

401/24/78

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)  
DISTRIBUTION FOR INCOMING MATERIAL

50-261

REC: ORIELLY J P  
NRC

ORD: FURR B J  
CAROLINA PWR & LIGHT

DOCDATE: 08/14/78  
DATE RCVD: 08/22/78

DOCTYPE: LETTER NOTARIZED: NO

COPIES RECEIVED  
LTR 1 ENCL 1

SUBJECT:

FORWARDING SUPPLEMENTARY LICENSEE EVENT REPT (RO 50-261/78-009) ON 04/11/78  
CONCERNING "B" AUXILIARY FEEDWATER PUMP FAILED TO START UPON LOSS OF MAIN  
FEEDWATER PRESSURE...WORN CIRCUIT BREAKER TRIP ARM CAUSED PROBLEM...W/ATT LER  
78-010.

PLANT NAME: H B ROBINSON -- UNIT 2

REVIEWER INITIAL: XJM  
DISTRIBUTOR INITIAL: *we*

\*\*\*\*\* DISTRIBUTION OF THIS MATERIAL IS AS FOLLOWS \*\*\*\*\*

INCIDENT REPORTS  
(DISTRIBUTION CODE A002)

FOR ACTION: BR CHIEF ORB#1 BC\*\*W/4 ENCL

INTERNAL:

REG FILE\*\*W/ENCL  
I & E\*\*W/2 ENCL  
I & C SYSTEMS BR\*\*W/ENCL  
NOVAK/CHECK\*\*W/ENCL  
AD FOR ENG\*\*W/ENCL  
HANAUER\*\*W/ENCL  
AD FOR SYS & PROJ\*\*W/ENCL  
ENGINEERING BR\*\*W/ENCL  
KREGER/J. COLLINS\*\*W/ENCL  
K SEYFRIT/IE\*\*W/ENCL

NRC PDR\*\*W/ENCL  
MIPC\*\*W/3 ENCL  
EMERGENCY PLAN BR\*\*W/ENCL  
EEB\*\*W/ENCL  
PLANT SYSTEMS BR\*\*W/ENCL  
AD FOR PLANT SYSTEMS\*\*W/ENCL  
REACTOR SAFETY BR\*\*W/ENCL  
VOLLMER/BUNCH\*\*W/ENCL  
POWER SYS BR\*\*W/ENCL

EXTERNAL:

LPDR'S  
HARTSVILLE, SC\*\*W/ENCL  
TIC, LIZ CARTER\*\*W/ENCL  
NSIC\*\*W/ENCL  
ACRS CAT B\*\*W/16 ENCL

DISTRIBUTION: LTR 45 ENCL 45  
SIZE: 1P+1P+5P

CONTROL NBR: 782350258

\*\*\*\*\* THE END \*\*\*\*\*

404  
cep

August 14, 1978

FILE: NG-3516 (R)

SERIAL: GD-78-2056

Mr. James P. O'Reilly, Director  
U. S. Nuclear Regulatory Commission  
Region II, Suite 3100  
101 Marietta Street  
Atlanta, GA 30303

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET 50-261  
LICENSE NO. DPR-23  
SUPPLEMENTARY LICENSEE EVENT REPORTS 78-09 and 78-010

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 attached Supplementary Licensee Event Reports are submitted. These reports fulfill the requirement for an updated report of reportable occurrences reported on May 10 and 12, 1978, and is in accordance with the format set forth in NUREG-0161, July, 1977.

Yours very truly,

B. V. Furr  
Manager  
Generation Department

DCS:dcj\*

**Attachment**

cc: Messrs. R. A. Hartfield  
E. Volgenau

782350258

A002  
S11

UPDATE REPORT-PREVIOUS DATE 5-10-78  
LICENSEE EVENT REPORT

CONTROL BLOCK:

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0	1	S	C	H	B	R	2	2	0	0	-	0	0	0	0	0	0	3	4	1	1	1	1	4		5									
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									
LICENSEE CODE														LICENSE NUMBER										LICENSE TYPE										CAT 58	

CON'T

0	1	L	6	0	5	0	0	0	2	6	1	7	0	4	1	1	7	8	8	0	8	1	4	7	8	9					
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					
REPORT SOURCE		DOCKET NUMBER										EVENT DATE										REPORT DATE									

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 | "B" auxiliary feedwater pump failed to start upon loss of main feedwater pressure at

0 3 | 0953 hours, April 11, 1978. Manual attempts to start "B" AFW pump from the RTGB were

0 4 | unsuccessful. "A" AFW pump was operable at this time. This constitutes a reportable

0 5 | occurrence per Technical Specifications Paragraph 6.9.2.b.2.

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0 8 |

0	9	C	H	11	E	12	B	13	C	K	T	B	R	K	14	A	15	Z	16	17	7	8	0	0	9	0	3	X	1	W	1	2	1	26
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	
LER/RO REPORT NUMBER		EVENT YEAR		CAUSE CODE		CAUSE SUBCODE		COMPONENT CODE								COMP. SUBCODE		VALVE SUBCODE		SEQUENTIAL REPORT NO.		OCCURRENCE CODE		REPORT TYPE		REVISION NO.								
ACTION TAKEN		FUTURE ACTION		EFFECT ON PLANT		SHUTDOWN METHOD		HOURS								ATTACHMENT SUBMITTED		NPRD-4 FORM SUB.		PRIME COMP. SUPPLIER		COMPONENT MANUFACTURER												
C		Z		Z		Z		0 0 0 0								Y		N		N		W 1 2 1												

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 | A worn circuit breaker trip arm caused the problem. The overload time delay devices

1 1 | were transferred from this breaker to the spare DB-50 breaker. The spare breaker was

1 2 | then inspected, test operated and placed in service. "B" AFW pump was then satis-

1 3 | factorily tested in the manual and automatic modes and returned to service at 0151

1 4 | hours on April 12, 1978.

1	5	C	28	0	0	0	29	NA	30	A	31	OPERATOR OBSERVATION	32	NA	36	LOCATION OF RELEASE	37	Z	38	NA	39	NA	41	NA	43	NA	45	NA	44	NA	45	NA			
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		
FACILITY STATUS		% POWER		OTHER STATUS		METHOD OF DISCOVERY		DISCOVERY DESCRIPTION										ACTIVITY RELEASED		CONTENT OF RELEASE		AMOUNT OF ACTIVITY		PERSONNEL EXPOSURES		PERSONNEL INJURIES		LOSS OF OR DAMAGE TO FACILITY		PUBICITY		ISSUED		DESCRIPTION	
C		0 0 0		NA		A		OPERATOR OBSERVATION										Z		Z		NA		0 0 0		0 0 0		Z		Z		N		NA	

NAME OF PREPARER R. B. Starkey, Jr.

PHONE: (803) 332-1351

SUPPLEMENTAL INFORMATION

FOR

REPORTABLE OCCURRENCE 78-09 (REV. 1)

1. REPORT NO.: 50-261/78-09 (Rev. 1)
- 2a. REPORT DATE:
- 2b. OCCURRENCE DATE: April 11, 1978
3. FACILITY: H. B. Robinson Unit No. 2  
Hartsville, South Carolina 29550
4. IDENTIFICATION OF OCCURRENCE: At 0953 hours on April 11, 1978, "B" auxiliary feedwater pump failed to start on loss of main feedwater pressure while performing low power physics testing at 0% power. Manual attempts to start the pump from the RTGB were unsuccessful. "A" auxiliary feedwater pump was operable at the time. This constitutes a reportable occurrence per Technical Specifications Paragraph 6.9.2.b.2.
5. CONDITIONS PRIOR TO OCCURRENCE: The reactor was critical. The plant was at 0% power with low power physics testing in progress.
6. DESCRIPTION OF OCCURRENCE: "B" auxiliary feedwater pump failed to start upon loss of Main Feedwater Pressure at 0953 hours, April 11, 1978. Manual attempts to start the pump from the RTGB were unsuccessful. "B" AFW pump was then declared out of service with "A" AFW pump operable. Inspection revealed "B" pump's main circuit breaker was not closing properly due to a worn instantaneous trip mechanism lever. The overload devices from the old breaker (Serial No. 24Y495936, Code G) were changed to the spare breaker (Serial No. 24Y4959M4, Code P). The spare breaker was then inspected, test operated, and placed in service. "B" AFW pump was then test run satisfactorily and returned to service at 0151 hours, April 12, 1978.
7. DESIGNATION OF APPARENT CAUSE OF OCCURRENCE: "B" AFW pump's circuit breaker was attempting to close but a worn instantaneous trip lever prevented closure of the breaker. This problem was due to mechanical failure of a circuit breaker component. The breakers overload devices were removed and installed on the spare Westinghouse DB-50 breaker. The spare breaker was then inspected, test operated, and returned to service.
8. ANALYSIS OF OCCURRENCE: The worn pivots on the trip lever arm caused the arm to become lodged in such a position that the interlock mechanism was activated. This allowed the breaker to trip out immediately upon trying to close, thus not closing at all. No limiting conditions for operation were violated.

9. CORRECTIVE ACTION: The worn trip lever arm was replaced on the old breaker. It was then inspected and classified as the new spare breaker. The original spare breaker was inspected, test operated, and returned to service. "B" AFW pump was then test run satisfactorily and returned to service at 0151 hours, April 12, 1978. No future corrective action is contemplated at this time beyond normal maintenance procedures already in use.
10. FAILURE DATA: No previous occurrence of this type has been recorded at the plant.

UPDATE REPORT—PREVIOUS REPORT DATE 5-12-78  
LICENSEE EVENT REPORT

CONTROL BLOCK: 1 6 1

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0	1	S	C	H	B	R	2	2	0	0	-	0	0	0	0	0	0	0	0	3	4	1	1	1	1	4		5							
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							
LICENSEE CODE														LICENSE NUMBER										LICENSE TYPE										CAT 58	

CON'T

0	1	L	6	0	5	0	0	0	2	6	1	7	0	4	1	3	7	8	8									9			
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			
REPORT SOURCE		DOCKET NUMBER										EVENT DATE										REPORT DATE									

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 "B" auxiliary feedwater pump failed to start on command from the RTGB at 1545 hours,

0 3 April 13, 1978. "A" AFW pump was operable at the time. The instantaneous trip set-

0 4 tings were found to be actuating at 2800 to 2900 amperes and were reset to 4800 amperes.

0 5 No limiting conditions fro operation were violated. This constitutes a reportable

0 6 occurrence per Technical Specifications Paragraph 6.9.2.b.2.

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0	9	C	H	11	E	12	B	13	C	K	T	B	R	K	14	A	15	Z	16										
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	
SYSTEM CODE		CAUSE CODE		CAUSE SUBCODE		COMPONENT CODE										COMP. SUBCODE		VALVE SUBCODE											
LER/RO REPORT NUMBER		EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE										REPORT TYPE		REVISION NO.											
B		7 8		0 1 0		0 3										X		1											
ACTION TAKEN		FUTURE ACTION		EFFECT ON PLANT		SHUTDOWN METHOD		HOURS		ATTACHMENT SUBMITTED		NPRD-4 FORM SUB.		PRIME COMP. SUPPLIER		COMPONENT MANUFACTURER													
B		Z		Z		Z		0 0 0 0		Y		N		N		W 1 2 1													
33		34		35		36		37		40		41		42		43		44		45		46		47		48			

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 Worn valve seat washers caused the actuators to trip lower than the indicated values

1 1 on the calibration dials. The actuators were rebuilt and the breaker inspected and

1 2 test operated. "B" AFW pump was satisfactorily test operated and returned to service

1 3 at 1553 hours, April 14, 1978. Corrective action under consideration is to begin

1 4 periodic testing of these type of larger breakers.

1	5	C	28	0	0	0	29	NA	30	A	31	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
FACILITY STATUS		% POWER		OTHER STATUS		METHOD OF DISCOVERY										DISCOVERY DESCRIPTION												
C		0 0 0		NA		A										OPERATOR OBSERVATION												
ACTIVITY		CONTENT		AMOUNT OF ACTIVITY		LOCATION OF RELEASE																						
Z		Z		NA		NA																						
33		34		35		36																						
PERSONNEL EXPOSURES		TYPE		DESCRIPTION																								
0 0 0		Z		NA																								
37		38		39																								
PERSONNEL INJURIES		DESCRIPTION																										
0 0 0		NA																										
40		41																										
LOSS OF OR DAMAGE TO FACILITY		TYPE		DESCRIPTION																								
Z		NA																										
42		43																										
PUBLICITY		DESCRIPTION																										
N		NA																										
44		45																										
ISSUED																												
N																												
46																												

NAME OF PREPARER R. B. Starkey, Jr.

PHONE: (803) 332-1351

SUPPLEMENTAL INFORMATION

FOR

REPORTABLE OCCURRENCE 78-10 (REV. 1)

1. REPORT NO.: 50-261/78-10 (Rev. 1)
- 2a. REPORT DATE:
- 2b. OCCURRENCE DATE: April 13, 1978
3. FACILITY: H. B. Robinson Unit No. 2  
Hartsville, South Carolina 29550
4. IDENTIFICATION OF OCCURRENCE: "B" auxiliary feedwater pump failed to start on command from the RTGB at 1545 hours, April 13, 1978. The plant was at 0% power, performing low power physics tests. "A" AFW pump was operable at the time. This constitutes a reportable occurrence per Technical Specifications Paragraph 6.9.2.b.2.
5. CONDITIONS PRIOR TO OCCURRENCE: The reactor was critical at 0% power while performing low power physics tests.
6. DESCRIPTION OF OCCURRENCE: "B" AFW pump failed to start on command from the RTGB at 1545 hours, April 13, 1978. "A" AFW pump was operable at the time. The main circuit breaker for "B" AFW pump was found to be attempting to close and then immediately dropping back out. The spare breaker on-hand (the original in-service breaker of RO 78-09) was tested for "B" pump use with the same results. The spare was taken out and the present in-service breaker re-installed. Measurements indicated both breakers were functioning as intended, i.e., opening on overcurrent conditions. Westinghouse Electric Corporation personnel were called in to assist. They found the instantaneous trip coil actuators were tripping at 2800 - 2900 amperes which is well below the normal setting of 4800 amperes. The actuators on "B" breaker required minor repairs, i.e., valve seat washers replaced and the units cleaned. Westinghouse then tested and calibrated "B" breaker at 4800 amperes. Upon satisfactory test operation, "B" AFW pump was satisfactorily test operated and returned to service at 1553 hours, April 14, 1978. "A" AFW pump was then taken out of service and Westinghouse tested and calibrated "A" breaker. It was found to be tripping slightly low, also, and was reset to 4800 amperes and returned to service.
7. DESIGNATION OF APPARENT CAUSE OF OCCURRENCE: Worn valve seat washers in the instantaneous trip actuator units of "B" AFW pump circuit breaker affected the calibration settings for trip current, causing the actuators to trip at a lower current value than indicated on the calibration dials.

8. ANALYSIS OF THE OCCURRENCE: Worn internal parts caused the instantaneous trip settings to be lower than specified. Wear was attributed to higher than normal usage of the breaker. During hot shutdown conditions, this breaker is operated quite frequently due to the use of the AFW pumps to provide makeup level for the steam generators as water boils off. The large number of operations occurring at this time contribute to the greater than normal wear experienced at Robinson Plant. It should be noted that no limiting conditions for operation were violated.
9. CORRECTIVE ACTION: The trip coil actuators were rebuilt and the breaker inspected and test operated. "B" AFW pump was then satisfactorily test run in both manual and automatic modes and returned to service at 1553 hours, April 14, 1978. "A" AFW pump was then removed from service. It was inspected and test operated where one trip coil setting was found to be slightly low (4500 amperes) and was reset to 4800 amperes. After satisfactory test operation of the breaker, "A" AFW pump was test operated with good results. "A" AFW pump was returned to service at 1800 hours, April 14, 1978.

Future action under consideration at present is to begin periodic testing of these type of larger breakers.
10. FAILURE DATA: One similar occurrence of this type occurred on April 11, 1978 and was reported in HBR2-RO-78-09.