

## LICENSEE EVENT REPORT

CONTROL BLOCK:

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01 N J S G S 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 37 CAT 38

CON'T

01 REPORT SOURCE L 6 0 5 0 0 0 3 1 1 7 0 8 2 9 8 3 8 0 9 2 7 8 3 9  
7 8 60 61 66 69 74 75 80

## EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 On two separate occasions, on August 29 and August 30, 1983, during routine shutdown  
03 operation actuations of Channel No. 2A Safeguards Equipment Control (SEC) System. In  
04 each case redundant safety related equipment was available and following resetting of  
05 the channel, running equipment was restored to the desired status. In the second case,  
06 the No. 2A Vital Bus was de-energized, and Action Statement 3.8.2.1a was entered. The  
07 event constituted operation in a degraded mode in accordance with Technical  
08 Specification 6.9.1.9b.

09 SYSTEM CODE CAUSE CODE CAUSE SUBCODE COMPONENT CODE COMP. SUBCODE VALVE SUBCODE  
E B 11 B 12 C 13 I N S T R U 14 Y 15 Z 16  
7 8 9 10 11 12 13 18 19 20  
17 LER NO. REPORT NUMBER EVENT YEAR SEQUENTIAL REPORT NO. OCCURRENCE CODE REPORT TYPE REVISION NO.  
8 3 0 4 7 0 3 L 0  
21 22 23 24 26 27 28 29 30 31 32  
ACTION TAKEN FUTURE ACTION EFFECT ON PLANT SHUTDOWN METHOD HOURS ATTACHMENT SUBMITTED NPD-4 FORM SUB. PRIME COMP. SUPPLIER COMPONENT MANUFACTURER  
B 18 X 19 Z 20 Z 21 0 0 0 0 Y 23 Y 24 A 25 A 6 4 0 26  
33 34 35 36 37 40 41 42 43 44 47

## CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 The first instance was viewed as a spurious actuation. In the second case, the  
11 actuation occurred during performance of a voltage measurement; the loading effect of  
12 the test instrument apparently caused a spurious signal from the channel. Investi-  
13 gation of Channel 2A SEC problems is continuing. A commitment to submit a Supplemental  
14 Report was made in LER 83-014/03L.

15 FACILITY STATUS % POWER OTHER STATUS 30 METHOD OF DISCOVERY DISCOVERY DESCRIPTION 32  
G 28 0 0 0 29 NA A 31 Operator Observation  
7 8 9 10 11 12 13 44 45 46 80  
16 ACTIVITY CONTENT RELEASED OF RELEASE AMOUNT OF ACTIVITY 35 LOCATION OF RELEASE 36  
Z 33 Z 34 NA NA  
7 8 9 10 11 44 45 80  
17 PERSONNEL EXPOSURES NUMBER TYPE DESCRIPTION 39  
0 0 0 37 Z 38 NA  
7 8 9 11 12 13 80  
18 PERSONNEL INJURIES NUMBER DESCRIPTION 41  
0 0 0 40 NA  
7 8 9 11 12 80  
19 LOSS OF OR DAMAGE TO FACILITY TYPE DESCRIPTION 43  
Z 42 NA  
7 8 9 10 80

20 ISSUED DESCRIPTION 45  
N 44 NA  
7 8 9 10 80  
PDR 8310250567 830927  
S PDR ADOCK 05000311  
PDR

NRC USE ONLY

NAME OF PREPARER

R. Frahm

PHONE (609) 935-6000 Ext. 4309

TE 22



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

Salem Generating Station

September 27, 1983

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

Dear Dr. Murley:

LICENSE NO. DPR-75  
DOCKET NO. 50-311  
REPORTABLE OCCURRENCE 83-047/03L

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 83-047/03L. This report is required within thirty (30) days of the occurrence.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "J. M. Zupko, Jr.", is written above the typed name.

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

RF:k11

CC: Distribution

Report Number: 83-047/03L

Report Date: 09-27-83

Occurrence Dates: 08-29-83  
08-30-83

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

#### IDENTIFICATION OF OCCURRENCE:

Electrical Power Sources - No. 2A Vital Bus - Inoperable.

This report was initiated by Incident Reports 83-161 and 83-162.

#### CONDITIONS PRIOR TO OCCURRENCE:

08-29-83 - Mode 4 - Rx Power 0 % - Unit Load 0 MWe.

08-30-83 - Mode 4 - Rx Power 0 % - Unit Load 0 MWe.

#### DESCRIPTION OF OCCURRENCE:

At 1725 hours, August 29, 1983, during routine shutdown operation, various 2A SEC alarms were received in the Control Room. The Control Room Operator surveyed the control console and noted that No. 22 Service Water Pump and No. 21 Containment Fan Coil Unit had tripped, and No. 21 Control Area Air Conditioning Fan had started. No. 2A Diesel Generator did not start, and no other automatic actuations were observed. The incident was attributed to a spurious actuation of Safeguards Equipment Control (SEC) System Channel 2A (previous, similar actuations had been noted - see LERs 83-014/03L, 83-025/03L, 83-031/03L and 83-041/03L). The channel was reset and the alarm cleared. Redundant safety related equipment was available throughout the occurrence; running equipment affected was returned to the desired status.

The next day, at 1343 hours, August 30, 1983, a Channel 2A SEC actuation caused the No. 2A Vital Bus Infeed Breaker 22ASD to trip without automatic transfer, de-energizing the bus. The bus was declared inoperable and Technical Specification Action Statement 3.8.2.1a was entered. Investigation revealed that the actuation occurred during a voltage measurement in the SEC cabinet. Redundant safety related equipment was also available in this instance; the equipment was started as necessary, and the bus was re-energized within the time interval required by the action statement.

#### APPARENT CAUSE OF OCCURRENCE:

Similar events had previously been observed, as mentioned, and all have involved SEC Channel 2A. Channel operation was monitored by connecting a high response recorder to various circuit locations. The data collected indicated that there were several possible sources of the problems, all in the channel wiring harness. A new harness was prepared and installation scheduled for the next convenient

APPARENT CAUSE OF OCCURRENCE: (cont'd)

opportunity.

Following a spurious actuation of the channel on August 9, 1983, additional circuit locations had been connected to the recorder to more closely identify the cause of the problems. During installation of the additional monitor points, near-short conditions on the terminals of the output test panel were discovered and corrected; the conditions were given a 30 to 40% probability of being the cause of the Channel 2A SEC problems. It should be noted that the subsequent actuation on August 29 was somewhat different in that a loss of the vital bus did not occur.

A short maintenance shutdown of Salem Unit 2 was required due to unrelated problems and the decision was made to install the new wiring harness in the SEC channel. Voltage measurements were performed during preparation for installation of the harness, and as noted were in progress at the time of the second occurrence. The loading effect of the test instrument was apparently sufficient to initiate a spurious signal from the channel.

ANALYSIS OF OCCURRENCE:

The operability of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown of the facility, and 2) the mitigation and control of accident conditions within the facility. The action requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation.

As noted, in the second instance the vital bus was de-energized. The inoperable bus was restored in a timely fashion, however, and redundant safety equipment functioned as designed. The event therefore involved no undue risk to the health or safety of the public. The occurrence constituted operation in a degraded mode permitted by a limiting condition for operation and was reportable in accordance with Technical Specification 6.9.1.9b.

Action Statement 3.8.2.1a requires:

With less than the required complement of A.C. buses operable or energized, restore the inoperable buses to operable and energized status within 8 hours or be in at least hot standby within the next 6 hours and in cold shutdown within the following 30 hours.

CORRECTIVE ACTION:

In the first case, as mentioned, the SEC channel was reset and loads restarted as necessary. In the second instance, power was restored to the No. 2A Vital Bus at 1359 hours, August 30, 1983. The bus was declared operable and Action Statement 3.8.2.1a was terminated. Installation of the wiring harness was completed, and monitoring of circuit operation was continued to assess the effectiveness of the



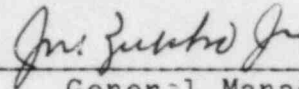
CORRECTIVE ACTION: (cont'd)

measure. Similar problems were re-encountered on September 21, 1983, and investigation of the problems with engineering support and outside consultants is continuing. A commitment to submit a Supplemental Report upon resolution of the SEC problems was made in LER 83-014/03L.

FAILURE DATA:

Automation Industries, Inc.  
Safeguards Equipment Control System

Prepared By R. Frahm



General Manager -  
Salem Operations

SORC Meeting No. 83-121