protect the TDAFP enclosure from overpressurization during a HELB in the enclosure. The HELB analysis performed for a steam line break in the TDAFP enclosure implicitly assumed that the ABS 6 damper opened instantaneously when the pressure in the enclosure reached the setpoint. Significant delays actually exist between the pressure reaching the setpoint and the initiation of the opening stroke of ABS 6 damper, and the damper reaching the full open position. The analysis also implicitly assumed that the damper full open position provided 100 percent of the damper opening for pressure relief. In the full open position the damper is actually open only 45 degrees, limiting the area available to less than 100 percent. It has been determined that with these delays and the less than fully open damper, the peak pressure in the enclosure following a steam line break may exceed the design pressure of the TDAFP enclosure.

A detailed analysis is being performed to determine the extent of the potential overpressurization and the affect on the structural integrity of the TDAFP enclosure throughout the postulated HELB event.

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Salem Generating Station - Unit 1	05000272	95	-- 012 --	000	3 OF 3

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

SAFETY SIGNIFICANCE

While the detailed analysis to determine the affect on the integrity of the TDAFP enclosure is not yet complete, an assumed failure of the TDAFP enclosure resulting from overpressurization due to a steam line break would allow steam to escape to surrounding areas. The escaping steam has the potential to render equipment in the area, including the motor driven auxiliary feed water pumps, inoperable.

The supplement to this LER will provide a more detailed safety significance based on the results of the on-going structural analysis.

APPARENT CAUSE OF OCCURRENCE

The cause of this occurrence is attributed to inadequate verification of the unstated assumptions in the calculations performed to evaluate previously identified as-built design deficiencies. During that evaluation, the primary focus was on the deficiencies being evaluated and the input assumptions were not questioned. A contributing factor is that one of the design drawings erroneously shows the ABS6 damper as normally open.

PRIOR SIMILAR OCCURRENCES

Two prior similar occurrences involving unverified calculation assumptions have been identified within the past five years. The first, as reported in LER 272/91-036-01, concerned incorrect input assumptions in the steam line break analyses. The second, as reported in LER 272/95-027-00, concerned inaccurate assumptions in dose calculations. Corrective actions taken in response to these events could not have prevented the event reported here.

CORRECTIVE ACTIONS

Design change alternatives are under consideration to eliminate the potential for overpressurization of the TDAFP enclosure. The design change will be described in the LER supplement and will be implemented prior to restart of the units.

Other HELB calculations involving similar plant configurations will be reviewed to verify the correctness of the input assumptions. A schedule for completion of this review will be provided in the supplement to this LER.

Any additional corrective actions identified as a result of the continuing investigation into this occurrence will be provided in the supplement.