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R. E. DENTON  
GENERAL MANAGER  
CALVERT CLIFFS

January 7, 1991

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

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant  
Unit No. 2; Docket No. 318; License No. DPR 69  
Licensee Event Report 90-002, Revision 00

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,

*Lem B Russell*  
for R.E. DENTON

RED/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  
L. E. Nicholson, NRC  
R. I. McLean, DNR  
Director, Office of Management Information  
and Program Control

*LE22*

## LICENSEE EVENT REPORT (LER)

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 (P430), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (2150-0106), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Calvert Cliffs, Unit 2							DOCKET NUMBER (3) 050003181 OF 04						PAGE (3) 1												
TITLE (4) Power Lost to Sample Pump for Gaseous Effluent Monitoring Due to Inadequate Design																									
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	7	9	0	9	0	0	2	0	0	0	1	0	7	9	1								
OPERATING MODE (9) 6			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8. (Check one or more of the following) (11)																						
POWER LEVEL (10) 0.00			20.402(b)				20.405(c)				N0.73(a)(2)(iv)				73.71(b)										
			20.406(a)(1)(i)				N0.36(a)(1)				N0.73(a)(2)(vi)				73.71(a)										
			20.406(a)(1)(ii)				N0.36(a)(2)				N0.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text NRC Form 360A)										
			20.406(a)(1)(iii)				N0.73(a)(2)(i)				N0.73(a)(2)(viii)(A)														
			20.406(a)(1)(iv)				N0.73(a)(2)(ii)				N0.73(a)(2)(viii)(B)														
			20.406(a)(1)(v)				N0.73(a)(2)(iii)				N0.73(a)(2)(ix)														
LICENSER CONTACT FOR THIS LER (12)																									
NAME D. W. Muth, Compliance Engineer										TELEPHONE NUMBER AREA CODE 301 260-3592															
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)															
YES (If yes complete expected submission date)										MONTH DAY YEAR															
<input checked="" type="checkbox"/> NO																									

On December 7, 1990, the Unit 2 Gaseous Effluent Monitoring sampling pump for Iodine and Particulate was inadvertently deenergized for less than one hour. No gaseous effluent releases were in progress that involved significant amounts of radioactivity. The pump collects samples which are counted weekly and used to calculate cumulative offsite dose and does not provide alarms or continuous indication of release rates.

The cause of this event is inadequate design in that the pump is not provided with a dedicated power supply. Contributing to this event was failure to secure the power line following a recent similar event. A probable contributor was personnel error due to a contract employee stepping on or bumping the cord.

Power was promptly restored to the sampling equipment. A separate circuit, including a circuit breaker, has been provided for the pump. The designated receptacle to which the pump plug is connected is protected by a cover which will prevent the plug from being inadvertently disconnected. A sign has been placed on the cover warning personnel not to disconnect the pump. This has been done for both units.

# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT: If more space is required, use additional forms)

## 1. DESCRIPTION OF THE EVENT:

On December 7, 1990 at 0940 hours, the Unit 2 Gaseous Effluent Monitoring sampling pump for Iodine and Particulate was found unplugged. The sample pump was estimated to have been without power for about 40 minutes. While the sample pump was not operating, no gaseous effluent releases were in progress other than a routine purge of Unit 2 containment, which did not involve a significant level of radioactivity. For the duration of this event, Unit 2 was defueled, at atmospheric pressure (Reactor Vessel Head removed) and ambient temperature.

Continuous monitoring and the alarm function for radioactive releases to the environment via the Plant Main Vent are provided by the Main Vent Gaseous Monitor which was not affected by this event. The equipment affected, the Iodine and Particulate Samplers, collect samples which are counted weekly and the information is used to calculate cumulative Offsite Dose for inclusion in the Semi-annual Effluent Release Report. The Iodine and Particulate Samplers do not provide alarms or continuous indication of release rates. This event is reportable under 10 CFR 50.73(a)(2)(i)(B) because Technical Specification (TS) 3.3.3.9, Radioactive Gaseous Effluent Monitoring System, requires the Iodine and Particulate Samplers to be operated at all times.

Iodine and Particulate Sampling is performed using portable skid mounted equipment located in a fan room on the 69 foot level of the Auxiliary Building. Both samples are collected using a common pump. The sample pump receives power from a receptacle which is part of a lighting (general service) circuit. This circuit also includes 4 other receptacles. All 5 receptacles are labeled, "Do not use this receptacle. This circuit powers TS 3.3.3.9 equipment. Contact Chemistry." Proper operation of the sample pump is verified daily by a chemistry technician but there is no alarm if power is lost.

On December 7, 1990, an operator doing log checks found the sampling equipment unplugged. The pump motor housing was still warm, indicating that the pump had not been incapacitated long. The circuit had been connected to the receptacle via a Ground Fault Circuit Interrupter (GFCI). The GFCI had become unplugged. The operator reconnected the circuit and notified the Control Room.

An investigation was made into the cause of this event. The operator who discovered the unplugged equipment noted that contract laborers were erecting scaffolding in the area. He theorized that one of these workers may have inadvertently stepped on or bumped the cord, disconnecting it. The laborers were interviewed, but could not recall disconnecting the cord either on purpose or accidentally.

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## II. CAUSE OF EVENT:

The cause of this event is inadequate design. Equipment required by TSs to be operated continuously was not provided with a dedicated power supply or a remote alarm indicating a loss of power. Contributing to this event was a failure to secure the power line in place following a similar event on September 11, 1990 (LER 90-25) in which the line was purposely disconnected. Inadvertent disconnection of this line should have been anticipated at that time. A probable contributor to this event was personnel error due to a contract employee unknowingly stepping on or bumping the cord.

## III. ANALYSIS OF EVENT:

The Iodine and Particulate Samplers do not provide alarms or continuous indication of radioactive release rates. The samples are collected and counted weekly to calculate the cumulative release. While the sample pump was not operating, the plant was shutdown and no gaseous effluent releases were in progress other than a routine purge of Unit 2 containment, which did not involve a significant level of radioactivity. The Main Vent Gaseous Monitor was operable and no increase in radioactivity levels was noted during the event. Based on the above, this event is not considered safety significant.

## IV. CORRECTIVE ACTIONS

Power was promptly restored to the sampling equipment from the designated receptacle. A separate circuit, including a circuit breaker, has been provided for the pump. The designated receptacle to which the pump plug is connected is protected by a cover which will prevent the plug from being inadvertently disconnected. A sign has been placed on the cover warning personnel not to disconnect the pump. This has been done for both units.

A design change to make additional improvements to the pump has been initiated. The modifications planned include providing a path for sample discharge to stay inside the system without venting into the room where the pump is located, replacing temporary tubing with a more substantial and permanent flexible hose, and providing a permanent mount for the pump.

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TEXT (if more space is required, use additional forms)

## V. ADDITIONAL INFORMATION

### A. Affected Components:

Component	IEEE 804 System ID	IEEE 803 Component ID
Iodine and Particulate Sample Pump	N/A	1L

### B. Previous Similar Events:

As noted above, LER 90-25, Docket 50-317, detailed a similar event in which an inexperienced Health Physics technician mistakenly disconnected an extension cord being used to power the pump temporarily while maintenance was being performed in the area.