

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Calvert Cliffs, Unit 2	DOCKET NUMBER (2)  05100031888	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		88	001	00	03	OF 03

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

SAFETY SIGNIFICANCE

The safety consequences of this event are not considered significant. Approximately three percent less water was available from SIT 21B than assumed by the final safety analysis report (FSAR) analysis of a loss of coolant accident from a hot leg or one of the other three cold legs of the reactor coolant system. Had a loss of coolant accident from cold leg 21B occurred, no credit is taken for any water from SIT 21B. This event would have been more severe if the SIT had been totally inoperable, which is the case addressed in the applicable technical specification action statement. In this event, about 97 percent of the SIT water was still available for injection if needed.

Had a LOCA occurred, slightly higher fuel temperatures and cladding oxidation would have occurred. However, the Unit 2 Cycle 8 LOCA analysis shows considerable margin exists to the allowable limits.

CORRECTIVE ACTIONS

The following correction actions are being taken to prevent recurrence.

1. 21B SIT level transmitter will be replaced during the upcoming Unit-2 Outage.
2. Operations personnel will be made aware of this event.
3. Design changes are being considered to improve the design of both Units 1 and 2 SIT level/pressure indication systems and alarm systems and set points.
4. In the future, in accordance with our policy of improving the plant's material condition, we will not tolerate nagging maintenance problems like the one described in this report.

Level Transmitter Manufacturer - Fischer & Porter

Model No. 13D2496Q8

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PDR ADOCK 05000318  
S PDR



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

February 5, 1988

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

Docket No. 50-318  
License No. DPR 69

Dear Sirs:

The attached LER 89-001, 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,

A handwritten signature in cursive script that reads "J.R. Lemons".

J.R. Lemons  
Manager - Nuclear Operations Department

JRL:MSK:plv

~~MSK~~

cc: William T. Russell  
Director, Office of Management Information and Program Control  
Messrs: J.A. Tiernan  
W.J. Lippold

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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 3
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TITLE (4)  
21B Safety Injection Tank Low Water Volume

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	
0	1	12	8	8	8	0	0	1	0	0
0	1	12	8	8	8	0	0	1	0	0
0	1	12	8	8	8	0	0	1	0	0
0	1	12	8	8	8	0	0	1	0	0
0	1	12	8	8	8	0	0	1	0	0
0	1	12	8	8	8	0	0	1	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) 1 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(e)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)	OTHER (Specify in Abstract above and in Text, NRC Form 388A)
	<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 50.38(e)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)	
	<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 50.38(e)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)		
	<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(vii)(A)		
	<input type="checkbox"/> 20.406(a)(1)(iv)	<input checked="" type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)		
	<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)		

LICENSEE CONTACT FOR THIS LER (12)

NAME Mark S. Kostelnik, Engineer	TELEPHONE NUMBER 3 0 1 2 6 0 - 4 8 8 3
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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
B	BIO	TIKI	F 11210	N					

SUPPLEMENTAL REPORT EXPECTED (14) <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH DAY YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)

On 12 January 88, at 100% power, while trouble shooting an oscillating water level indication of the 21B Safety Injection Tank (SIT), calibration revealed that the zero level reference had shifted. The level was 182 inches. The minimum technical specification limit is 187 inches.

Operators filled 21B SIT to proper water level.

The cause of the zero level shift was transmitter calibration drift. The level transmitter will be replaced when a replacement transmitter is satisfactorily rebuilt and radiological conditions permit.

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DESCRIPTION

The Safety Injection Tanks (SIT) (EIIS BQ-TK) have two separate pressure/level alarm systems. (1) One receives input from the tank pressure/level transmitters. (2) The other receives input from the tank high/low level switches. The level transmitter portion of the pressure/level alarm system also provides wide and narrow range indication to the control room.

On 15 July 87, 21B Safety Injection Tank Water Level Indication (EIIS BQ-LI) began fluctuating. Investigation revealed the current in the (SIT) level transmitter indication loop, was out of specification. However, no alarm was received on the separate high/low level switch alarm system and all other system parameters, such as boron concentration, indicated that the SIT tank was operating properly.

Troubleshooting investigations on 31 July 87 and 3 August 87, revealed that an internal problem existed in the 21B SIT Level Transmitter (EIIS BG-LT).

On 23 October 87, excessively erratic indication on 21B SIT level led operators to place the level transmitter alarm system out of service.

On 11 January 88, the Control Room logged the high/low level switch alarm system into alarm. Since this system does not provide the Control Room with indication, trouble shooting commenced on 21B SIT level transmitter.

On 12 January 88, during an unsuccessful attempt at replacing 21B level transmitter's oscillator/amplifier (EIIS BQ-OSL/Amp), technicians discovered the transmitter has a poorly performing force motor. This is the cause of the fluctuating loop current. The technicians checked the transmitter's calibration. The transmitter read 182 inches, which is 5 inches below our technical specification limit of 187 inches. The technicians successfully recalibrated the transmitter.

The Shift Supervisor entered technical specification action statement 3.5.1.a for low 21B SIT level at 1145, 12 January 88. Operators restored 21B SIT level and the Shift Supervisor placed the plant out of technical specification action statement 3.5.1.a at 1225, 12 January 88.

ANALYSIS

Several factors affected the decision process regarding this scenario.

1. The shop lacked a satisfactory spare replacement transmitter because our model is no longer made.
2. ALARA considerations consistently impacted worker stay time on repair decisions.
3. The SIT pressure/level annunciation system is a difficult design for operations to utilize because of the common alarm for high and low pressure and high or low level.