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Carolina Power & Light Company

August 15, 1974

File: NG-3513 and NG-3514

Serial: NG-74-1042

Mr. Edson Case, Acting Director 0 - 261 Directorate of Licensing Office of Regulation U. S. Atomic Energy Commission Washington, D. C. 20545

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

Dear Sirs:

H. B. ROBINSON UNIT NO. 2 LICENSE DPR-23 FAILURE OF HVH UNIT

AUG201974 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 iscin accordance with the format set forth in Regulatory Guideline 1.16.

Yours very truly,

E. E. Utley

Vice-President: Bulk Power Supply

ACT:mvp Attachment

REGULATORY DOCKET FILE COPY

cc: Messrs. N. B. Bessac W. B. Howell

J. B. McGirt

D. V. Menscer

D. B. Waters

8622

336 Fayetteville Street • P. O. Box 1551 • Raleigh, N. C. 27602

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USAEC

ABNORMAL OCCURRENCE REPORT

1. Report No.

50-261/74-16

2a. Date

August 14, 1974 August 6, 1974

- 2b. Occurrence Date
 - 3. Facility

H. B. Robinson Unit No. 2 Hartsville, S. C. 29550

4. Identification of Occurrence

Failure of HVH Unit

5. Conditions Prior to Occurrence

The plant was operating normally at 100% reactor power. Three Containment Air Recirculation (HVH) Units were running.

6. Description of Occurrence

At 0850, August 6, 1974, while operating at power with HVH Units No. 1, 3 and 4 running, a fourth HVH (No. 2) was started to afford more air circulation in Containment. Nine minutes later, at 0859, HVH-4 tripped on low air flow. The unit was restarted two times and tripped on low air flow each time after running for a few minutes. HVH-4 was declared inoperable, and both Containment Spray Pumps and their associated valves were demonstrated to be operable as required by Technical Specifications.

7. Description of Apparent Cause of Occurrence

Investigation revealed that the two flow switches on HVH-4 were chattering. These flow switches are paddle type switches mounted in the vertical ducting of the fan discharge. They are electrically wired in parallel such that a low flow condition on either is sufficient after a twenty-second time delay to trip the fan. The switches were inspected and found to be in good condition.

Each of the four HVH Units discharges into the ventilation ring header above the operating deck in Containment. Testing revealed that when all four units were run simultaneously, the air turbulence and vibration increased enough to cause the flow switches in the HVH-4 discharge duct to chatter. The continuous and simultaneous chattering of these switches was apparently sufficient to satisfy the twenty-second time delay feature of the relay which trips the fan.

The HVH Unit flow switches have been observed to chatter in the past (without tripping the units), and some switches have been relocated in an attempt to place them in more stable flow areas of the ducting. However, this is a trial-and-error procedure, and, due to the high sensitivity of the switches, has not been wholly satisfactory.

8. Analysis of Occurrence

The safety of plant operation was not jeopardized since three HVH Units were operable, and only two are required under accident conditions. In addition, during LOCA conditions the density of the air being pumped is approximately three times normal. Since the low switches are the paddle type and react to the mass of air passing them, it is likely that the switches on HVH-4 would have indicated positive flow and permitted the fan to operate under LOCA conditions.

9. Corrective Actions

- A. The low flow trip for HVH-4 was disabled electrically, and the fan was tested and returned to service at 1747 on August 6, 1974.
- B. Consideration is being given to permanently removing the low flow trip feature from the HVH Units.

10. Failure Data

- A. There have been no previous failures of HVH Units due to low flow.
- B. The switches are McDonnell No. AF 1 Air Flow switches manufactured by McDonnel & Miller ITT.