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)
Incorrect Fastener Material Used in Pressurizer Spray Valves

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 5	1 8	8 5	8 5	0 0 3	0 0	0 6	1 7	8 5	Calvert Cliffs Unit 1	0 5 0 0 0 3 1 7
										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 1 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)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	X 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
Kenneth M. Romney, Senior Engineer	3 0 1 1 2 1 6 0 1 - 1 4 3 7 1 2

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	F C V	1 2 0 B	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)

Examination of studs on pressurizer spray valves and pressurizer spray bypass valves identified incorrect stud material in seven of eight valves and one or more cracked studs in four valves. None of the incorrect studs were cracked. All studs made of incorrect material and those studs found to be cracked were replaced with approved material.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

While in MODE 5 following reactor trip on 4/25/85 a single cracked stud was identified and replaced on pressurizer spray valve (EIIS AB-FCV) 2-CV-100F. Unit 2 was returned to service on 5/6/85. Investigation continued on Unit 1 which was in a refueling outage at that time. Several cracked studs were identified on pressurizer spray valves 1-CV-100E & F. Incorrect stud material was also identified. Several studs in each valve were found to be made from 316 stainless rather than the correct material which is ASTM A-564 Type 630 (17-4 pH). Following an engineering evaluation which concluded that 316 studs had insufficient tensile strength for the application they were replaced with either 17-4 pH studs or an approved substitute. Similarly, the cracked studs were also replaced with approved material. All cracked studs were 17-4 pH material.

Following discovery of cracked studs and material problems on Unit 1, a power reduction was scheduled on Unit 2 on May 17 to allow for examination of the studs on 2-CV-100E & F. Unit 2 was reduced to 17% power at 0030 on May 18. The examination identified four of eight studs in 2-CV-100E and five of eight studs in 2-CV-100F which were not of the correct 17-4 pH material. One 17-4 pH stud in 2-CV-100E was found to be cracked. Shutdown of Unit 2 commenced immediately and the Unit was placed in MODE 5 at 2235 on May 18. The incorrect studs and the single cracked stud were replaced with approved material.

A search of plant history files was conducted to determine if the pressurizer spray valve studs had been replaced during maintenance or modification. No record of such replacement could be found leaving open the possibility that the valves may have been originally installed with studs of incorrect material. Since the pressurizer spray valves on both units were supplied by a single vendor, ITT Hameldahl, all other valves supplied by ITT on both units were then examined to verify correct stud material. Incorrect stud material was identified on three of four pressurizer spray bypass valves. These studs were replaced with studs made of an approved material. In each case of incorrect stud material the correct material was 17-4 pH. A documentation review was undertaken to determine if valves supplied by two other major valve manufacturers specified 17-4 pH studs. No such valves were identified as being installed in either plant in other than non-critical applications.

Partial failure of the pressurizer spray valve studs would increase the unidentified reactor coolant system leakage. When the total leakage reached the Technical Specification limit a power reduction would be ordered to identify and correct the valve leakage. The highly unlikely failure of the pressurizer spray valve body to bonnet pressure boundry would result in a loss of coolant accident which has been previously analyzed in the Updated Final Safety Analysis report.

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

Although no evidence exists to suggest that incorrect stud material was installed during maintenance activities, a special preventative action meeting was held on May 23 with plant mechanical craft personnel. During this meeting, the General Supervisor-Mechanical Maintenance emphasized to his personnel the importance of following proper bolting practices, including verification of correct material and adherence to specified torque limits. While the cause of cracking in the 17-4 pH studs has not yet been determined, evidence does exist to suggest that adequate control over the torquing of the studs has not been exercised at all times. Specific maintenance procedures are being developed for these valves which will include necessary torque limits for the body to bonnet studs. Similar limits will also be incorporated into other maintenance procedures as they are developed or revised. Maintenance personnel have been instructed to obtain torque specifications prior to tightening all pressure boundary fasteners.

This is not a repetitive occurrence.

BALTIMORE GAS AND ELECTRIC COMPANY

P.O. BOX 1475

BALTIMORE, MARYLAND 21203

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

June 17, 1985

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 85-03 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
Plant Superintendent

LBR/KMR/pah

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

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