

**NRC CONTRIBUTION FOR PART 50 DOCKET MATERIAL
(TEMPORARY FORM)**

CONTROL NO: 12964

FILE: INCIDENT REPORT FILE

FROM: Carolina Power & Light Co Raleigh, N.C. E.E. Utley		DATE OF DOC 11-11-75	DATE REC'D 11-12-75	LTR XXX	TWX	RPT	OTHER
TO: Mr. Norman Moseley		ORIG 1 Signed	CC 0	OTHER	SENT AEC PDR XXX SENT LOCAL PD XXX		
CLASS	UNCLASS XXX	PROP INFO	INPUT	NO CYS REC'D 1	DOCKET NO: 50-261		
DESCRIPTION: Letter trans the following.....				ENCLOSURES: Abnormal Occurrence # 75-16, on 10-28-75, Concerning two inoperable service water booster pumps..... (1 Copy Received)			
PLANT NAME: H.B. Robinson # 2							

FOR ACTION/INFORMATION

SAB 11-17-75

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[Handwritten signature]



Carolina Power & Light Company

November 11, 1975

Regulatory

File Cya

File: NG-3513 (R)

Serial: NG-75-2001

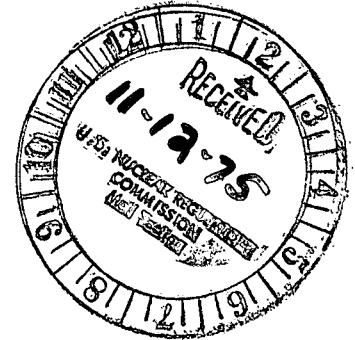
Mr. Norman C. Moseley, Director
Directorate of Regulatory Operations
U. S. Nuclear Regulatory Commission
Region II, Suite 818
230 Peachtree Street, N. W.
Atlanta, Georgia 30303

Dear Mr. Moseley:

H. B. ROBINSON UNIT NO. 2

LICENSE NO. DPR-23

TWO SERVICE WATER BOOSTER PUMPS INOPERABLE



In accordance with 6.6.2.a 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 requirement 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,

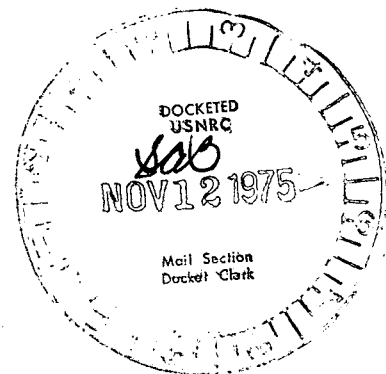
E. E. Utley

Vice-President
Bulk Power Supply

JMB:mc

Attachment

cc: Messrs. D. C. Knuth
W. G. McDonald



12964

ABNORMAL OCCURRENCE REPORT

1. Report No. - 50-261/75-16
- 2a. Report Date - November 4, 1975
- 2b. Occurrence Date - October 28, 1975
3. Facility - H. B. Robinson Unit No. 2
Hartsville, South Carolina 29550
4. Identification of Occurrence

Failure of Service Water Booster Pump "B" to start. This constitutes an abnormal occurrence as defined in Technical Specification 1.8.b. (violation of a limiting condition of operation).

5. Conditions Prior to Occurrence

The reactor was operating normally at full rated power. All systems were normal with the exception of the service water system. As a result of maintenance operations on a service water valve, one service water loop was out of service and three pumps were operating.

6. Description of Occurrence

While operating with three service water pumps and one service water header, it was decided to shift the operation of the service water booster pumps. Service water booster pump "A" was operating. Action was taken to start service water booster pump "B", and it was verified operable and running at 1228 hours on October 28, 1975. At 1229 service water booster pump "A" was stopped and a stopped indication was received. Immediately after "A" pump stopped the operator received indication that "B" pump also stopped. The operator immediately attempted to restart "A" pump and received a running indication light followed by an off indication light. He then held the control switch in the start position and the breaker tripped on overcurrent. The operator attempted to restart "B" pump and received a run indication light then an off indication light. He held "B" pump control switch in the start position and the breaker tripped on overcurrent. Therefore, both pumps were out of service at that time which is a violation of Technical Specification 3.3.4.1.a. The operating containment recirculation fans were stopped due to lack of cooling water.

At 1230 hours, the breakers on both service water booster pumps were reset. The operator started "A" pump and received indication that it was operating. He then restarted the containment recirculation fans. At this time, one service water booster pump was operable and there was no requirement to proceed with placing the plant in hot shutdown.

At 1417, the operator attempted to restart "B" service water booster pump and the breaker tripped. He then started "C" service water pump so that all service water pumps would be operating. At 1424, he attempted to restart "B" service water booster pump and the breaker tripped. "B" pump was rotated by hand and was found to be free. Maintenance personnel checked the pump and breaker and found both to be normal. At 1552 hours, "B" service water booster pump was restarted and operated normally. The idle service water header was returned to service at 1815 hours. "B" service water booster pump was thus returned to service within the 24 hours provided by Technical Specification 3.3.4.2.c.

7. Designation of Apparent Cause of Occurrence

The apparent cause of the initial loss of "B" pump followed by the loss of "A" pump was actuation of the pump suction pressure switches provided to protect the pumps from low NPSH. It has not been determined whether the low pressure pump trips were a result of flow instabilities, problem with the pressure switches or a combination of both. Unstable flow conditions could have been caused by back leakage through the booster pumps' discharge check valves. These check valves are installed at the discharge of each pump to prevent back flow through the idle pump. It is suspected that these check valves leak. The apparent cause of the pump breaker tripping on overcurrent was the attempted pump starts with a back flow through the pumps. This unstable condition could have also contributed to actuation of the suction pressure switches.

8. Analysis of Occurrence

The service water booster pumps provide a pressure boost to prevent in-leakage of contamination to the service water should an accident occur in which the containment pressure increases. Examination revealed that there were no equipment failures. The trips resulted from pump protection instrumentation and pressure/flow instabilities. No damage resulted from this occurrence and at no time was there a hazard to the general public.

9. Corrective Action

After the loss of both pumps due to breaker tripping, the containment recirculation fans were stopped to prevent overheating the motors. The breaker on "A" pump was reset and the pump started. "B" pump was examined for electrical faults and mechanical binding, but no abnormal condition was identified. No adjustments were made to either pump. It was decided that flow/pressure instabilities created the trips. Since the Technical Specifications allows one service water header to be removed from service for only 24 hours while operating at power, the probability of recurrences of a flow pressure instability in conjunction with pump shifting is remote. The suction pressure switches and discharge check valves will be checked and necessary adjustments or repairs made during the November refueling outage.

10. Failure Data

No previous failure of this type has occurred. The following information is provided for "B" Service Water Booster Pump.

Pump Model -	8CNG 104
Impeller -	11 13/16"
Manufacturer -	Worthington
Motor Model -	TBDP
Horsepower -	125
Manufacturer -	Westinghouse

RHC:mc