PSE&G

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

Salem Generating Station

May 25, 1984

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 84-011-00

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

Sincerely yours,

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

JR:kll

CC: Distribution

IE22
1/1

NRC Form 366 (9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Salem Generating Station - Unit 2	0 5 0 0 0 3 1 1	1 OF 0 4

TITLE (4): No. 23 Steam Generator Feedwater Flow-Channels 1 and 11 Inoperable

EVENT DATE (5) MONTH	DAY	YEAR	LER NUMBER (6) YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	REPORT DATE (7) MONTH	DAY	YEAR	OTHER FACILITIES INVOLVED (8) FACILITY NAMES	DOCKET NUMBER(S)
0 4	2 8	8 4	8 4	— 0 1 1 —	0 0	0 5	2 5	8 4		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9): 1
POWER LEVEL (10): 0 0 6

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check one or more of the following)* (11)

[ ] 20.402(b)	[ ] 20.405(c)	[ ] 50.73(a)(2)(iv)	[ ] 73.71(b)
[ ] 20.405(a)(1)(i)	[ ] 50.36(c)(1)	[ ] 50.73(a)(2)(v)	[ ] 73.71(c)
[ ] 20.405(a)(1)(ii)	[ ] 50.36(c)(2)	[ ] 50.73(a)(2)(vii)	[ ] OTHER *(Specify in Abstract below and in Text, NRC Form 366A)*
[ ] 20.405(a)(1)(iii)	[X] 50.73(a)(2)(i)	[ ] 50.73(a)(2)(viii)(A)	
[ ] 20.405(a)(1)(iv)	[ ] 50.73(a)(2)(ii)	[ ] 50.73(a)(2)(viii)(B)	
[ ] 20.405(a)(1)(v)	[ ] 50.73(a)(2)(iii)	[ ] 50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (AREA CODE)
J. L. Rupp	6 0 9 3 3 9 - 4 3 0 9

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
X	S J	N Z L	B 0 4 0	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

[ ] YES *(If yes, complete EXPECTED SUBMISSION DATE)* [X] NO

EXPECTED SUBMISSION DATE (15): MONTH | DAY | YEAR

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

On April 28, 1984, with reactor power level at six percent and the turbine not latched, testing was being performed on No. 23 Steam Generator Water Level Control System. This testing was the result of two reactor trips which occurred due to high-high level in No. 23 Steam Generator. The events surrounding those reactor trips are documented in LER 84-010-00. Test results revealed that No. 23 Steam Generator Feedwater Flow indication channels were not responding. Both channels were declared inoperable and Technical Specification Limiting Condition For Operation 3.0.3 was entered. In accordance with the Action Requirements, a unit shutdown was performed within one hour. Radiography of No. 23 Steam Generator Feedwater Flow Nozzle revealed that the nozzle had moved approximately twenty-four inches from its designed location; apparently as a result of a previous feedwater water hammer event. No. 23 Feedwater Flow Nozzle was replaced, and the feed flow transmitters were calibrated. The Steam Generator Feedwater Level Control System functioned as designed during the subsequent startup on May 5, 1984. This event involved no undue risk to the health or safety of the public. Due to a unit shutdown, which is required by the Technical Specifications, the event is reportable in accordance with 10CFR 50.73(a)(2)(i)(A).

PLANT AND SYSTEM IDENTIFICATION:

Westinghouse - Pressurized Water Reactor

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

IDENTIFICATION OF OCCURRENCE:

No. 23 Steam Generator Feedwater Flow - Channels I and II - Inoperable

Event Date: 04/28/84

Report Date: 05/25/84

This report was initiated by Incident Report No. 84-062

CONDITIONS PRIOR TO OCCURRENCE:

Mode 1 - Rx Power 006 % - Unit Load 0000 MWe

DESCRIPTION OF OCCURRENCE:

On April 28, 1984, a unit startup was performed. Reactor power was held at six percent (6%) while performing testing on No. 23 Steam Generator Feedwater Level Control System [JB]. The testing was a result of two turbine/reactor trips, caused by high-high level in No. 23 Steam Generator, occurring on April 23 and April 27, 1984 (See LER 84-010-00). Test results revealed that No. 23 Steam Generator Feedwater Flow indication was not responding as required. Technical Specification Limiting Condition for Operation (L.C.O.) 3.3.1 requires at least one feedwater flow channel to be operable. At 2330 hours, No. 23 Steam Generator Feedwater Flow (Channels I and II) were declared inoperable, and Technical Specification L.C.O. 3.0.3 was entered.

L.C.O. 3.0.3 states:

> When a Limiting Condition for Operation is not met except as provided in the associated Action Requirements, within one hour action shall be initiated to place the unit in a mode in which the specification does not apply by placing it on hot-standby within the next six (6) hours.

At 0023 hours, April 29, 1984, the unit was placed in hot standby in accordance with the Technical Specification Requirements.

APPARENT CAUSE OF OCCURRENCE:

As a result of testing, it was determined that No. 23 Feedwater Flow Nozzle (which provides the pressure drop for flow measurements used for indication, level control and protection signals) was not functioning properly. Radiography results revealed that the nozzle was located approximately twenty-four inches (24") from its design location. The pins which hold the nozzle in place were apparently broken during a feedwater water hammer which occurred on April 6, 1984. That occurrence was due to the failure of 23BF22 (No. 23 Steam Generator Feedwater Stop Check Valve) to "check" closed against steam generator pressure, while performing surveillance testing on 23BF19 (No. 23 Steam Generator Feedwater Regulating Valve). The circumstances surrounding that event are fully documented in Engineering Evaluation S-2-F300-MEE-021.

ANALYSIS OF OCCURRENCE:

The feedwater flow channels provide an input to the Steam Flow/Feed Flow Mismatch (with concurrent low steam generator water level) Reactor Trip. With the feedwater flow channels inoperable, the reactor trip must be considered inoperable. The purpose of this reactor trip is to initiate a shutdown when conditions develop which may lead to a loss of the heat sink. By tripping the reactor prior to reaching the steam generator low-low level setpoint, the required starting time and capacity requirements for the Auxiliary Feed System [BA] are reduced, and the thermal transient on the steam generator and the Reactor Coolant System [AB] is minimized. Although this reactor trip was inoperable, the low-low steam generator level reactor trip was operational, and not affected by the feedwater flow nozzle inoperability.

In addition, the feedwater flow channels provide an input to the Steam Generator Water Level Contol System [JB]. With these channels inoperable, automatic control of the feed flow would not function. This was subsequently determined to be the cause of No. 23 Steam Generator level instability problems, and the two turbine/reactor trips which occurred on April 23, and April 27, 1984. This event involved no undue risk to the health or safety of the public. Because of the completion of a unit shutdown which is required by the Technical Specifications, the event is reportable in accordance with the Code of Federal Regulations, 10CFR 50.73(a)(2)(i)(A).

CORRECTIVE ACTION:

No. 23 Feedwater Flow Nozzle was replaced with No. 13 Feedwater Flow Nozzle (from Unit 1, which is presently in a refueling outage). The feed flow transmitters associated with No. 23 Steam Generator were calibrated, utilizing the new data associated with the replacement nozzle. A unit startup was commenced at 0541 hours, May 5, 1984. Criticality was achieved at 1245 hours, and the generator was synchronized at 1731 hours. All Steam Generator Water Level Control Systems functioned as designed.

FAILURE DATA:

No. 23 S/G Feedwater Flow Nozzle
Bailey Instrument Company, Inc.
14", 304 Stainless Steel
Holding Ring Type Flow Nozzle Assembly

General Manager-
Salem Operations

JLR:tns

SORC Mtg 84-062