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

March 5, 1993

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 93-002
Missed Surveillance Requirements Due to Software Manual 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/REF/bjd
Attachment

cc: D. A. Brune, Esquire
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NRC FORM 366 (5-92) U. S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES: 5/31/95
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.

LICENSEE EVENT REPORT (LER)

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

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

TITLE (4)
Missed Surveillance Requirements Due to Software Manual 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)
02	05	93	93	-- 002 --	00	03	05	93	Calvert Cliffs, U2	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)
R. E. Franke, Compliance Engineer	410-260-2060

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
X	ID		C490	NO						

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X	YES (If yes, complete EXPECTED SUBMISSION DATE)		NO		06	30	93

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-space typewritten lines) (16)

Calvert Cliffs uses the Better Axial Shape Selector System (BASSS) version 3.3 computer code. This system monitors incore Axial Shape Index (ASI) and provides various alarm functions. The software vendor discovered an error in its user's manual which the vendor uses in updating BASSS's data-input library. The error rendered one alarm function inoperable, resulting in Units 1 and 2 not fulfilling Technical Specification Surveillance Requirement 4.2.5.1. This Surveillance requires verification of incore ASI within limits every twelve hours. The cause of the user manual error is unknown and the investigation is continuing. A revision to this report is expected. Corrective actions included manual performance of the Surveillance, correcting BASSS's data-input library, verifying BASSS operable, and reviewing applicable sections of the user manual. Additional corrective actions will be taken if warranted.

I. DESCRIPTION OF EVENT

On April 12, 1991 and July 21, 1992, Calvert Cliffs Nuclear Power Plant installed the Better Axial Shape Selector System (BASSS) version 3.3 on the Units 2 and 1 plant computers respectively. The BASSS computer code calculates incore axial shape index (ASI) in real time. Measuring incore ASI and maintaining it within prescribed Technical Specification (TS) limits ensures that plant parameters do not exceed thermal/hydraulic limitations.

Because of an unrelated self-assessment requested by Baltimore Gas and Electric (BG&E), the software vendor was reviewing the BASSS 3.3 user manual on February 4, 1993. As a result of this review, a user-manual error was discovered. After evaluating the error, the vendor notified BG&E on February 5, 1993.

The user-manual error resulted in incorrect sequencing of program input data, rendering an important alarm function inoperable. The program input data is provided to BG&E on a refueling outage basis. The affected alarm warns licensed plant operators when ASI exceeds the Small-Break Loss of Coolant Accident (LOCA) ASI limit. Operating within the limit ensures plant conditions remain within the analyzed boundaries for this accident. Without the alarm, the plant was relying on a slightly less conservative BASSS alarm to inform them of an unsatisfactory ASI condition. A review of historical plant data showed that the more conservative ASI limits were never violated.

This particular alarm function is necessary to meet the TS 4.5.2.1 surveillance. TS 4.5.2.1 requires verification every twelve hours that ASI does not exceed its limits. As a result of the user-manual problem, these ASI verifications were not complete. Units 2 and 1 were started-up on April 28, 1991 and August 16, 1992 respectively. They operated for 566 and 169 days in this condition.

Calvert Cliffs immediately took alternate, compensatory measures to perform the TS 4.2.5.1 surveillances. The vendor issued a Part 21 report concerning the error on February 12, 1993.

II. CAUSE OF EVENT

The event remains under investigation. The software was procured under the vendor's 10 CFR 50 Appendix B Quality Assurance Program. Our investigation will be completed following completion of the vendor's root-cause analysis. A revision to this report will be issued.

Few online software products are provided by this vendor. The other ones that are do not require input-data updating.

III. ANALYSIS OF EVENT

This event was not safety significant. Actual plant ASI values remained within the small-break LOCA ASI limit during the operating periods. Additionally, Nuclear Fuel Management receives daily ASI trend data which is reviewed periodically. If ASI had violated any limits, earlier discovery of the manual error would have been likely.

The failure to perform a TS Surveillance Requirement is reportable under 10 CFR 50.73(a)(2)(i)(A) as a condition prohibited by plant Technical Specifications.

IV. CORRECTIVE ACTIONS

Immediate Corrective Actions

A. The vendor and BG&E checked the remaining input data against the BASSS code. No other errors were found.

B. The surveillances were performed manually until the vendor's corrected input data was installed (February 12, 1992).

C. Although the problem was unique to Calvert Cliffs, the vendor notified all other code users of the error.

D. The BASSS coding and related user-manual sections were reviewed. No similar problems were discovered

Actions to Prevent Recurrence:

E. The vendor will correct the error in the user manual.

F. Additional corrective action will be considered following investigation completion.

V. ADDITIONAL INFORMATION

A. Component and System Identification described in this report:

Component or System	IEEE 803A/83 Funct. Ident.	IEEE 805/84 System Code(s)
Plant Computer	CPU	ID

B. There have been no similar reportable events at Calvert Cliffs.