

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Calvert Cliffs, Unit-1	DOCKET NUMBER (2) 0 5 0 0 0 3 1 7 1	PAGE (3) OF 0 2
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TITLE (4)
Incorrect Steam Generator Tube Plugged Due to Personnel 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 NUMBER(S)
1	2	0 9	8 6 8 8	0 0 3	0 0	0 5 2	2 8 8				0 5 0 0 0
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THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

OPERATING MODE (9) 6	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 365A)
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(vii)(A)	
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(vii)(B)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME B.C. Rudell	TELEPHONE NUMBER
	AREA CODE: 3 0 1 2 6 0 - 4 8 1 5

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NFRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NFRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

During eddy-current testing of Calvert Cliffs Steam Generator No. 12 on April 23, 1988, a plug was found in the outlet tube sheet in a tube adjacent to the tube which should have been plugged. Combustion Engineering (CE) had installed the plug on December 9, 1986.

The cause was personnel error. Contributing factors were an inoperable tube position indicating system on the robotic arm being used and poor video monitoring clarity.

Calvert Cliffs personnel, assisted by a different contractor, are being used now and were used prior to using CE, with no incidents of this nature. Use of CE in the future will depend on their response to this event.

The outlet end of the defective tube has been plugged. The incorrectly plugged tube has been tested and evaluated as good.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
					0 2	OF	0 2

TEXT (if more space is required, use additional NRC Form 366A x(117))

On April 23, 1988, during eddy current examinations of the tubes in Calvert Cliffs Unit 1 Steam Generator No. 12 (E11S SB-SG), a plug was found in the outlet of tube R93L67 that was supposed to have been in adjacent tube R94L66.

Tube plugging operations in this steam generator had been performed on December 9, 1986. That operation was performed by remote control from outside the steam generator using a robotic arm manipulator with video monitoring. Combustion Engineering's (CE) personnel, equipment and Quality Assurance Program were utilized to perform the plugging under contract by Baltimore Gas and Electric. An audio-visual tape recording of these operations was provided by CE.

Review of the tape revealed that defective tube R94L66 had not been plugged on the outlet end, the plug intended for this tube was inserted into adjacent tube R93L67. Normally, an encoded tube position indicating system on the robotic arm is an additional indication of tube location, but that system was inoperable. Also, the video monitoring clarity was poor, making remote visual verification difficult.

The root cause of this event is personnel error. The inoperable position indicating system and the poor visual monitoring capability contributed to this personnel error.

Combustion Engineering has been given the details of this event. Future contracting of Combustion Engineering for steam generator plugging services will depend on their response and corrective actions.

Calvert Cliffs is presently using its own personnel and procedures with support from another contractor for steam generator tube plugging. These procedures require post installation visual verification that plugs are installed in identified locations. Locations marked for plugs are also verified by these procedures. This was the practice prior to the one-time contracting of Combustion Engineering steam generator tube plugging services, and no incidents of mis-plugging defective tubes have occurred previously at Calvert Cliffs. Therefore, we do not expect reoccurrence.

Defective tube R94L66 has been plugged. It contained a 44 percent through wall defect during the 1986 examination, and re-examination this spring showed 12% growth through the last cycle while only one tube end was plugged. Tube R93L67 was examined and is still not defective.

The safety consequences of this event are not significant. Had a rupture occurred in the defective tube, the plant is designed to respond and that event is analyzed in the Final Safety Analysis Report, Chapter 14, Section 15. Also, the extra tube plugged did not cause the total tubes plugged to reach the analyzed limit of no greater than 100.

No similar events have occurred.

Calvert Cliffs contact for this event is Bernie Rudell, 301-260-4815.



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

May 19, 1988

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

Docket No. 50-317
License No. DPR 53

Dear Sirs:

The attached LER 88-003 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,

J.R. Lemons
Manager - Nuclear Operations Department

JRL:BCR:plv

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

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