

LICENSEE EVENT REPORT

CONTROL BLOCK

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 V A S P S 2 2 0 0 - 0 0 0 0 0 0 - 0 0 3 4 1 1 1 1 1 4 5
8 9 14 15 25 26 30 37 CAT 58

CON'T
0 1 REPORT SOURCE L 6 0 5 0 0 0 2 8 1 7 0 2 0 2 8 3 8 0 2 2 5 8 3 9
7 8 60 61 DOCKET NUMBER 68 69 EVENT DATE 74 75 REPORT DATE 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 On February 2, with unit 2 at 100% power and the #3 EDG out of service for
0 3 maintenance, the Containment Vacuum Pump, 2-CV-P-1A, failed to develop flow.
0 4 2-CV-P-1B was operating but the emergency power service was not available. This
0 5 event is contrary to T.S. 3.15.B and reportable pursuant to T.S. 6.6.2.b(2). The
0 6 redundant pump, 2-CV-P-1B, was operating and maintained the containment within
0 7 the operating envelope specified in T.S. 3.8, therefore, the health and safety of
0 8 the public were not affected.
7 8 9

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

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 The pump was inoperable due to binding of the sliding vanes in the pump rotor. The
1 1 pump was replaced with a shop spare.
1 2
1 3
1 4
7 8 9

1 5 FACILITY STATUS E 28 % POWER 1 0 0 29 OTHER STATUS N/A 30 METHOD OF DISCOVERY A 31 DISCOVERY DESCRIPTION Operator Observation 32
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 48 49 50
1 6 ACTIVITY CONTENT RELEASED OF RELEASE Z 33 Z 34 AMOUNT OF ACTIVITY N/A 35 LOCATION OF RELEASE N/A 36
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 48 49 50
1 7 PERSONNEL EXPOSURES NUMBER 0 0 0 37 TYPE Z 38 DESCRIPTION N/A 39
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 48 49 50
1 8 PERSONNEL INJURIES NUMBER 0 0 0 40 DESCRIPTION N/A 41
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 48 49 50
1 9 LOSS OF OR DAMAGE TO FACILITY TYPE Z 42 DESCRIPTION N/A 43
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 48 49 50
2 0 PUBLICITY ISSUED N 44 DESCRIPTION 45
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 48 49 50

8303140532 830225
PDR ADCK 05000281
S PDR

NRC USE ONLY

NAME OF PREPARED J. L. Wilson

PHONE (804) 357-3184

ATTACHMENT 1

SURRY POWER STATION, UNIT NO. 2

DOCKET NO: 50-281

REPORT NO: 83-003/03L-0

EVENT DATE: 02-02-83

TITLE OF THE EVENT: BOTH CONTAINMENT VACUUM PUMPS INOPERABLE

1. Description of the Event

On February 2, 1983 with unit two at 100 percent power and the #3 Emergency Diesel Generator (EDG) tagged out for maintenance, Containment Vacuum pump, 2-CV-P-1A, would not develop flow. Containment Vacuum Pump 2-CV-P-1B was placed in service and operated satisfactory, however, because the Emergency Power Supply for this pump (EDG #3) was not available, the pump was inoperable in accordance with the Technical Specification 3.6.2.

This event is contrary to Technical Specification 3.15.B and reportable pursuant to Technical Specification 6.6.2.b(2).

2. Probable Consequences and Status of Redundant Equipment

At no time during this event did the containment exceed the limits of the operating envelope set forth in Technical Specification 3.8. These limits are governed by containment pressure, containment temperature and service water. 2-CV-P-1B was operating throughout this event and 2-CV-P-1A was returned to service within the time allowed by Technical Specification 3.0.1, therefore, the health and safety of the public were not affected.

3. Cause

Containment Vacuum Pump 1-CV-P-1A was inoperable due to binding of the sliding vanes in the pump rotor. These vanes fit the machined slots in the rotor, one vane per slot, with the rotor housed in the pump casing. As the rotor spins, the vanes are thrown outward causing their outer edge to come in contact with the pump casing. The distance between the rotor and the inner surface of the casing is not constant around the perimeter, (maximum near inlet port, minimum near discharge port) thus for pump operation, the carbon vanes must be free to slide in and out. Condensation of moisture from the containment building atmosphere in combination with entrained particles resulted in the vanes binding in their slots.

4. Immediate Corrective Actions

Vacuum Pump 1-CV-P-1A was replaced with a shop spare.

5. Subsequent Corrective Action

The #3 EDG was returned to service the following day.

6. Actions Taken to Prevent Recurrence

Engineering Study 82-04, recommends that the pumps be replaced with pumps more compatible with containment environment. A Design Change has been initiated to replace the pumps with equipment better suited to the system conditions.

7. Generic Implications

None.