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FORWARDING LICENSEE EVENT REPT (RO 50-261/78-014) ON 05/19/78 CONCERNING AUXILIARY FEEDWATER PUMP TRIPPED DUE TO OVERSPEED, CAUSED BY GOVERNOR LIMITER ON STEAM DRIVEN SET TO HIGH. . . W/ATT.

PLANT NAME: H B ROBINSON - UNIT 2

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June 2, 1978

FILE: NG-3516 (R) SERIAL: GD-78-1520

Mr. James P. O'Reilly, Director
U. S. Nuclear Regulatory Commission
Region II, Suite 1217
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 78-014

Dear Mr. O'Reilly:

In accordance with Section 6.9.2.b 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 thirty (30) days of a reportable occurrence and is in accordance with the format set forth in NUREG-0161, July, 1977.

Yours very truly,

H. R. Banks
Manager
Nuclear Generation

DCS:tme*

Attachment

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

A002
S/1

NRC FORM 366
(7-77)

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01 LICENSEE CODE: S C H B R 2 (2) LICENSE NUMBER: 0 0 - 0 0 0 0 0 - 0 0 (3) LICENSE TYPE: 4 1 1 1 1 (4) CAT (5)

CON'T 01 REPORT SOURCE: L (6) DOCKET NUMBER: 0 5 0 - 0 2 6 1 (7) EVENT DATE: 0 5 1 9 7 8 (8) REPORT DATE: 0 6 0 2 7 8 (9)

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 The steam driven Auxiliary Feedwater Pump (AFP) was being started up less than one
03 hour after operating satisfactorily for an Operating Work Permit (OWP) so valve
04 V2-16A (Motor Driven AFP Discharge Valve to A S/G) could be cleared for maintenance
05 personnel. The breaker had been turned off on Valve V2-16A and tagged, but the
06 clearance had not been issued when the steam driven AFP tripped due to overspeed
07 This left no flow path to feed AFW to A S/G and is a violation of Technical Specifi-
08 cations, Paragraph 3.4.1(d).

09 SYSTEM CODE: C H (11) CAUSE CODE: D (12) CAUSE SUBCODE: Z (13) COMPONENT CODE: M E C F U N (14) COMP. SUBCODE: Z (15) VALVE SUBCODE: Z (16)

(17) LER/RO REPORT NUMBER: EVENT YEAR: 7 8 — SEQUENTIAL REPORT NO.: 0 1 4 / OCCURRENCE CODE: 0 3 REPORT TYPE: L — REVISION NO.: 0

ACTION TAKEN: E (18) FUTURE ACTION: Z (19) EFFECT ON PLANT: B (20) SHUTDOWN METHOD: Z (21) HOURS (22): 0 0 0 0 ATTACHMENT SUBMITTED: Y (23) NPRD-4 FORM SUB.: Y (24) PRIME COMP. SUPPLIER: N (25) COMPONENT MANUFACTURER: W 2 9 0 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 The adjustment of the governor limiter on the steam driven AFP appeared to be set too
11 high which allowed the pump to overspeed and trip when the pump flow was suddenly
12 stopped during timing of its Discharge Valve V2-14A. The governor limiter was
13 readjusted and the steam driven AFP tested satisfactorily.
14

15 FACILITY STATUS: E (28) % POWER: 1 0 0 (29) OTHER STATUS (30): NA METHOD OF DISCOVERY: B (31) DISCOVERY DESCRIPTION (32): In-Service Inspection

16 ACTIVITY RELEASED: Z (33) CONTENT OF RELEASE: Z (34) AMOUNT OF ACTIVITY (35): NA LOCATION OF RELEASE (36): NA

17 PERSONNEL EXPOSURES NUMBER: 0 0 0 (37) TYPE: Z (38) DESCRIPTION (39): NA

18 PERSONNEL INJURIES NUMBER: 0 0 0 (40) DESCRIPTION (41): NA

19 LOSS OF OR DAMAGE TO FACILITY (43) TYPE: Z (42) DESCRIPTION: NA

20 PUBLICITY ISSUED: Z (44) DESCRIPTION (45): NA

NRC USE ONLY

NAME OF PREPARER: A. C. Tollison, Jr. PHONE: (919) 457-6701

GPO 917-926

SUPPLEMENTAL INFORMATION FOR REPORTABLE OCCURRENCE 78-14

1. Report No.: 50-261/78-14

2a. Report Date:

2b. Occurrence Date: May 19, 1978

3. Facility: H. B. Robinson Unit No. 2, Hartsville South Carolina

4. Identification of Occurrence: On May 19, 1978, the steam driven auxiliary feedwater pump (AGP) tripped due to overspeed while the discharge valve to "A" steam generator (S/G) from the motor driven AFP was inoperative which left no flow path to "A" S/G. This is a violation of Technical Specification, Paragraph 3.4.1(d) resulting in operation in a degraded mode permitted by Specification 3.4.3. This event was originally reported in accordance with immediate notification requirements. It was later determined that the event required 30-day reporting in accordance with Technical Specification 6.9.2.b.2.

5. Conditions Prior to Occurrence: The plant was operating at 100% power. The motor driven discharge valve V2-16A was in the process of being cleared for maintenance. The steam driven discharge valve V2-14A had been test operated just previously but was being cycled again for an ISI timing test.

6. Description of the Occurrence: On May 19, 1978, mechanical maintenance requested a clearance of V2-16A (motor driven auxiliary feedwater to "A" S/G). The steam driven auxiliary feedpump and associated valves were tested as per the Operating Work Permit (OWP) and an operator was dispatched to turn off the breaker on valve V2-16A and tag it out of service. During this period it was realized that an ISI timing test of valve V2-14A (steam driven auxiliary feedwater discharge valve to "A" S/G) was needed and this test was implemented. Meanwhile, the operator in the field notified the control room that valve V2-16A breaker was off. Minutes later as valve V2-14A closed at the end of its timing test, the steam driven AFP tripped due to overspeed.

7. Designation of Apparent Cause of Occurrence: During previous maintenance of the steam driven AFP overspeed trip, the limiter on the mechanical governor had been adjusted high so the overspeed trip could be tested. The limiter adjustment on the Woodard governor is a knob type screw adjustment which can limit the speed of the steam turbine driving the AFP. It is normally set to some value below the overspeed trip. This is done to prevent the speed surge on starting, or when suddenly going to a reduced flow condition from causing the speed to approach the overspeed trip point. This limiter speed is normally not reached because the turbine speed is regulated below that limit by the pump discharge pressure input to the governor.

7. Designation of Apparent Cause Of Occurrence: (Continued)

It appears that after the above test, however, the limit adjustment of the governor was left set to close to the trip speed. Therefore, when flow through this pump was reduced suddenly, during timing of the valve V2-14A, the pump did overspeed and tripped.

8. Analysis of Occurrence: Due to the improper setting on the speed limiter of the steam driven "A" feedwater pump governor cycling of the pump discharge valve V2-14A resulted in tripping of the pump. Since the motor driven AFW pumps discharge valve V2-16A was being cleared for maintenance, this resulted in the inability to feed "A" steam generator with any auxiliary feedwater pumps. Normal feed at the time was being supplied by the main feedwater pumps. A violation of a limiting condition for operation was believed to have occurred and a reduction in power of 3/4 percent per minute was started. The breaker to valve V2-16A which had not been disabled was returned to service, the power reduction was halted at 95% and the plant was returned to full power. Auxiliary feedwater to S/G "B" and "C" was available during this period.

It was later determined that no violation of the limiting condition for operation had occurred, however, operation in a degrade mode permitted by Technical Specifications did result until valve V2-16A was returned to service.

9. Corrective Action: The speed limiter was readjusted to its correct setting and the system was returned to service. The speed limiter has a sign near it to advise all personnel not to move the setting unless authorized by the shift foreman.

The OWP regarding this limiter and the governor system will be revised to incorporate a test to ensure proper setting on the limiter prior to returning the pump to service.

10. Failure Date: LER 74-28: Overspeed Trip of Steam Driven Auxiliary Feedwater Pump.