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

April 3, 1990

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

Docket Nos. 50-317 & 318
License Nos. DPR 53 & 69

Dear Sirs:

The attached LER 90-10, Revision 0, is being sent to you as required under 10 CFR 50.73 guidelines.

Should you have any questions regarding this report, we would be pleased to discuss them with you.

Very truly yours,

R. E. Denton
Manager

KWG/lr

cc: William T. Russell
Director, Office of Management Information
and Program Control
Messrs: G. C. Creel
C. H. Cruse
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Calvert Cliffs Nuclear Power Plant, Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 3 1 7										PAGE (3) 1 OF 0 4	
TITLE (4) Improper Source Checks Due to Procedure Errors																					
EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)											
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YE. R.	FACILITY NAME			DOCKET NUMBER (8)									
0 3	0 4	9 0	9 0	0 1 0	0 0	0 4	0 3	9 0	Calvert Cliffs, Unit 2			0 5 0 0 0 3 1 8									
OPERATING MODE (9) 5			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5 (Check one or more of the following) (11)																		
POWER LEVEL (10) 0 0 0			20.402(b)				20.405(c)				50.72(a)(2)(i)				75.71(b)						
			20.406(a)(1)(i)				50.38(c)(1)				50.72(a)(2)(iv)				75.71(c)						
			20.406(a)(1)(ii)				50.38(c)(2)				50.72(a)(2)(iv)				OTHER (Specify in Abstract below and in Text NRC Form 306A)						
			20.406(a)(1)(iii)				X 50.72(a)(2)(ii)				50.72(a)(2)(viii)(A)										
			20.406(a)(1)(iv)				50.72(a)(2)(ii)				50.72(a)(2)(viii)(B)										
			20.406(a)(1)(v)				50.72(a)(2)(iii)				50.72(a)(2)(ix)										
LICENSEE CONTACT FOR THIS LER (12)																					
NAME Karl W. Gross, Compliance Engineer										TELEPHONE NUMBER AREA CODE 3 0 1 2 6 0 - 3 6 5 1											
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											
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)

On March 4, 1990 a licensed operator noted that the source checks performed on the Liquid Radwaste and Waste Gas Discharge Monitors did not adequately address the Technical Specification requirements. Specifically, the source checks were performed when background radiation levels at the monitors was high enough to mask the channel response to the check source. The method used to perform the source checks provided reasonable assurance of channel operability, however they did not fully meet the Technical Specification requirement for a source check. The cause of this event was procedure error in that the operating instruction used for performing the surveillance did not provide adequate direction or acceptance criteria to assure the proper performance of the source checks. Corrective actions include procedure revisions to address the Technical Specification requirements and reviews of administrative controls and hardware which may have contributed to this event.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THE INFORMATION COLLECTION REQUEST: 600 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-330), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (315D-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Calvert Cliffs, Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 3 1 7	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		9 0	— 0 1 0	— 0 0	0 2	OF 0 4

TEXT (If more space is required, use additional NRC Form 306A's) (17)

I. DESCRIPTION OF EVENT

On March 4, 1990 a Calvert Cliffs licensed operator identified a discrepancy in the manner in which source checks were being performed on the Waste Gas and Liquid Waste Radiation Monitoring Instruments. At the time this condition was identified, Calvert Cliffs was in Mode 5, Cold Shutdown at approximately 180 psia and 120 degrees F. Unit two was defueled.

The operator noted that procedures described performance of the source check of the two radiation monitoring instruments when background radiation levels at the detector were high enough to mask indication of the check source. The operator initiated a Non-Conformance Report (NCR) to determine the acceptability of this practice based on the Technical Specification definition of Source Check. This definition states that "a source check shall be the qualitative assessment of channel response when the channel sensor is exposed to a source of increased radioactivity." The high background levels of radiation present at the monitors prevented the verification of channel response to the source.

The NCR resulted in determination that the practice was not acceptable and the surveillances which have been performed in this condition were not properly conducted. Technical Specifications 4.3.3.9, "Radioactive Gaseous Effluent Monitoring Instrumentation" and 4.3.3.10, "Radioactive Liquid Effluent Monitoring Instrumentation" require source checks of the various monitors be completed periodically or prior to each release via the associated path. These checks were not always properly completed. This was a condition prohibited by the Technical Specifications.

II. CAUSE OF EVENT

The cause of this event was inadequate procedures in that the operating instructions used to conduct this surveillance test did not adequately or properly describe the required method for performing a source check of the affected instruments.

A note included in certain parts of one of the procedures describes background radiation levels masking the response expected from a source check. The note does not discuss the adequacy of a source check performed when this occurs. The note contributed to the misunderstanding regarding the acceptability of the method of performing a source check.

The other operating instruction which describes the method of performing the source check describes the expected range of response of the instrument when the check source is exposed. However, the procedure does not provide adequate criteria to assure that a change in indication occurs.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 600 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Calvert Cliffs, Unit 1	DOCKET NUMBER (2) 0500031790	LER NUMBER (3)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
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TEXT (If more space is required, use additional NRC Form 306A's. (17))

The cause of inadequate surveillance procedures has previously been identified as part of the historical root causes associated with the Performance Improvement Plan (PIP), Action Plan No. 5.2, Procedure Upgrade Project. Specifically, the PIP cites, 1) inadequate detail was provided in the procedures to ensure that they were technically correct and unambiguous, 2) inadequate control for capturing the bases for procedure changes as they are made, and 3) over reliance on worker knowledge and experience.

A potential contributor to the cause of this event was the administrative control applied to procedures used to satisfy Technical Specification surveillance requirements which are not included in the Surveillance Test Program. These controls do not include definition of specific responsibilities for test adequacy in a manner similar to that defined by the Surveillance Test Program.

III. ANALYSIS OF EVENT

The event did not represent a threat to the health and safety of the public or the environment. The procedure and practice used in lieu of a proper source check were similar to the Technical Specification definition of a channel check. The parameter being measured was verified to indicate within the expected range, and was observed to be "drifting up and down" as is typical for analog indication of radiation instrument channels such as this. While this check does not satisfy the Technical Specification definition for a source check, it does provide assurance that the channel was operable. The typical failure mode for these types of instrumentation channels are to fail low on loss of voltage or open circuit, or to fail high under certain saturation conditions. As the channel checks performed verified that neither of these conditions existed, it is reasonable to conclude that the channels were capable of performing their design function of alarming and/or isolating the flow path.

IV. CORRECTIVE ACTIONS**Immediate Corrective Actions:**

1. When the condition was determined to not comply with the requirements of the Technical Specifications, the appropriate Technical Specification Action Requirements were complied with. The Action Requirements allow continued releases when certain actions and criteria are complied with.

Long Term Corrective Actions:

1. The operating procedures which describe the manner in which a source check is performed will be revised to properly reflect the required response in accordance with the Technical Specification definition of a source check.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 600 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20543, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Calvert Cliffs, Unit 1	DOCKET NUMBER (2) 0500031790-010-0004 OF 04	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			

TEXT (If more space is required, use additional NRC Form 306A's) (17)

2. Other plant procedures are being reviewed and revised as necessary to assure that proper direction and acceptance criteria for source checks are included.
3. The surveillance procedures have and are being upgraded to address the historical weakness identified in this event. The procedure improvements are a continuing effort and include additional reviews of procedures and programs as needed. The effort is extensive and current plans include revision of the PIP to address the actions required for additional detailed reviews of surveillance procedures. The effort will continue until all identified concerns have been addressed.
4. The concerns related to control of non-Surveillance Test Program surveillance procedures has been previously identified. This issue is being evaluated to determine the appropriateness of continued exclusion of a portion of the surveillance procedures from the consolidated program management under the Surveillance Test Program manager.
5. A major precursor to this event was the presence of escalated background radiation levels at or near the radiation monitors. The operation and design of these detectors is under review to determine appropriate measures which can be taken to restore the capability to perform source checks.

V. ADDITIONAL INFORMATION

A. Component Identification

<u>Component Name</u>	<u>EIIS System Code</u>	<u>EIIS Component Code</u>
Waste Gas Radiation Monitor	IL	RE
Liquid Radwaste Monitor	IL	RE

B. Previous Similar Events

Somewhat similar events in which inadequate surveillance testing of equipment resulted in plant operation in a condition prohibited by Technical Specifications were reported in the following LERs: 317/89-013, 317/89-017, 318/89-022, 317/89-24, 317/90-01, 317/90-07, and 317/90-08.