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R. E. DENTON  
GENERAL MANAGER  
CALVERT CLIFFS

November 30, 1990

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

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant  
Unit No. 1; Docket No. 50-317; License No. DPR 53  
Licensee Event Report 90-028, Revision 00

Gentlemen:

The attached voluntary report is being sent to you under the guidelines of NUREG-1022, Licensee Event Report System. Should you have any questions regarding this report, we will be pleased to discuss them with you.

Very truly yours,

RED/RHB/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

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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, 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)  
0 5 0 0 0 3 1 7 1

PAGE (3)  
1 OF 0 5

TITLE (4)  
Neither Train of Control Room Ventilation OPERABLE Due to Operator Error

EVENT DATE (6)			LER NUMBER (8)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)			
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)		
10	08	90	90	028	00	11	03	90	None	0 5 0 0 0 0		
										0 5 0 0 0 0		

OPERATING MODE (9) 1

POWER LEVEL (10) 1 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(e)	<input type="checkbox"/> 60.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 60.36(a)(1)	<input type="checkbox"/> 60.73(a)(2)(v)	<input type="checkbox"/> 73.71(e)
<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 60.36(a)(2)	<input type="checkbox"/> 60.73(a)(2)(vii)	<input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)
<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 60.73(a)(2)(i)	<input type="checkbox"/> 60.73(a)(2)(viii)(A)	Voluntary
<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 60.73(a)(2)(ii)	<input type="checkbox"/> 60.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 60.73(a)(2)(iii)	<input type="checkbox"/> 60.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME: R. H. Bense, Compliance Unit

TELEPHONE NUMBER: 3 0 1 2 6 0 - 3 7 3 8

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

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)

On October 18, 1990, it was identified that on October 8, 1990 neither train of the Control Room Emergency Ventilation System (CREVS) met the requirements for OPERABILITY for approximately seven and one-half hours. Since it was not recognized that neither train of CREVS was OPERABLE, the CREVS was not restored to OPERABLE within 2 hours in accordance with Technical Specification (TS) 3.0.5. However, both trains of the CREVS were restored to OPERABLE prior to the 8 hour time limit for the plant to be in HOT STANDBY. This event is being reported on a voluntary basis.

The cause of the event was personnel error. The Control Room Operators failed to verify the OPERABILITY of the redundant system prior to taking a system out of service for maintenance. The CREVS could have been restored to OPERABLE status promptly in the event of an accident involving loss of all off-site power. Therefore, the event is not safety significant.

Control Room Operators reviewed Standing Instruction 80-12, "Operability Verification of Redundant Components." This Standing Instruction provides specific requirements for verifying the OPERABILITY of the redundant system prior to taking a system out of service.

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

I. DESCRIPTION OF EVENT

On October 18, 1990, it was identified that on October 8, 1990 neither train of the Control Room Emergency Ventilation System (CREVS) met the requirements for OPERABILITY for approximately seven and one-half hours. Since it was not recognized that neither train of CREVS was OPERABLE, the CREVS was not restored to OPERABLE within 2 hours in accordance with Technical Specification (TS) 3.0.5. However, both trains of the CREVS were restored to OPERABLE prior to the 8 hour time limit for the plant to be in HOT STANDBY. This event is being reported on a voluntary basis.

Calvert Cliffs is a two Unit plant with a common Control Room. The Control Room is equipped with an Emergency Ventilation System consisting of two independent and redundant air conditioning units and filter trains. Technical Specification 3.7.6.1 requires that both air conditioning units and filter trains be OPERABLE when either Unit 1 or Unit 2 is in MODES 1, 2, 3 or 4. If one train of the CREVS is not OPERABLE, TS 3.7.6.1 allows 7 days to restore the system before a plant shutdown is required.

For a train of the CREVS to be OPERABLE, both the normal and emergency power supply must be available. Train 11 of the CREVS is powered from a Unit 1 Emergency Bus (11) and a Unit 1 Emergency Diesel Generator (EDG) (11). Train 12 of the CREVS is powered from a Unit 2 Emergency Bus (24) and a Unit 2 EDG (21). At the time of this event, only Unit 1 was operating and Unit 2 was defueled. EDG 21 is governed by Unit 2 Technical Specifications and was not required to be OPERABLE at the time of this event.

EDG 21, the emergency power source for train 12 of the CREVS, 's typically available even when Unit 2 is shutdown. However, to permit required maintenance on EDG 21 while Unit 1 is operating, the Calvert Cliffs operations staff demonstrates the OPERABILITY of train 12 of the CREVS based on the provisions of TS 3.0.5. TS 3.0.5 permits a system to be considered OPERABLE even if its emergency power supply is not operable provided that the normal power supply is OPERABLE and the redundant train is OPERABLE.

On October 8, 1990, train 11 of the CREVS was removed from service for routine preventive maintenance. Although EDG 21 was not available, train 12 of the CREVS was considered OPERABLE based on the provisions of TS 3.0.5. When train 11 of the CREVS became not OPERABLE due to this maintenance, the requirement imposed on train 12 of the CREVS by TS 3.0.5 that the redundant train be OPERABLE was not met. Therefore, taking train 11 out of service for maintenance for seven and one-half hours made both train 11 and train 12 of the CREVS not OPERABLE during that period. This situation was not recognized; therefore, the CREVS was not restored to OPERABLE within 2 hours in accordance with TS 3.0.5. However, both trains of the CREVS were restored to OPERABLE prior to the time limit TS 3.0.5 required for the plant to be placed in HOT STANDBY.

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Additionally, as a result of this event, an evaluation was made of the policy of invoking the provisions of TS 3.0.5 to allow train 12 of the CREVS to be considered OPERABLE when EDG 21 is not available to provide the emergency power source. Although this is allowed by TS 3.0.5, it was determined to be non-conservative because it allows train 12 of the CREVS to remain OPERABLE indefinitely without an emergency power supply. As a result, a policy was established that train 12 of the CREVS is not considered OPERABLE unless EDG 21 is OPERABLE or capable of providing its functional support role in accordance with the definition of OPERABILITY in TS Definition 1.6.

### II. CAUSE OF EVENT

The cause of the event was personnel error. The Control Room Operators failed to verify the OPERABILITY of the redundant system prior to taking a system addressed in Technical Specifications out of service for maintenance. The Control Room Operators did not record completion of the verification of OPERABILITY of the redundant system in the Control Room Log as is required by plant policy. Specific requirements for performing this verification and recording the results in the Control Room Log are contained in Nuclear Operations Department Standing Instruction 80-12, "Operability Verification of Redundant Components." This Standing Instruction specifically addresses the requirement to verify the availability of normal and emergency electrical power supplies as part of the OPERABILITY verification.

An additional contributing factor was having a system (CREVS train 12) which is required to be OPERABLE for Unit 1 receive its emergency power from a Unit 2 EDG. This factor, coupled with the practice of invoking TS 3.0.5 for a support system (EDG 21) that was not governed by Technical Specifications, contributed to the operator error.

### III. ANALYSIS OF EVENT

The two trains of Control Room Emergency Ventilation provide redundant capability for cooling and filtering of control room air. The CREVS ensures that: 1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system; and, 2) the control room will remain habitable for operations personnel during and following all credible accident conditions. Control Room habitability requirements are intended to conform to Criterion 19 of 10 CFR 50 Appendix A, General Design Criteria for Nuclear Power Plants.

Train 11 of the CREVS was removed from service on October 8, 1990 to inspect the belts for cooling coil fans. There were no mechanical problems with the system and the system could have been restored to OPERABLE status promptly in the event of an accident involving loss of all off-site power. Automatic starting or



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immediate initiation of the CREVS is not required to respond to an accident; therefore, this event is not considered safety significant.

#### IV. CORRECTIVE ACTIONS

Control Room Operators were required to review Standing Instruction 80-12, "Operability Verification of Redundant Components." This Standing Instruction provides specific requirements and guidance for verifying the OPERABILITY of the redundant system prior to taking a system addressed in Technical Specifications out of service. The Standing Instruction also requires that completion of this verification of the OPERABILITY of the redundant system is recorded in the Control Room Log.

A more conservative policy has been established and communicated to Control Room Operators for the implementation of TS 3.0.5. TS 3.0.5 clarifies the effect of a loss of the normal or emergency electrical power source on the OPERABILITY of a system. TS 3.0.5 permits invoking the ACTION requirement for only the power supply if the ACTION requirement associated with the power supply is less restrictive than the ACTION requirement for the system being powered. The policy established will permit TS 3.0.5 to be invoked only when the power supply is governed by a TS Limiting Condition for Operation that is in effect for the existing plant conditions. Consequently, if an EDG is not capable of providing emergency power to a train of the CREVS and that EDG is not governed by a TS ACTION requirement, then the corresponding train of the CREVS will be declared not OPERABLE.

As a result of the new policy for the implementation of TS 3.0.5, EDG 21 must be maintained in a functional status for train 12 of the CREVS to be OPERABLE. The Calvert Cliffs engineering staff has provided specific requirements for an EDG for demonstrating capability of providing the required support function for CREVS.

When only one Unit is operating, OPERABILITY of one train of the CREVS is dependent on the functional availability of the EDG dedicated to the Unit which is not operating. Design and procedure changes are being evaluated to permit greater flexibility when performing maintenance on an EDG associated with a non-operating unit. Other systems common to both Units were reviewed and no problems similar to the concern with the CREVS were identified.

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

V. ADDITIONAL INFORMATION

A. Affected Component:

Component	IEEE 804 System ID	IEEE 803 Component ID
Emergency Diesel Generator	EK	NA
Control Room Emergency Ventilation	VI	NA

B. There have been no previous similar events.