

LICENSEE EVENT REPORT

CONTROL BLOCK:

1	2	3	4	5	6
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 (1)

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0	1	S	C	H	B	R	2	0	0	-	0	0	0	0	0	0	0	3	4	1	1	1	1	4			5
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7 8 9 14 15 25 26 30 57 CAT 58
LICENSEE CODE LICENSE NUMBER LICENSE TYPE

CON'T

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

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 | While in the cold shutdown condition on 11/30/80, a cracked and leaking weld was

0 3 | identified on a pressure gauge tap pipe sockolet on the discharge line from "B"

0 4 | charging pump. The same pipe sockolets on the "A" and "C" lines were found leaking

0 5 | on 12/2/80, and on 12/3/80 the pressure gauge tap pipe sockolet on the common

0 6 | discharge line to the regenerative heat exchanger was found leaking. This series of

0 7 | leaks was identified as reportable per Tech. Spec. 6.9.2.B.4 as abnormal system

0 8 | degradation. Since the plant was in the cold shutdown condition and the Safety

0 8 | Injection system was operable, there was no threat to either plant or public safety.

7 8 9 80

0	9	P	C	11	B	12	A	13	P	I	P	E	X	X	14	A	15	Z	16
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7 8 9 10 11 12 13 14 15 16 17 18 19 20
SYSTEM CODE CAUSE CODE CAUSE SUBCODE COMPONENT CODE COMP. SUBCODE VALVE SUBCODE

17 LER/RO REPORT NUMBER 8 0 21 22 0 3 0 24 26 0 3 28 29 0 3 30 31 1 32 33
EVENT YEAR SEQUENTIAL REPORT NO. OCCURRENCE CODE REPORT TYPE REVISION NO.

B 18 F 19 C 20 Z 21 0 0 0 0 22 23 Y 23 24 Y 24 25 A 25 26 5 1 5 2 26
33 34 35 36 37 40 41 42 43 44 47
ACTION TAKEN FUTURE ACTION EFFECT ON PLANT SHUTDOWN METHOD HOURS ATTACHMENT SUBMITTED NPRD-4 FORM SUB. PRIME COMP. SUPPLIER COMPONENT MANUFACTURER

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 | A preliminary evaluation revealed the apparent root cause as system design deficiencies

1 1 | which allowed high vibration from the positive displacement charging pumps to cause

1 2 | fatigue cracking in the pipe welds. The leaks were repaired and a safety evaluation

1 3 | was completed prior to plant startup. An engineering study has been completed and

1 4 | modifications are being developed to correct the design deficiencies. This work will

1 4 | be completed during the S/G Replacement Outage.

7 8 9 80

1	5	G	28	0	0	0	29	N/A	30	B	31	Operator Observation	32
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7 8 9 10 11 12 13 44 45 46 80
FACILITY STATUS % POWER OTHER STATUS METHOD OF DISCOVERY DISCOVERY DESCRIPTION

1 6 Z 23 Z 34 N/A 35 N/A 36 LOCATION OF RELEASE
7 8 9 10 11 44 45 80
ACTIVITY CONTENT RELEASED OF RELEASE AMOUNT OF ACTIVITY

1 7 0 0 0 37 Z 38 N/A 39
7 8 9 10 11 12 13 80
PERSONNEL EXPOSURES NUMBER TYPE DESCRIPTION

1 8 0 0 0 40 N/A 41
7 8 9 10 11 12 80
PERSONNEL INJURIES NUMBER DESCRIPTION

1 9 Z 42 N/A 43
7 8 9 10 80
LOSS OF OR DAMAGE TO FACILITY TYPE DESCRIPTION

2 0 N 44 N/A 45
7 8 9 10 80
PUBLICITY ISSUED DESCRIPTION

NRC USE ONLY
78 79 80

NAME OF PREPARER Carson L. Wright

PHONE (803) 383-4524

SUPPLEMENTAL INFORMATION
FOR
LICENSEE EVENT REPORT 80-030, REVISION 1

I. Cause Description and Analysis

While solid in the cold shutdown condition for miscellaneous valve maintenance, four pressure gauge tap sockolets in the charging pump discharge piping were observed to have cracked and leaking welds. On 11/30/80, the sockolet on the discharge line from "B" charging pump was found to have a weld leak. On 12/2/80, the pressure gauge tap sockolet on the common discharge line to the regenerative heat exchanger was found leaking. In each case, the sockolet to charging line welds experienced through wall cracks. These failures are the most recent of a series of similar failures previously viewed as maintenance problems. The near simultaneous nature of these four most recent failures prompted a review of past problems and resulted in these problems being regarded as abnormal system degradation. Therefore, this is reportable in accordance with Technical Specification Section 6.9.2.B.4.

The sockolets were removed and taken to the CP&L materials laboratory for failure analyses. These analyses revealed the failure mechanism as fatigue cracking. The root cause of the failures is attributed to a design deficiency in the system which allows the positive displacement charging pumps to cause excessive vibration in small branch piping connected to the pump discharge lines. The fatigue cracking is believed to have resulted from this excessive vibration.

Throughout the period that these leaks were being identified and repaired, the plant was solid in the cold shutdown condition, and as required by Technical Specifications, the Safety Injection System was operable. Therefore, there was no threat to either Plant or public health or safety. Also, a safety evaluation was performed by an independent outside agency to address the safety concerns regarding the continued operation of the charging (CVCS) system. This evaluation concluded that the system could be operated without the creation of a "substantial safety hazard."

II. Corrective Action

Immediate corrective action to return the system to operable status consisted of the removal and replacement of the existing sockolets.

III. Corrective Action to Prevent Recurrence

In order to ensure that any future leaks are identified in a prompt manner, inspections of the affected piping are being performed each shift. Any leaks identified will be promptly repaired in accordance with applicable Technical Specification requirements.

An engineering study, initiated to address the charging system problems, has been completed. Modifications, resulting from this study, are being developed and involve the following:

- (1) Installing pulsation dampeners on the discharge lines;
- (2) Installing stabilizers on the suction lines;
- (3) Re-routing and re-supporting of tap lines;
- (4) Making various support modifications; and
- (5) Performing vibration tests to quantify the effectiveness of the modifications.

All modifications will be completed during the S/G Replacement Outage. Until this work is completed, the additional surveillance being performed and prompt maintenance efforts will ensure the continued safe operation of the Plant.

CP&L

Carolina Power & Light Company

H. B. ROBINSON STEAM ELECTRIC PLANT
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HARTSVILLE, SOUTH CAROLINA 29550

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USNRC REGION II
ATLANTA, GEORGIA

83 OCT 4 48:53

Robinson File No: 13510C

Serial: RSEP/83-1242

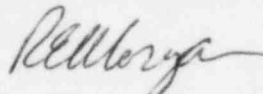
Mr. James P. O'Reilly
Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N. W., Suite 3100
Atlanta, Georgia 30303

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
LICENSEE EVENT REPORT 80-030, REVISION 1

Dear Mr. O'Reilly:

In accordance with Section 6.9.2 of the Technical Specifications for the H. B. Robinson Steam Electric Plant, Unit 2, the enclosed Licensee Event Report is submitted. The original report, dated December 30, 1980, described a vibration problem in the charging system. This revision contains a complete description of the event in addition to current corrective actions and should replace all existing copies of the original report.

Very truly yours,



R. E. Morgan
General Manager
H. B. Robinson SEG Plant

CLW:/bss

Enclosure

cc: R. C. DeYoung (30)
R. A. Hartfield (3)
INPO (1)

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