

CONTROL BLOCK:

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0	1	N	J	S	G	S	1	2	0	0	-	0	0	0	0	0	-	0	0	3	4	1	1	1	1	4			5
7	8	9					14	15											25	26					30	57	CAT	58	
LICENSEE CODE		LICENSE NUMBER																LICENSE TYPE											

CON'T

REPORT SOURCE 0 1 7 8

DOCKET NUMBER 1 6 0 5 0 0 0 2 7 2 7 0 2 2 5 8 3 8 0 7 2 0 8 3 9

EVENT DATE 60 61 68 69 74 75

REPORT DATE 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

On February 25, 1983, during a routine startup of Salem Unit 1, both reactor trip breakers failed to open automatically on receipt of a valid Low-Low Steam Generator Level reactor trip signal. The reactor was shutdown 25 seconds later using the manual trip on the control console. Following the trip, the plant was placed in a stable shutdown condition. A plant cooldown was subsequently performed, and the unit entered Mode 5 at 0254 hours, February 26, 1983.

0	9	SYSTEM CODE		I	A	11	CAUSE CODE		E	12	CAUSE SUBCODE		B	13	COMPONENT CODE				C	K	T	B	R	K	14	COMP. SUBCODE		A	15	VALVE SUBCODE		Z	16							
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
LER NO. REPORT NUMBER		EVENT YEAR		SEQUENCE REPORT NO.		OCCURRENCE CODE		REPORT TYPE		REVISION NO.		ACTION TAKEN		FUTURE ACTION		EFFECT ON PLANT		SHUTDOWN METHOD		HOURS		ATTACHMENT SUBMITTED		NPRD-4 FORM SUB.		PRIME COMP. SUPPLIER		COMPONENT MANUFACTURER												
17		8 3		0 1 1		0 1		X		1		A		X		C		B		2 0 4 0		Y		Y		A		W 1 2 0												

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 Subsequent investigation revealed that the breaker failures were caused by mechanical  
1 1 binding of the latch mechanism in the undervoltage trip attachment. All breaker  
1 2 undervoltage attachments were replaced with new devices; extensive maintenance and  
1 3 testing was performed on the breakers. Letters to the NRC dated March 1, 8, 14, 1983  
1 4 and April 8, 28, 1983, provide documentation of complete corrective action.

FACILITY STATUS		% POWER			OTHER STATUS (30)	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION (32)
1	5	C	(28)	0 1 2	(29)	N/A	A (31) Operator Observation

ACTIVITY CONTENT  
RELEASED OF RELEASE

1 6 Z 33 Z 34

AMOUNT OF ACTIVITY (35)  
N/A

LOCATION OF RELEASE (36)  
N/A

PERSONNEL EXPOSURES									
NUMBER			TYPE		DESCRIPTION (39)				
1	7	0	0	0	(37)	Z	(38)	N/A	

PERSONNEL INJURIES	NUMBER	DESCRIPTION
		(41)

7	8	9	10	11	12	N/A	
1	2	3	4	5	6	N/A	
LOSS OF OR DAMAGE TO FACILITY (43)							
TYPE OF DESCRIPTION							

TYPE		DESCRIPTION	
1	9	Z	42
		N/A	
7	8	9	10
8308150288 830720			

PUBLICITY  
 ISSUED DESCRIPTION (45)  
 2 0 N (44)  
 8308150277 830720  
 PDR ADOCK 05000272  
 S PDR  
 NRC U.S. ONLY

NAME OF PREPARER

R. Frahm

PHONE: (609) 935-6000 Ext. 4309



**PSEG**

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

Salem Generating Station

July 29, 1983

Dr. Thomas E. Murley  
Regional Administrator  
USNRC  
Region 1  
631 Park Avenue  
King of Prussia, Pennsylvania 19406

Dear Dr. Murley:

LICENSE NO. DPR-70  
DOCKET NO. 50-272  
REPORTABLE OCCURRENCE 83-011/01X-1  
SUPPLEMENTAL REPORT

Pursuant to the requirements of Salem Generating Station  
Unit No. 1 Technical Specifications, Section 6.9.1.8a,  
we are submitting supplemental Licensee Event Report for  
Reportable Occurrence 83-011/01X-1.

Sincerely yours,

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

RF:k11 *JbJ*

CC: Distribution

Report Number: 83-011/01X-1

Report Date: 07-20-83

Occurrence Date: 02-25-83

Facility: Salem Generating Station Unit 1  
Public Service Electric & Gas Company  
Hancock's Bridge, New Jersey 08038

#### IDENTIFICATION OF OCCURRENCE:

Reactor Trip System - Reactor Trip Breakers - Inoperable.

This report was initiated by Incident Report 83-034.

#### CONDITIONS PRIOR TO OCCURRENCE:

Mode 1 - Rx Power 12 % - Unit Load 70 MWe.

#### DESCRIPTION OF OCCURRENCE:

On February 25, 1983, during the startup of Salem Unit 1 following a routine refueling outage, a low level condition developed in No. 12 Steam Generator due to normal difficulties during startup operations. A Low-Low Steam Generator Level signal was generated by the Reactor Trip System at 1221 hours. Both reactor trip breakers remained closed until plant operators manually tripped the reactor approximately 25 seconds later. The reactor trip breakers opened at that time to insert the control rods into the reactor core. An Alert condition was declared at 0130 hours to provide notifications to offsite authorities. Following the trip, the plant was placed in a stable shutdown condition. The alert was terminated at 0200 hours.

During subsequent review of this event and a previous reactor trip which occurred on February 22, 1983, it was determined that an undetected failure of the breakers had also occurred following the previous trip (see LER 83-012/01X-1). The February 22 event was also terminated by a manual trip of the reactor. Pending completion of a thorough assessment of the events, the plant was placed in a cold shutdown condition; the unit entered Mode 5 at 0254 hours, February 26, 1983.

#### APPARENT CAUSE OF OCCURRENCE:

Subsequent investigation of the reactor trip system revealed that the failure of the breakers to open automatically was caused by mechanical binding of the latch mechanism in the undervoltage trip attachment of the breakers. The manual trip signal initiated by the operators opened the breakers since the manual trip operates the shunt trip device in addition to the undervoltage trip attachment.

#### ANALYSIS OF OCCURRENCE

The operability of the Reactor Trip and Engineered Safety Feature systems and interlocks is required to provide the overall reliability, redundancy

ANALYSIS OF OCCURRENCE (cont'd)

and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the accident analyses.

The operator actions taken in response to the plant conditions on February 22 and 25, 1983 placed the reactor in a safe shutdown condition in spite of the failures in the automatic reactor trip system. No plant damage occurred and there was no impact on the public health and safety as the result of the events.

Due to the failure of the automatic trip system to complete the required protective function when a monitored parameter reached the setpoint specified as the limiting safety system setting, the incident is reportable in accordance with Technical Specification 6.9.1.8a.

CORRECTIVE ACTION:

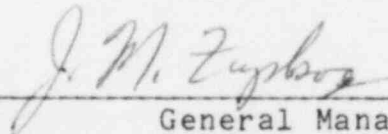
Following detailed investigation of the problems, a number of issues were identified which required resolution in order to preclude recurrence of the failures. All short-term issues were resolved prior to restart of the unit. As part of this effort, all reactor trip and bypass breaker undervoltage trip attachments were replaced with new devices, and extensive maintenance and testing of the breakers was performed. Salem Unit 1 returned to power operation May 21, 1983.

Letters to the NRC dated March 1, March 8, March 14 and April 8 provide the details of corrective action in response to the various issues. A summary of corrective action, including anticipated dates for completion of long-term action, is provided in a letter to the NRC dated April 28, 1983. Steps are presently being taken to resolve all long-term concerns in a timely fashion.

FAILURE DATA:

Westinghouse Electric Corp.  
Air Circuit Breaker  
Model DB-50 Type A

Prepared By R. Frahm



General Manager -  
Salem Operations

SORC Meeting No. 83-097