

**AEC DISTRIBUTION FOR PART 50 DOCKET MATERIAL**  
(TEMPORARY FORM)

CONTROL NO: 10611

FILE: \_\_\_\_\_

FROM: Carolina Power & Light Raleigh, NC 27602 EE Utley		DATE OF DOC 10-7-74	DATE REC'D 1012-74	LTR XX	TWX	RPT	OTHER
TO: Mr Moseley		ORIG 1 signed	CC	OTHER	SENT AEC PDR <u>XX</u> SENT LOCAL PDR <u>XX</u>		
CLASS	UNCLASS XXXXXX	PROP INFO	INPUT	NO CYS REC'D 1	DOCKET NO: 50-261		

DESCRIPTION:

Ltr trans the following:

**DO NOT REMOVE  
ACKNOWLEDGED**

ENCLOSURES:

Abnormal Occurrence: Abnormal Occurrence #  
74-20 on 9-26-74 concerning the failure of  
"B" Boric Acid Transfer Pump.....

PLANT NAME: H. B. Robinson #2

**FOR ACTION/INFORMATION 10-15-74 ehf**

BUTLER (L) W/ Copies	SCHWENCER (L) W/ Copies	ZIEMANN (L) W/ Copies	REGAN (E) W/ Copies
CLARK (L) W/ Copies	STOLZ (L) W/ Copies	DICKER (E) W/ Copies	✓ EAR (L) W/ Copies
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**INTERNAL DISTRIBUTION**

<del>REG FILE</del> ✓ AEC PDR ✓ OGC, ROOM P-506A ✓ MUNTZING/STAFF ✓ CASE GIAMBUSO BOYD MOORE (L) (BWR) DEYOUNG (L) (PWR) SKOVHOLT (L) GOLLER (L) P. COLLINS DENISE ✓ REG OPR ✓ FILE & REGION (3) ✓ MORRIS ✓ STEELE	<u>TECH REVIEW</u> ✓ SCHROEDER ✓ MACCARY ✓ KNIGHT ✓ PAWLICKI ✓ SHAO ✓ STELLO ✓ HOUSTON ✓ NOVAK ✓ ROSS ✓ IPPOLITO ✓ TEDESCO ✓ LONG ✓ LAINAS ✓ BENAROYA ✓ VOLIMER	<u>DENTON</u> GRIMES GAMMILL KASTNER BALLARD SPANGLER  <u>ENVIRO</u> MULLER DICKER KNIGHTON YOUNGBLOOD REGAN PROJECT LDR  <u>HARLESS</u>	<u>LIC ASST</u> DIGGS (L) GEARIN (L) GOULBOURNE (L) KREUTZER (E) LEE (L) MAIGRET (L) REED (E) SERVICE (L) SHEPPARD (L) SLATER (E) SMITH (L) ✓ TEETS (L) WILLIAMS (E) WILSON (L)	<u>A/T IND</u> BRAITMAN SALTZMAN B. HURT  <u>PLANS</u> MCDONALD CHAPMAN DUBE w/input E. COUPE  ✓ D. THOMPSON (2) ✓ KLECKER ✓ EISENHUT
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**EXTERNAL DISTRIBUTION**

✓ 1 - LOCAL PDR <u>Hartsville, SC</u>	1 - NATIONAL LABS	1 - PDR-SAN/LA/NY
✓ 1 - TIC (ABERNATHY) (1)(2)(10)	1 - ASLBP (E/W Bldg, Rm 529)	1 - BROOKHAVEN NAT LAB
✓ 1 - NSIC (BUCHANAN)	1 - W. PENNINGTON, Rm E-201 GT	1 - G. ULRICKSON, ORNL
1 - ASLB	1 - B&M SWINEBROAD, Rm E-201 GT	1 - AGMED (RUTH GUSSMAN) Rm B-127 GT
1 - Newton Anderson	1 - CONSULTANTS	1 - R. D. MUELLER, Rm E-201 GT
✓ 5-ACRS SENT TO LIC ASST TEETS	NEWMARK/BLUME/AGBABIAN	

BN

# REGULATORY DOCKET FILE COPY

## CP&L

Carolina Power & Light Company

October 7, 1974

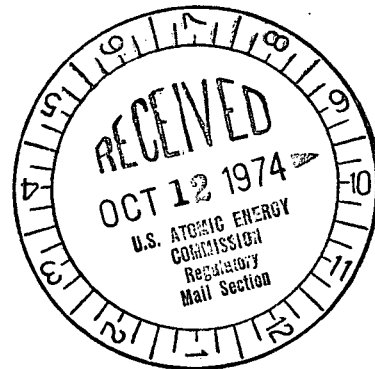
50-261

File: NG-3513 and NG-3514 (R)

Serial: NG-74-1207

Mr. Norman C. Moseley, Director  
Directorate of Regulatory Operations  
U. S. Atomic Energy Commission  
Region II, Suite 818  
230 Peachtree Street, N.W.  
Atlanta, Georgia 30303

Mr. Edson G. Case, Acting Director  
Directorate of Licensing  
U. S. Atomic Energy Commission  
Office of Regulation  
Washington, D. C. 20545

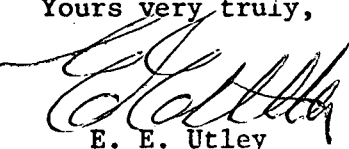


Dear Sirs:

H. B. ROBINSON UNIT NO. 2  
LICENSE DPR-23  
FAILURE OF "B" BORIC ACID TRANSFER PUMP

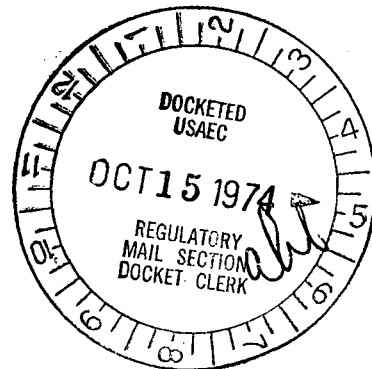
In accordance with Section 6.6.2 of the Technical Specifications for H. B. Robinson Unit No. 2, the attached Abnormal Occurrence Report is submitted for your information. This report fulfills the requirements for a written report within ten days of an abnormal occurrence and is in accordance with the format set forth in Regulatory Guideline 1.16.

Yours very truly,

  
E. E. Utley  
Vice-President  
Bulk Power Supply

RWL:DBW:mvp  
Attachment

cc: Messrs. N. B. Bessac  
W. B. Howell  
J. B. McGirt  
D. V. Menscer  
D. B. Waters



10611

## ABNORMAL OCCURRENCE REPORT

1. Report No. 74-20
- 2a. Date October 4, 1974
- 2b. Occurrence Date September 26, 1974
3. Facility H. B. Robinson Unit No. 2  
Hartsville, South Carolina

4. Identification of Occurrence

Failure of "B" Boric Acid Transfer Pump constituting an abnormal occurrence as defined in Section 1.8.d of the Technical Specifications.

5. Conditions Prior to Occurrence

The plant was operating at 100% nuclear power with 650 M.W. net load on the generator. "A" boric acid transfer pump was lined up for recirculating "A" boric acid tank with the boron injection tank. "B" boric acid transfer pump was lined up to the boric acid blender.

6. Description of Occurrence

At 0650 hours "A" boric acid transfer pump was started to recirculate "A" boric acid tank with the boron injection tank. "B" boric acid transfer pump was started at 0843 hours to recirculate "B" boric acid tank. At 0958 hours the automatic makeup to the volume control tank started and the operator noted there was no boric acid flow. Investigation verified there was no discharge pressure from "B" boric acid transfer pump, and the pump was making an unusual noise. "A" boric acid transfer pump was lined up to blend and recirculate the boron injection tank. "B" boric acid transfer pump was declared inoperable at 1005 hours.

7. Designation of Apparent Cause of Occurrence

The pump was checked electrically and found to be sound. Therefore, the problem appeared to be of a mechanical nature. Investigation revealed the shaft had broken at its juncture with the rotor. The front bearing showed excessive wear, and the part of the shaft housed by the bearing was galled and scored. See attached figure for point of failure. The severe bearing wear resulted in shaft fretting and ultimate failure. No failure of this type has previously been experienced. There is no indication of a design, material, or other generic problem related to the breakage.

8. Analysis of Occurrence

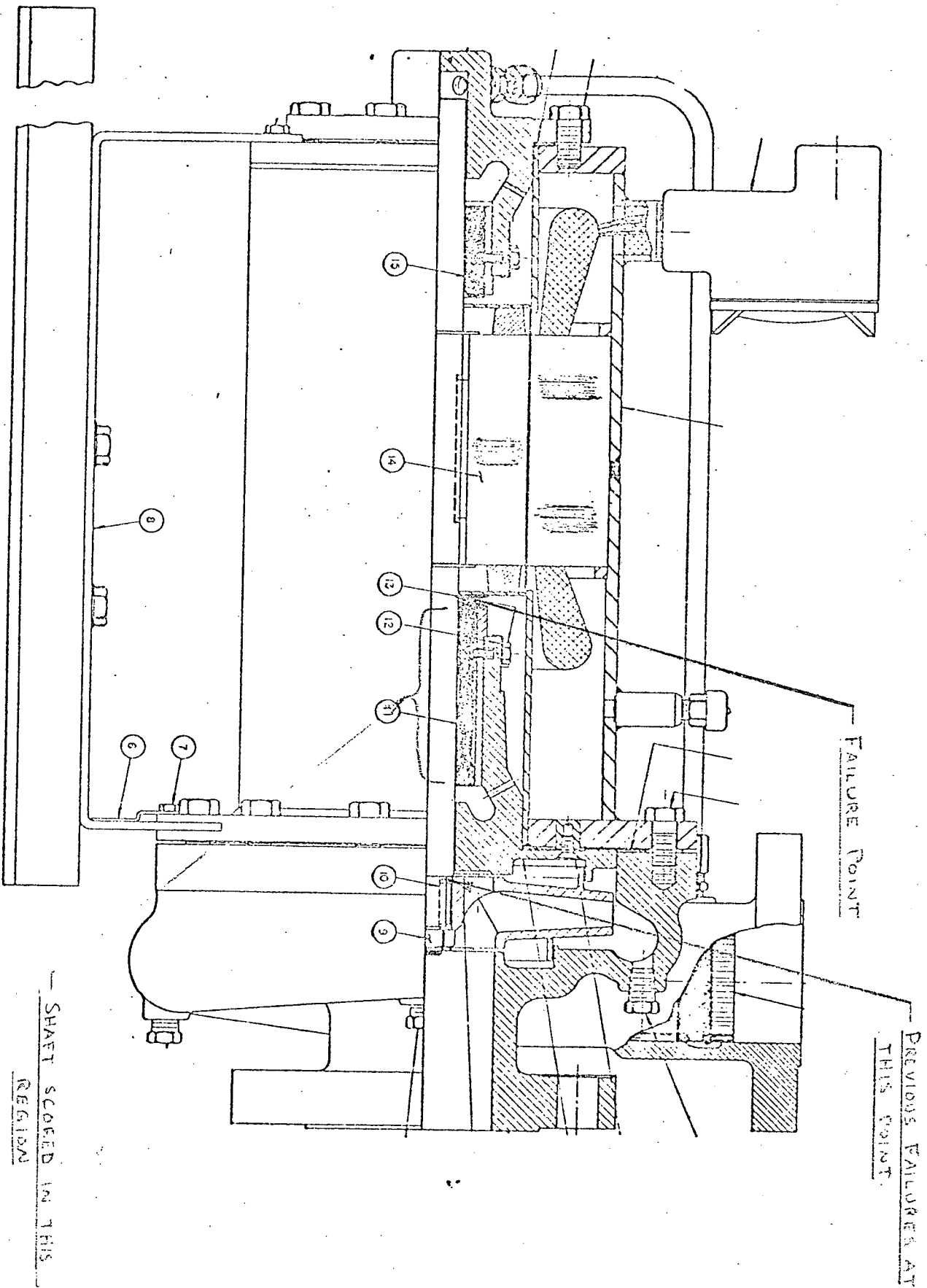
Upon determination that the subject pump would not meet its design function, the "A" boric acid transfer pump was verified operable. Therefore, the systems capability was not impaired, and plant operation at full power was continued. As required by Technical Specification paragraph 3.2.3.a, the failed pump had to be returned to service within 24 hours to continue power operation. The pump was duly replaced in this required time period. The occurrence did not result in a release of radioactive materials nor did it endanger the public health and safety.

9. Corrective Action

The "B" boric acid transfer pump was replaced with a spare pump and returned to service at 1643 hours on September 26, 1974. Evaluation of this and previous failures is continuing. An analysis of operational parameters indicates a point of high stress at the keyway of the pump shaft. A modification is being prepared to stub shaft the pumps and remove the stress point by machining a taper in the shaft impeller keyway region.

10. Failure Data

8/15/73 - Pump failed due to broken shaft in vicinity of shaft key.  
12/4/73 - Pump failed due to broken shaft in vicinity of shaft key.  
3/20/74 - Pump failed due to broken shaft in vicinity of shaft key.  
8/26/74 - Pump failed due to broken shaft at rotor (pump side).



OUTLINE OF GORIC ACID STAIN IN OIL

SKETCH 1 - ABNORMAL

OCCURRENCE 74-20

**CP&L**

**Carolina Power & Light Company**

**H. B. ROBINSON STEAM ELECTRIC PLANT**  
Post Office Box 790  
Hartsville, South Carolina

September 27, 1974

Robinson File No. 2-0-4-a-1

Mr. Norman C. Mowley, Director  
U. S. Atomic Energy Commission  
Directorate of Regulatory Operations  
Region II - Suite 818  
230 Peachtree Street, N.W.  
Atlanta, Georgia 30303

Mr. Edson Case, Acting Director  
Directorate of Licensing (Office Of Regulation)  
U. S. Atomic Energy Commission  
Washington, D. C. 20545

Dear Sirs:

In accordance with section 6.6.2 of the Robinson Plant Technical Specifications, the following abnormal occurrence is reported.

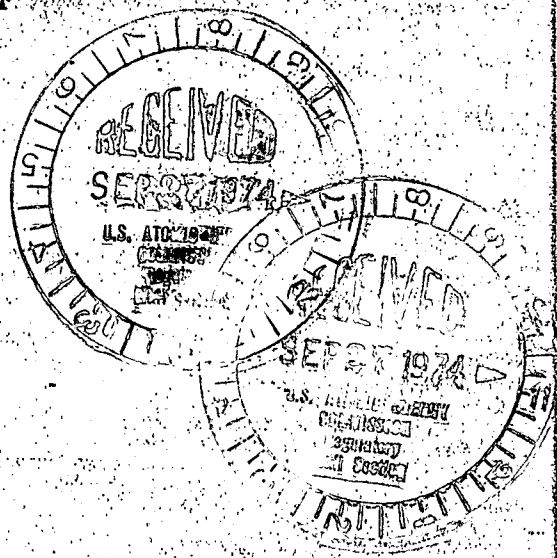
At 0958 hours on September 26, 1974, when the OVCS called for automatic makeup to the Volume Control Tank, the Control Operator noted that there was no boric acid flow to the tank. Investigation revealed that "A" Boric Acid Transfer Pump, which was lined up to blend for automatic makeup, had no discharge pressure and was noisy. "A" Boric Acid Transfer Pump was immediately lined up to blend and was test operated satisfactorily. Disassembly revealed a broken shaft in the motor portion of "A" pump. A spare pump was installed, and the system was returned to normal at 1643, September 26, 1974.

This was reported to Mr. Herb Whitener of AEO DRO on September 27, 1974.

Yours very truly,

*Jack B. McPart*  
Jack B. McPart, Manager  
H. B. Robinson-SKO Plant

ACT:ala



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