

### LICENSEE EVENT REPORT

CONTROL BLOCK: 1 (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01 N J S G S 2 2 0 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 58  
 LICENSEE CODE LICENSE NUMBER LICENSE TYPE CAT 58

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01 L 6 0 5 0 0 0 3 1 1 7 0 8 1 2 8 2 8 0 8 3 0 8 4 9  
7 8 60 61 68 69 74 75 80  
 REPORT SOURCE DOCKET NUMBER EVENT DATE REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES 10

02 On August 12, 1982, during performance of routine surveillance, the Control Room  
03 Operator received indication of low service water flow on No. 25 Containment Fan Coil  
04 Unit. The unit was declared inoperable and Action Statement 3.6.2.3a was entered.  
05 Redundant cooling capability was provided by the containment spray systems. The  
06 occurrence constituted operations in a degraded mode in accordance with Technical  
07 Specification 6.9.1.9b.  
08

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

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS 27

10 The problem involved oysters restricting service water flow to the CFCU. Following  
11 an engineering review, the Service Water System was extensively cleaned and a  
12 continuous chlorination program was instituted to prevent the reinfestation of marine  
13 growth.  
14

15 E 0 8 2 NA B Surveillance Testing  
7 8 9 10 12 13 44 45 46 80  
 FACILITY STATUS % POWER OTHER STATUS METHOD OF DISCOVERY DISCOVERY DESCRIPTION  
16 Z Z NA NA  
7 8 9 10 11 44 45 80  
 ACTIVITY CONTENT RELEASED OF RELEASE AMOUNT OF ACTIVITY LOCATION OF RELEASE  
17 0 0 0 Z NA  
7 8 9 11 12 13 39 80  
 PERSONNEL EXPOSURES NUMBER TYPE DESCRIPTION  
18 0 0 0 NA  
7 8 9 11 12 41 80  
 PERSONNEL INJURIES NUMBER DESCRIPTION  
19 Z NA  
7 8 9 10 43 80  
 LOSS OR DAMAGE TO FACILITY TYPE DESCRIPTION  
20 N NA  
7 8 9 10 45 80  
 PUBLICITY ISSUED DESCRIPTION  
 8409100316 840830  
 PDR AD0CK 05000311  
 S PDR

NAME OF PREPARER J. L. Rupp PHONE: (609) 339-4309

NRC USE ONLY

Report Number: 82-083/03X-2  
Report Date: 08/30/84  
Occurrence Date: 08/12/82  
Facility: Salem Generating Station Unit 2  
Public Service Electric & Gas Company  
Hancock's Bridge, New Jersey 08038

IDENTIFICATION OF OCCURRENCE:

No. 25 Containment Fan Coil Unit - Inoperable.

This report was initiated by Incident Report 82-229.

CONDITIONS PRIOR TO OCCURRENCE:

Mode 1 - Rx Power 82 % - Unit Load 910 MWe.

DESCRIPTION OF OCCURRENCE:

At 0230 hours, August 12, 1982, while performing routine surveillance on the Containment Fan Coil Units (CFCU's), the Control Room Operator received indication of low service water flow on No. 25 CFCU. When the CFCU was placed in the low speed mode, service water flow was only 1200 GPM instead of the required 2500 GPM. No. 25 CFCU was declared inoperable and Technical Specification Action Statement 3.6.2.3a was entered. Both containment spray systems were operable throughout the occurrence.

APPARENT CAUSE OF OCCURRENCE:

The service water flow transmitter sensing lines were blown down and purged. Investigation revealed that all service water valves were open but a high differential pressure existed across the CFCU. Cycling the CFCU isolation and flow control valves by alternately starting and stopping the unit increased the flow to normal. The problem apparently involved oysters accumulating on the face of Valve 25SW57 tube bundle and restricting flow to the CFCU.

ANALYSIS OF OCCURRENCE:

The CFCUs operate in conjunction with the containment spray systems to remove heat and radioactive contamination from the containment atmosphere in the event of a design basis accident. Operability of either all fan coil groups or of both containment spray systems is necessary to insure offsite radiation dose is maintained within the limits established in the Code of Federal Regulations, 10CFR 100.

Because redundant cooling capability was provided by the containment spray systems, no undue risk to the health or safety of the public was involved. The occurrence therefore 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.

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ANALYSIS OF OCCURRENCE: (cont'd)

## Action Statement 3.6.2.3a requires:

With one group of containment cooling fans inoperable, restore the inoperable group of cooling fans to operable status within the next 7 days, or be in cold shutdown within the following 30 hours.

CORRECTIVE ACTION:

As noted, the flow transmitter sensing lines were blown down, and the flow control valves were cycled. Flow was restored to within specification, and No. 25 CFCU was tested with satisfactory results. No. 25 CFCU was declared operable and Action Statement 3.6.2.3a was terminated at 1520 hours, August 12, 1982.

Many occurrences, in 1982, involved the inoperability of the CFCU's, due to reduced service water flow. These occurrences were attributed to several types of problems; they included oysters plugging the tube bundles of Fisher Cavitrol valves (see Unit 2 LER's 82-041/03L, 82-046/03L, 82-049/03L, 82-050/03L, 82-058/03L and 82-117/03L), sticking of the Cavitrol valves (see Unit 1 LER's 82-022/03L, 82-024/03L, 82-029/03L and 82-037/03L; also Unit 2 LER's 82-006/03L, 82-017/03L and 82-035/03L), silt accumulation in the CFCU cooling coils (see Unit 2 LER's 82-096/03L, 82-098/03L, 82-099/03L and 82-105/03L), and silt accumulation in transmitter sensing lines (see Unit 1 LER's 82-061/03L and 82-077/03L; also Unit 2 LER's 82-028/01X-1 and 82-038/03L). Due to the large number of occurrences, and their possible interrelation, a detailed engineering investigation of the entire area was requested.

The instances of sticking of Type SW223 valves were attributed to binding of the valve, caused by the accumulation of corrosion on the valve stem. Cycling of the valves during the CFCU surveillance runs was initiated in December, 1982, and has eliminated the problems (see Unit 2 LER 82-017/03X-1, and Unit 1 LER's 82-024/03X-1 and 82-029/03X-1). Increased testing frequency of the CFCU's, combined with the existing program to blow down sensing lines weekly, has proven effective in eliminating the accumulation of silt.

On several occasions, involving low flow conditions of the Type SW57 valves, shells were removed upon disassembly of the valve. These problems, apparently resulting from partial obstruction of the tube bundle, were corrected by cycling of the valves to dislodge or erode away the shells. Although several instances of low flow conditions were attributed to the accumulation of silt in the CFCUs, further consideration of these events has shown that the occurrences were probably due to oysters partially plugging the tube bundle.

All other flow problems noted were apparently due to unrelated and generally isolated problems with the Cavitrol valves, valve positioners, air regulators, etc.

CORRECTIVE ACTION: (cont'd)

During the 1983 refueling outage, extensive cleaning of the Service Water System was performed. Silt and large amounts of oysters were removed. The cleaning was followed by a test chlorination, flushes and inspections. A Safety Evaluation was performed and demonstrated that the unit could be operated safely until the biofouling is fully eliminated. Additional flushes and inspections were performed, which confirmed this conclusion. Monitoring, flushes, and in-service inspections are continuing until evaluation confirms the problem has been eliminated.

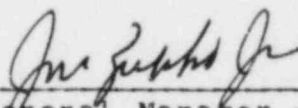
A chlorination program to fully eliminate oysters and to prevent the reinfestation of the Service Water System has been developed. Continuous chlorination at increased levels is currently being performed. To ensure compliance with the New Jersey Pollutant Discharge Elimination System permit requirements, a permanent sampling system has been installed.

During the 1983 refueling shutdown of Salem Unit 1, a small amount of biofouling of the Unit 1 Service Water System was also observed. Parallel measures were taken to correct the problem in that Unit. An inspection of Unit 1 Service Water System, during the 1984 refueling outage, revealed that the new chlorination and flushing program has been effective in preventing the reinfestation of marine growth.

FAILURE DATA:

Fisher Controls Co.  
8 inch Vee-ball Valve  
Type 657-8U

Prepared By J. L. Rupp

  
\_\_\_\_\_  
General Manager -  
Salem Operations

SORC Meeting No. 84-103



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

Salem Generating Station

August 30, 1984

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

Dear Sir:

LICENSE NO. DPR-75  
DOCKET NO. 50-311  
REPORTABLE OCCURRENCE 82-083/03X-2  
SUPPLEMENTAL REPORT

Pursuant to the requirements of Salem Generating Station  
Unit No. 2 Technical Specifications, Section 6.9.1.9.b,  
we are submitting supplemental Licensee Event Report for  
Reportable Occurrence 82-083/03X-2.

Sincerely yours,

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

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

JR:kll

CC: Distribution

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