NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Calvert Cliffs, Unit 2	0 5 0 0 0 3 1 8	1 OF 0 3

TITLE (4)
RCP Seal Bleedoff Line Weld Failure

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	DOCKET NUMBER(S)
0 7	0 9	8 4	8 4	— 0 0 6	— 0 0	0 8	0 6	8 4	N/A	0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 9 7	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Scott S. Darling, Engineer, PMD	3 0 1 — 2 6 0 - 4 8 0 3

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
B	A B	P S P	B 5 8 0	Y							

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

While operating in MODE 1 at 1545 on 9 July 1984, unidentified reactor coolant leakage was determined to be greater than 1.0 gpm. Unit 2 entered the action statement of T. S. 3.4.5.2b and commenced power reduction for shutdown.

At 2110 on 9 July 1984 the cause of the unidentified leakage was determined to be a cracked weld at the interface of 22B Reactor Coolant Pump (RCP) control bleedoff (CBO) line and the RCP seal. After reaching cold shutdown condition the RCP seal was removed from the pump and a repair of the CBO line was completed.

Similar weld failures have occurred twice on Unit 1 RCP seals. Specific preventive maintenance inspections are planned to perform non-destructive examinations of the RCP seal CBO line welds during seal replacement and each cold shutdown.

IE22
1/1

NRC Form 366
(9-83)

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

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

While operating in MODE 1 at 1510 on 9 July 1984 a reactor containment entry (NH) was made to identify reactor coolant leakage. During inspection of the 10 foot elevation, leakage of approximately 1 gpm was observed coming from 22B reactor coolant pump (AB-P) bay. Radiation levels prevented locating the exact source of leakage. T. S. 3.4.6.2b action statement was entered because reactor coolant (AB) unidentified leakage was greater than 1.0 gpm.

Reactor power reduction commenced at 1545 on 9 July 1984. The plant was in MODE 2 at 1851 and reactor shutdown commenced at 2050. At 2110 on 9 July 1984 investigation revealed the unidentified leakage to be originating from a crack on 22B RCP control bleedoff line (CB-P). The crack was located at the toe of the weld where the control bleedoff line attaches to the RCP seal. Leakage was estimated to be approximately 1 gpm based on visual examination and from the last known measurements. The control bleedoff flow is measured weekly under Operation's PM-64-7-2.

A detailed visual inspection of the CBO line concluded the failure to be inservice fatigue induced.

The immediate corrective action taken was to excavate the existing weld and replace the 4 inch section of control bleedoff pipe between the RCP seal and its flanged connection. Non-destructive examination of the three other Unit 2 RCP seals control bleedoff line attachment welds was performed. No crack indications were discovered.

The following long term corrective action will be taken:

1. Establish a preventive maintenance inspection item to perform non-destructive examination of the RCP seal penetration welds during seal rebuild and each cold shutdown.

2. Continue RCP alignment and balancing program, thereby, minimizing RCP vibration to reduce the cyclic fatigue stresses to the control bleedoff line attachment welds.

3. Review procedures and train maintenance personnel on the importance of not stressing RCP seal attachment welds by improper rigging/handling during decon, rebuild, and installation of the RCP seal.

4. Evaluate possible modifications to the control bleedoff line with regards to vibration isolation, flange replacement and additional structural support.

Similar events (LERs 80-24 and 83-20) have occurred on Unit 1 RCPs. These fatigue stress failures led to an extensive vibration monitoring and reduction program implemented for the RCPs. The program included new monitoring equipment, improved motor to pump alignment procedures and balancing the pump at the coupling if needed.

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

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

The event never endangered the safety of the plant or the public. The control bleedoff line carries low temperature and pressure reactor coolant bleedoff from the RCP seal to the volume control tank (CB-Tk). All leakage occurred within the reactor containment and was directed to the containment sump for collection and processing.

The contact for further discussion of this event is Scott S. Darling, (301) 260-4803.

BALTIMORE GAS AND ELECTRIC COMPANY

P.O. BOX 1475

BALTIMORE, MARYLAND 21203

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

August 6, 1984

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

Docket No. 50-318
License No. DPR 69

Dear Sirs:

The attached LER 84-06 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,

John T. Carroll

For L. B. Russell
Plant Superintendent

LBR:SSD:srm

Attachment

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

IE22
1/1