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A Main Feedwater (CF) System Isolation occurred on May 11, 1986, at 0435 hours. Steam Generator (S/G) 2B was being fed with the CF Control Bypass Valve in the manual mode because level could not be controlled with the valve in the automatic mode. The S/G's level increased and a CF Isolation occurred on high-high S/G level. The one operating CF Pump tripped and both Motor Driven Auxiliary Feedwater (CA) Pumps started automatically. The CF Isolation was subsequently reset and a CF Pump was restarted. Almost immediately, another CF Isolation occurred on high-high S/G 2B level. Again, the CF Isolation was reset, and a CF Pump was restarted. When S/G 2B level returned to normal, the Motor Driven CA Pumps were secured. The unit was in Mode 2, Startup, at the time of the incident.

This incident is assigned Cause Code X, Other, due to the CF Control Bypass Valve Controller Card for Automatic Operation being out of adjustment.

This incident is reportable pursuant to 10 CFR 50.73, Section (a)(2)(iv) and 10 CFR 50.72, Section (b)(2)(ii).

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LICENSEE EV	ENT REPORT	(LER) TEXT	CONTINUATION

APPROVED OM8 NO 3150-0104

EXPIRES 8:31 85

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BACKGROUND

RC Form 366A

The Main Feedwater (CF) System (EIIS:SJ) provides condensate flow to the Steam Generators (S/Gs) through four main feedwater lines. Each of these four lines contains a feedwater control valve and a feedwater control bypass valve, which are modulated by the Feedwater Control System to maintain proper S/C water level. The CF control bypass valves normally control flow up to approximately 15% load, and the CF control valves control flow from approximately 15% to 100% load. These valves fail closed on a CF isolation signal. The feedwater isolation signal is initiated on a high-high S/G level of 78% narrow range or low-low level of 17% narrow range.

DESCRIPTION OF INCIDENT

On May 11, 1986, two CF Isolations occurred due to high-high level in S/G 2B. Level in S/G 2B was being controlled by valve 2CF39, SG 2B Control Bypass Valve, in the manual mode, because it would not control level in the automatic mode.

A Work Request had been written to investigate and repair the reason 2CF39 would not control in the automatic mode on April 20, 1986. The unit was in Mode 2, Startup, and Reactor power was being maintained at 4% in order to develop flux maps. The Control Room Operator (NCO) noticed that just after power had reached 4%, S/G 2B control in manual became erratic. When the NCO tried to control level in S/G 2B, the controller for 2CF39 did not respond as expected, and the S/G B Level Deviation annunciator, which is initiated at 5% difference from programmed level, was annunciating at regular intervals of about every 10 minutes due to high or low level. At about 0430 hours, S/G 2B level had increased above the S/G B Level Deviation setpoint and the NCO reduced CF flow with 2CF39. Level in S/G 2B was not noted to be decreasing due to the delay in response time for the pen trace on the S/G 2B strip chart, and since the S/G B Level Deviation ann inclator was already in alarm, level in S/G 2B increased undetected until 0434:15 hours, when S/G B Hi-Hi Level Alert annunciator was received. The NCO immediately closed 2CF39, but 35 seconds later, CF Isolation occurred on High-High S/G 2B level at 0435:15:847 hours. At 0435:23 hours, CF turbine driven pump (CFPT) A tripped, and both Motor Driven CA Pumps started automatically. The NCO immediately isolated Auxiliary Feedwater (CA) (EIIS:BA) flow to S/G 2B, and allowed it to steam down to 76%. The CFPT A was restarted to restore CF flow to the other S/Gs while S/G 2B remained isolated. Approximately 30 seconds after starting CFPT A, a second CF Isolation occurred, again due to high-high level in S/G 2B. The NCO allowed S/G 2B to steam down, this time to 70% level. CFPT A was then restarted, the CF Isolation valves were realigned, and CA was secured. Reactor power remained at 4% throughout the event.

NRC Form 386A (9-83)	LICENSEE EVENT	REPORT (LER) TEXT CON	PORT (LER) TEXT CONTINUATION					
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Catawba Nuclear Station, Unit 2 TEXT /// more space is required, use additional MRC Form 366A (s) (17)

On the next shift, on May 11, 1986, at 0814 hours, Motor Driven CA Pump 2A was started and the CA System was used to control level in S/G 2B, due to the erratic response of 2CF39. Later that day, adjustments were made to the controller card in the Process Control Panel, per the Work Request and 2CF39 was returned to service in the automatic mode.

CONCLUSION

This incident is assigned Cause Code X, Other, since the S/G 2B Control Bypass Valve, 2CF39, was not operating properly. While working on the Work Request, personnel found the controller card in the Process Control Panel for valve 2CF39 out of adjustment. Although the adjustments were made on the controller card, the chart recorder for S/G 2B narrow range level indicates erratic levels were encountered in this S/G constantly until the chart recorder paper was removed on May 19, 1986. Several problems have been encountered with Unit 2 S/G levels since the CF System was initially started up, including three Reactor Trips (see LER's 414/86-13, 414/86-14, and 414/86-15). The Unit 2 S/G's are Westinghouse Model D-5.

There have been no malfunctions of the Westinghouse NCB controller card reported to NPRDS. This malfunction of the Westinghouse NCB controller card is not reportable to NPRDS.

CORRECTIVE ACTION

- (1) CA flow was isolated from S/G 2B.
- (2) S/G B Hi-Hi Level Turbine Trip alarm was reset.
- (3) The CF Isolation valves were realigned.
- (4) CFPT A was restarted to supply CF flow to the S/Gs.
- (5) The CF Isolation valves were again realigned.
- (6) CFPT A was restarted to supply CF flow to the S/Gs.
- (7) A Work Request was completed and 2CF39 was returned to operation in the automatic mode.

SAFETY ANALYSIS

S/G 2B level was returned to 70%. All other S/G levels stayed at 50% narrow range during the incident. Both Motor Driven CA Pumps started automatically following the trip of the Main Feedwater Pump. Adequate heat removal capability was available at all times.

The health and safety of the public were not affected by this incident.

DUKE POWER COMPANY P.O. BOX 33189 CHARLOTTE, N.C. 28242

HAL B. TUCKER VICE PRESIDENT NUCLEAR PRODUCTION TELEPHONE (704) 373-4531

June 10, 1986

Document Control Desk U. S. Nuclear Regulatory Commission Washington, D. C. 20555

Subject: Catawba Nuclear Station, Unit 2 Docket No. 50-414

Gentlemen:

Pursuant to 10 CFR 50.73 Section (a) (1) and (d), attached is Licensee Event Report 414/86-12 concerning two Main Feedwater Isolations due to a Main Feedwater control bypass valve being out of adjustment. This event was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

Tuckerfree

Hal B. Tucker

RWO:s1b

Attachment

xc: Dr. J. Nelson Grace, Regional Administrator U. S. Nuclear Regulatory Commission Region II 101 Marietta Street, NW, Suite 2900 Atlanta, Georgia 30323

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NRC Resident Inspector Catawba Nuclear Station

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