

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Calvert Cliffs, Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 3 1 8	PAGE (3) 1 OF 0 2
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TITLE (4)
Reactor Trip on Low Steam Generator Water Level Condition Resulting from the Trip of #22 Steam Generator Feed Pump

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)					
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES					
									N/A					
1	0	0	3	8	4	8	4	0	0	5	0	0	0	0
1	0	0	3	8	4	8	4	0	0	5	0	0	0	0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

OPERATING MODE (9) 1	20.402(b)	20.406(c)	<input checked="" type="checkbox"/>	60.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 0 1 0 1 2	20.406(a)(1)(i)	60.36(c)(1)	<input type="checkbox"/>	60.73(a)(2)(v)	73.71(e)
	20.406(a)(1)(ii)	60.36(c)(2)	<input type="checkbox"/>	60.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 386A)
	20.406(a)(1)(iii)	60.73(a)(2)(i)	<input type="checkbox"/>	60.73(a)(2)(viii)(A)	
	20.406(a)(1)(iv)	60.73(a)(2)(ii)	<input type="checkbox"/>	60.73(a)(2)(viii)(B)	
	20.406(a)(1)(v)	60.73(a)(2)(iii)	<input type="checkbox"/>	60.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME B. J. Sullivan, Operational Safety Analyst	TELEPHONE NUMBER
AREA CODE 3 1 0	2 1 6 1 0 1 - 1 4 1 4 1 0 1 3

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC
X	J K	S C		N					
X	J K	P S	8 0 6 9	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

At 1948 on October 3, 1984, Calvert Cliffs Unit 2 reactor tripped from 92% power on Low Steam Generator Water Level caused by the loss of #22 Steam Generator Feed Pump (SGFP). The reason #22 SGFP tripped could not be positively identified.

Completed corrective actions include satisfactory checks of the SGFP control oil and lube oil systems. Strip chart recorders have been installed to monitor the SGFP Speed Control Oil System. The SGFPs have been operated in manual since the trip and no recurrence of the problem has been detected. Current plans are to evaluate the Feed Controls with one SGFP in automatic and one SGFP in manual. If performance is satisfactory, both SGFPs will be returned to automatic operation.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Calvert Cliffs, Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 3 1 8	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 4	- 0 0 8	- 0 0	0 2	OF	0 2

TEXT (If more space is required, use additional NRC Form 366A's) (17)

At 1948 on October 3, 1984, while at 92% power, an automatic trip of Calvert Cliffs Unit 2 reactor occurred. The cause of this trip was a Low Steam Generator Water Level condition caused when #22 Steam Generator Feed Pump (SGFP) (SJ-P) tripped. Although the reason #22 SGFP had tripped could not be positively identified, strong evidence exists to indicate that the problem originated in the common SGFP speed control circuitry (JK). It is postulated that a spurious fault in this circuitry could have erroneously caused both pumps to increase speed and, therefore, discharge pressure. Due to a leaky oil diaphragm on the Hand Speed Changer (JK-SC) on #21 SGFP, #22 SGFP responded to this increased speed signal at a faster rate than #21 SGFP. #22 SGFP then automatically tripped, possibly due to high discharge pressure. The leaky oil diaphragm on #21 SGFP Hand Speed Changer was discovered during the post-trip investigation and has since been replaced.

Following the trip, the Control Room Operators properly evaluated the event and followed the procedures for reactor trip, Emergency Operating Procedure (EOP) 1. #23 Auxiliary Feed Pump (BA-P) started on Auxiliary Feedwater Actuation Signal (AFAS) (BA) which was generated by Low Steam Generator Water Level signals for #21 and/or #22 Steam Generators. Both steam generator levels were restored with Feed System in manual control. Post-trip reviews verified that all safety systems functioned as expected and no Technical Specification Limits were exceeded.

After #22 SGFP tripped, #21 SGFP discharged pressure reached approximately 1750 PSIG without tripping the pump. The operator established manual control to lower the discharge pressure on #21 SGFP. Post-trip investigations discovered one of the pressure switches (JK-PS) for the trip circuitry on #21 SGFP out of calibration high. This pressure switch has been reset to the 1450 PSIG trip set point. A momentary actuation of #22 SGFP Low Bearing Oil Pressure Alarm (SL-FA) occurred, apparently simultaneously with the trip of the pump. Although the cause has not been positively identified, the demand on the Lube Oil System with the SGFP accelerating at high speeds may have caused the alarm to actuate momentarily.

Monitoring devices have been installed on the speed control system, control oil system, and high pressure oil system for the SGFPs. The SGFPs have been operated in manual since the trip and no recurrence of the problem has been detected. Current plans are to evaluate the feed controls with one SGFP in automatic and one SGFP in manual. If performance is satisfactory, both SGFPs will be returned to automatic operation.

BALTIMORE GAS AND ELECTRIC COMPANY

P.O. BOX 1475

BALTIMORE, MARYLAND 21203

NUCLEAR POWER DEPARTMENT
CALVERT CLIFFS NUCLEAR POWER PLANT
LUSBY, MARYLAND 20657

November 1, 1984

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

Docket No. 50-318
License No. DRP 69

Dear Sirs:

The attached LER 84-08 is being sent to you as required by 10 CFR 50.73.

Should you have any questions regarding this report, we would be pleased to discuss them with you.

Very truly yours,

L B Russell

L. B. Russell
Plant Superintendent

LBR:^{ll}BJS:mdh

cc: Dr. Thomas E. Murley
Director, Office of Management Information
and Program Control
Messrs: A. E. Lundvall, Jr.
J. A. Tiernan

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