



Carolina Power & Light Company

July 25, 1977

FILE: NG-3516 (R)

SERIAL: NG-77-828

Regulatory

113-07

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



H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET 50-261
LICENSE NO. DPR-23
LICENSEE EVENT REPORT 77-15

Dear Mr. Moseley:

In accordance with Section 6.9.2.a of the Technical Specifications for the H. B. Robinson Steam Electric Plant, Unit 2, the attached Licensee Event Report is submitted. This report fulfills the requirement for a written report within fourteen (14) days of a reportable occurrence and is in accordance with the format set forth in Regulatory Guide 1.16, Revision 4.

Yours very truly,

H. R. Banks
Manager
Nuclear Generation

WH:tme

Attachment

cc: Messrs. W. G. McDonald
E. Volgenau

772200225

LICENSEE EVENT REPORT

CONTROL BLOCK:

(PLEASE PRINT ALL REQUIRED INFORMATION)

LICENSEE NAME [01] S C H B R 2										LICENSE NUMBER [0] [0] [0] [0] [0] [0] [0] [0] [0] [0]										LICENSE TYPE [4] [1] [1] [1] [0]					EVENT TYPE [0] [1]	
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	
[01] CONT			CATEGORY			REPORT TYPE		REPORT SOURCE		DOCKET NUMBER					EVENT DATE					REPORT DATE						
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	

EVENT DESCRIPTION

[02] While operating at 100% power, "B" SWBP breaker tripped open while "A" SWBP was out of																															
[03] service. Immediate action was taken to bring plant to hot shutdown condition. "B"																															
[04] SWBP breaker was reset, closed and pump returned to service after which plant load was																															
[05] increased to 100%. Both pumps being out of service while at power is a violation of																															
[06] Technical Specification paragraph 3.3.4.1.a and is a Reportable Occurrence per																															

SYSTEM CODE				CAUSE CODE		COMPONENT CODE						PRIME COMPONENT SUPPLIER		COMPONENT MANUFACTURER				VIOLATION							
[07] W A				[E]		[C] [K] [T] [B] [K] [R]						[N]		[W] [1] [2] [0]				[Y]							
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

CAUSE DESCRIPTION

[08] Worthington Corporation SWBP 8CNG-104 Double Volute pump breaker tripped open due to																															
[09] improper setting for thermal overload device. Device was reset to 115% and pump was																															
[10] returned to service.																															

FACILITY STATUS			% POWER			OTHER STATUS			METHOD OF DISCOVERY			DISCOVERY DESCRIPTION													
[11] E			[1] [0] [0]			N/A			[A]			N/A													
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

FORM OF ACTIVITY RELEASED			CONTENT OF RELEASE			AMOUNT OF ACTIVITY			LOCATION OF RELEASE																
[12] Z			[Z]			N/A			N/A																
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

PERSONNEL EXPOSURES

NUMBER			TYPE		DESCRIPTION																								
[13] 0 0 0			[Z]		N/A																								
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				

PERSONNEL INJURIES

NUMBER			DESCRIPTION																												
[14] 0 0 0			N/A																												
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						

OFFSITE CONSEQUENCES

[15] N/A																															
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						

LOSS OR DAMAGE TO FACILITY

TYPE			DESCRIPTION																												
[16] Z			N/A																												
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						

PUBLICITY

[17] N/A																															
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						

ADDITIONAL FACTORS

[18] paragraph 6.9.2.a.(2) (HBR2 RO 77-15).																															
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						

[19]																															
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						

NAME: J. B. McGirt

PHONE: (803) 332-1351

Supplementary Information for
Reportable Occurrence 77-15

1. Report No.: 50-261/77-15
- 2a. Report Date: July 19, 1977
- 2b. Occurrence Date: July 10, 1977
3. Facility: H. B. Robinson Unit No. 2, Hartsville, South Carolina 29550
4. Identification of Occurrence: At 1107 hours on July 10, 1977 "B" Service Water Booster Pump (SWBP) supply breaker tripped open on thermal overload which removed "B" SWBP from service. "A" SWBP was also out of service for repairs at this time. This is a violation of Technical Specification paragraph 3.3.4.1.a and is a Reportable Occurrence per paragraph 6.9.2.a.(2).
5. Conditions Prior to Occurrence: The plant was operating at 100% power and there were no operations in progress that could be attributed to the occurrence.
6. Description of Occurrence: The following is a description of the sequence of events.
 - a. At 0749 hours on July 10, 1977 "B" SWBP breaker tripped open on thermal overload. "A" pump was then started.
 - b. At 0823 hours "B" pump's breaker thermal overload was reset and the pump was started again. "A" pump was stopped at this time, and it was noted that the pump was rotating slowly in the reverse direction after being stopped at the controller.
 - c. At 0825 hours "A" pump was again placed in service and "B" pump was stopped.
 - d. At 1018 hours "A" pump was taken out of service to perform maintenance on its check valve which apparently was leaking past its valve seat and causing "A" pump to rotate in the reverse direction while "B" pump was operating. At this time "B" pump was placed back in service.
 - e. At 1107 hours the "B" pump breaker again tripped on thermal overload while "A" pump was still out of service. Therefore, action was taken to bring the plant to hot shutdown conditions.
 - f. At 1115 hours, while the plant load was being reduced to facilitate hot shutdown, the "B" pump breaker thermal overload was reset and the pump was started again. At this time, the plant load was again increased to 100% power.
 - g. At 1121 hours, "A" pump was returned to service and "B" pump was stopped. "B" pump was removed from service at 1205 hours to investigate the cause of its breaker tripping on thermal overload.

- h. At 1304 hours, "B" pump's breaker thermal overload setting was changed from 85% to 115%. It was determined that this setting was too low and that with the characteristics of the thermal element the breaker would always trip under full load current for this setting. It was also determined that 115% would be the proper setting by engineering evaluation.
 - i. At 1310 hours "B" pump was started for a test run to ensure its breaker would not trip. "A" pump was stopped.
 - j. At 2000 hours "B" pump was declared back in service.
7. Designation of Apparent Cause of Occurrence: The cause of the occurrence is attributed to the improper low setting of the "B" pump breaker thermal overload device.
8. Analysis of Occurrence: This occurrence would have been avoided if the breaker thermal overload device setting had been properly set at installation. Although the proper heater element was utilized, its trip point range can be adjusted to suit the specific application. A recent plant breaker coordination study addressed several changes that were required for heater elements; however, the detail for thermal element settings was not provided.

Normally there is no percentage adjustment required for thermal elements. The element is selected based on the operating electrical current range of the load. If the load's current exceeds the value of a thermal element range the next higher range value is selected. This is not possible with the SWBP since it utilizes the highest value thermal element. Thus to operate the load within the range of the thermal element, its range adjustment had to be increased. This is a problem unique to the SWBP's only.

9. Corrective Action: By increasing the setting of the "B" pump breaker thermal overload device, the pump motor can operate continuously at its full load current and its breaker will not trip. In addition, the setting is not so high that the pump's motor would be damaged if it were to be operated continuously just below the new setting. Thus, the pump's reliability will be increased while adequate motor electrical protection is maintained.

In addition, "A" pump's breaker setting will be set to the same value as the "B" pump breaker.

10. Failure Data: Similar occurrences to this event were reported on October 28, 1975 and June 26, 1977.

RECEIVED DOCUMENT
PROCESSING UNIT

1977 AUG 5 PM 1 55

77 JUL 27 P12:05
ATLANTA, GEORGIA
AND REGION II