BALTIMORE
GAS AND
ELECTRIC

CALVERT CLIFFS NUCLEAR POWER PLANT
1650 CALVERT CLIFFS PARKWAY • LUSBY, MARYLAND 20657-4702

CHARLES H. CRUSE
PLANT GENERAL MANAGER
CALVERT CLIFFS

November 13, 1992

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 and 2; Docket Nos. 50-317 and 50-318;
License Nos. DPR 53 and DPR 69
Licensee Event Report 92-005
Main Steam Safety Valve Lift Settings Outside Technical Specification Allowable Due to Manufacturer Error

Gentlemen:

The attached report is being sent to you as required under 10 CFR 50.73 guidelines. Should you have any questions regarding this report, we will be pleased to discuss them with you.

Very truly yours,

Charles H. Cruse

CHC/DWM/bjd
Attachment

cc: D. A. Brune, Esquire
J. E. Silberg, Esquire
R. A. Capra, NRC
D. G. McDonald, Jr., NRC
T. T. Martin, NRC
P. R. Wilson, NRC
R. I. McLean, DNR
J. H. Walter, PSC
Director, Office of Management Information and Program Control

IE22 1/1

NRC FORM 366 (5-92) U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

APPROVED BY OMB NO. 3150-0104
EXPIRES: 5/31/952
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Calvert Cliffs, Unit 1	05000 317	1 OF 04

TITLE (4)
MSSV Lift Settings Outside Allowable Tech Spec Due to Manufacturer Error

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 NUMBERS(S)
10	16	92	92	-- 005 --	00	11	13	92	CC, Unit 2	05000 318
										05000

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR (Check one or more) (11)					
POWER LEVEL (10)	100	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 (include Area Code)
Dan W. Muth, Compliance Engineer	410-260-3592

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

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS

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 15 single-space typewritten lines) (16)

On May 17, 1990, Dresser Industries, Inc. sent out a letter escribing a change in the spring constant "K" factor used to calculate Main Steam Safety Valve (MSSV) and Pressurizer Safety Valve (PSV) lift settings. The "K" constant previously used was low, causing the actual MSSV lift settings to be higher than calculated. A review completed on October 16, 1992 found several instances in the past in which "as-left" MSSV lift settings were in excess of Technical Specification allowable limits. The PSV limits were found not to have been exceeded.

The cause of this event is the use of inaccurate "K" factors supplied by Dresser Industries, Inc., in calculating the "as-left" relief valve lifting pressures for the affected valves. The change in "K" factors resulted from improved empirical test data.

Following initial notification in 1990, all procedures using the "K" factors were revised to include the correct values and all MSSV and PSV settings were verified to be within Technical Specification limits. No other valves were affected by the "K" constant change.

I. DESCRIPTION OF EVENT

On May 17, 1990, Dresser Industries, Inc. sent out a letter describing a change in the spring constant "K" factor used to calculate Main Steam Safety Valve (MSSV) and Pressurizer Safety Valve (PSV) lift settings when the valve setpoints are set using the Dresser Model 1566 Hydroset. The "K" constant previously used was low, causing the actual MSSV lift settings to be higher than calculated. Our review, completed on October 16, 1992, found several instances in which prior "as-left" lift settings were in excess of Technical Specification allowable limits. The PSV limits were found not to have been exceeded. Calvert Cliffs Units 1 and 2 were in MODE 1 at normal operating temperature and pressure at the time of discovery.

MSSVs are surveillance tested every refueling outage to verify that their lift setpoints are within the allowable range. The steam pressure under the valve is monitored. A Dresser hydroset is then used to apply a hydraulic lifting force to the valve. This hydraulic pressure value is then multiplied by the "K" factor and added to the steam pressure to calculate the valve lift setpoint. The "K" factor is used to convert the hydraulic pressure of the hydroset to the corresponding steam pressure needed to lift the valve.

In its May 17, 1990 letter, Dresser informed us that the "K" constant factors should be higher. This change affected both the PSVs and the MSSVs. All procedures governing use of the Dresser hydroset were revised to use the new "K" constants prior to their next use. We reviewed the most recent data for both the PSVs and the MSSVs and determined that both were within Technical Specification limits. We subsequently contracted with Combustion Engineering (CE) to review all historical data on the PSVs and MSSVs. On September 24, 1992, CE sent their final design evaluation which concluded that the incorrect "K" factors had not affected the PSV settings but had resulted in instances in which MSSV setpoints were outside the Technical Specification allowables. A review of CE's findings concluded on October 16, 1992 that the MSSVs had indeed been outside Technical Specification limits.

II. CAUSE OF EVENT

The cause of this event is the use of inaccurate "K" factors supplied by Dresser Industries, Inc., in calculating the "as-left" relief valve lifting pressures for the affected valves. The change in "K" factors resulted from improved empirical test data.

III. ANALYSIS OF EVENT

There were no safety consequences or significance as a result of this event. The design basis pressure for the Main Steam System is 1100 psig. No design basis event would have resulted in main steam system pressure exceeding its design basis as a result of valve lift settings being above the Technical Specification limits.

The plant safety analysis assumes that the MSSVs will open on a staggered basis: two at 995 psig, two at 1035 psig, and four at 1065 psig. These are the maximum values allowed by the Technical Specifications. The "as-left" data from this event was compared against these values. In the worst case, the two lowest-set valves were above their assumed value of 995 psig. However, the other six valves were sufficiently below their assumed values to relieve enough steam to prevent Main Steam System pressure from exceeding 1100 psig in the event of a design basis event.

This item is reportable under the provisions of 10 CFR 50.73(A)(2)(i)(B) as a condition prohibited by the plant's Technical Specifications. A 10 CFR Part 21 report concerning this issue was made by Dresser on May 17, 1990.

IV. CORRECTIVE ACTIONS

As noted above, all procedures using the "K" factors were revised in 1990 to include the correct values and all MSSV and PSV settings were verified to be within Technical Specification limits. No other valves were affected by the "K" constant change.

V. ADDITIONAL INFORMATION

A. Affected Component Identification:

	IEEE 803 EIIS Funct	IEEE 805 System ID
Main Steam Safety Valve	RV	SJ

B. Previous Similar Events:

There have been two events reported under 10 CFR 50.73 involving similar instances in which safety valves have been set outside their Technical Specifications due to manufacturer error. These events were reported as

LER 50-317/87-006 and LER 50-317/88-011. Both resulted from problems with testing valves offsite and neither involved inaccurate hydroset results.

LERs 50-318/84-04, 50-317/85-03, and 50-318/85-11 all involve MSSV setpoints found outside Technical Specification allowables. None of these involved problems with vendor-supplied information.