

Report Number: 79-77/03L  
Report Date: 1/23/80  
Occurrence Date: 12/24/79  
Facility: Salem Generating Station  
Public Service Electric & Gas Company  
Hancock's Bridge, New Jersey 08038

IDENTIFICATION OF OCCURRENCE:

1A Safeguard Equipment Control (SEC) Inoperable

CONDITIONS PRIOR TO OCCURRENCE:

Operational Mode 3

DESCRIPTION OF OCCURRENCE:

At 1004 hours, the 11ASD infeed breaker to the 1A 4kV vital bus tripped, de-energizing the bus and causing loss of various plant equipment. The 1A emergency diesel generator started but did not go through the loading sequence. The control room operator initiated recovery of de-energized equipment and an equipment operator went to the relay room to investigate and reset the 1A SEC panel. Indicated trouble was bus undervoltage and underfrequency but the operator had no difficulty resetting the panel. At 1008 hours, the 11ASD breaker was reclosed and the 1A emergency diesel was secured. Recovery from loss of de-energized equipment was complete by 1013 hours. Maintenance electricians investigated the occurrence; and at 1100 hours, declared the 1A SEC inoperable. Technical Specifications 3.8.1.1 and 3.3.2.1 Action Statements were implemented. At 2020 hours, the 1A SEC was returned to service and the Action Statements were terminated.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE:

The cause of this occurrence was a failure in the 1A SEC logic circuitry which incorrectly monitored an undervoltage condition on the 1A vital bus and tripped the 11ASD infeed breaker. The SEC operated as designed by unloading the bus and starting the emergency diesel generator and not initiating the auto load sequence which requires a fault on two of the three vital busses.

ANALYSIS OF OCCURRENCE:

Technical Specification 3.3.2.1 requires that with the number of operable SEC channels one less than the total number of channels, be in Hot Standby within 6 hours and in Cold Shutdown within the following 30 hours. The reactor was in Hot Standby throughout this occurrence. The 1A SEC channel was repaired and returned to service in 10 hours 16 minutes.

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Technical Specification 3.8.1.1 requires that with a diesel generator inoperable, remaining AC sources shall be demonstrated operable by performing 4.8.1.1.1a and 4.8.1.1.2a2 surveillances within one hour and at least once per 8 hours thereafter. This Technical Specification was implemented and the surveillances performed as required although the offsite-onsite transmission distribution systems and the diesel generators were operable throughout this occurrence.

CORRECTIVE ACTION:


The entire logic drawer was replaced with a spare unit and tested satisfactorily before returning the 1A SEC to service. Trouble-shooting of the failed drawer resulted in five logic boards and one faulty relay in the relay stack being replaced.

FAILURE DATA:

Safeguards Equipment Control System  
Automation Industries, Inc.  
Silver Springs, Maryland

Prepared By A. W. Kapple

SORC Meeting No. 05-80

  
Manager - Salem Generating Station

LICENSEE EVENT REPORT

CONTROL BLOCK: (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01 NJSGS1 200-000000-0003 411111 4 5

CON'T 01 REPORT SOURCE L 605000272 7122479 8012380 9

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES 10

02 During startup operations, the 11ASD breaker tripped, de-energizing the 1A 4kV
03 vital bus and supplied plant loads. The 1A SEC panel was reset and the 11ASD
04 breaker was reclosed. Maintenance electricians declared the 1A SEC inoperable and
05 Action Statements for T/S 3.8.1.1 and 3.3.2.1 were implemented. The 1A SEC was
06 repaired, tested and returned to service in 10 hours and 16 minutes. The plant was
07 in Hot Standby throughout this occurrence. This is the first occurrence of this
08 type.

09 SYSTEM CODE EE 11 CAUSE CODE E 12 CAUSE SUBCODE G 13 COMPONENT CODE I N S T R U 14 COMP. SUBCODE Y 15 VALVE SUBCODE Z 16
17 LER RO REPORT NUMBER 79 EVENT YEAR 79 SEQUENTIAL REPORT NO. 077 OCCURRENCE CODE 03 REPORT TYPE L REVISION NC. 0
18 C 19 Z 20 Z 21 Z 22 0000 ATTACHMENT SUBMITTED Y 23 NPRD-4 FORM SUB. N 24 PRIME COMP. SUPPLIER A 25 COMPONENT MANUFACTURER A 6 4 0 26

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS 27

10 Failed components in the logic circuit sensed an erroneous undervoltage condition
11 on 1A vital bus and opened the 11ASD infeed breaker. The entire logic drawer was
12 replaced to expedite recovery of the 1A SEC. Further troubleshooting of the
13 failed drawer resulted in five logic boards and one relay being replaced.

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15 FACILITY STATUS C 28 % POWER 000 29 OTHER STATUS N/A 30 METHOD OF DISCOVERY A 31 DISCOVERY DESCRIPTION Control Room Alarms & Indications 32

16 ACTIVITY CONTENT Z 33 RELEASED OF RELEASE Z 34 AMOUNT OF ACTIVITY N/A 35 LOCATION OF RELEASE N/A 36

17 PERSONNEL EXPOSURES NUMBER 000 37 TYPE Z 38 DESCRIPTION N/A 39

18 PERSONNEL INJURIES NUMBER 000 40 DESCRIPTION N/A 41

19 LOSS OF OR DAMAGE TO FACILITY TYPE Z 42 DESCRIPTION N/A 43

20 PUBLICITY ISSUED Z 44 DESCRIPTION N/A 45 NRC USE ONLY

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