



CHARLES CENTER • P.O. BOX 1475 • BALTIMORE, MARYLAND 21203-1475

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

March 12, 1990

U. S. Nuclear Regulatory Commission  
Document Control Desk  
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Mail Stop P1-137  
11555 Rockville Pike  
Rockville, MD 20850

Docket No. 50-317  
License No. DPR 53

Dear Sirs:

The attached LER 90-06, 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

JV/sdw

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

APPROVED OMB NO. 3150-0104  
EXPIRES 8/31/88

FACILITY NAME (1)

Calvert Cliffs, Unit 1

DOCKET NUMBER (2)

0 5 0 0 0 3 1 7 1 OF 0 6

PAGE (3)

TITLE (4)

Missing Fire Protection Damper

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)		
02	09	90	90	006	00	03	12	90	Calvert Cliffs, Unit 2	0 5 0 0 0 3 1 8		
										0 5 0 0 0		

OPERATING MODE (9)		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)		20.406(e)		50.73(e)(2)(iv)		73.71(b)			
		20.408(a)(1)(i)		50.36(e)(1)		50.73(e)(2)(v)		73.71(e)			
		20.408(a)(1)(ii)		50.36(e)(2)		50.73(e)(2)(vi)		OTHER (Specify in Abstract below and in Text, NRC Form 366A)			
		20.408(a)(1)(iii)	X	50.73(e)(2)(ii)		50.73(e)(2)(viii)(A)					
		20.408(a)(1)(iv)		50.73(e)(2)(iii)		50.73(e)(2)(viii)(B)					
		20.408(a)(1)(v)		50.73(e)(2)(iii)		50.73(e)(2)(ix)					

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
J. Volkoff, Engineer	3 0 1 2 6 0 - 3 6 4 9

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)

YES (If yes, complete EXPECTED SUBMISSION DATE)	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X					

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

On February 9, 1990, while performing an inspection of Technical Specification (TS) ventilation duct fire barrier dampers, it was determined that four fire dampers were missing. Both units were shutdown at the time of discovery.

The cause of the event is that the penetrations were not identified as requiring dampers when the Fire Hazards Analysis of the plant was conducted.

The safety significance of the missing dampers is low based on other available fire safety features.

Fire detection and automatic sprinkler system operability were verified and an hourly fire watch has continued. A Facility Change Request has been initiated to install the missing dampers. All TS ventilation duct fire barrier dampers have been identified and inspected. The Surveillance Test Procedure used for inspecting ventilation duct fire barrier dampers will be rewritten to specify the fire dampers to be inspected. The Fire Protection/Appendix R Design Basis reconstitution is an ongoing long-term effort to verify the Fire Hazards Analysis and other fire protection documents.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 60.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), 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)  0500031790	LER NUMBER (5)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		00	06	00	02	OF 06

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

I. DESCRIPTION OF EVENT

At 1445, on February 9, 1990, while performing an inspection of Technical Specification (TS) ventilation duct fire barrier dampers, it was verified that four fire dampers were missing in the supply and exhaust ducts for the Battery Room Ventilation Systems. At the time, Calvert Cliffs Unit 1 was in Mode 5 (Cold Shutdown) at a temperature of 130 degrees F and a pressure of 150 psia. Unit 2 was defueled. The Shift Supervisor was immediately notified and TS Action Statement 3.7.12.a was entered. Equivalent compensatory actions had already been performed as a conservative measure. As required by the Action Statement, the operability of the automatic sprinkler system in Cable Chases 1A and 1B were verified and therefore, no fire watch was necessary. There is no automatic sprinkler in the Cable Spreading Room but there is a smoke detector. As a result, an hourly fire watch tour was initiated in the Cable Spreading Room.

The first step in the TS ventilation duct fire barrier damper inspection was to identify the location of each such fire damper on Calvert Cliffs mechanical prints. This inspection was part of the Fire Protection/Appendix R Design Basis reconstitution effort. Four of the ventilation duct locations requiring fire dampers were in two walls. One wall was between the Unit 1 Cable Spreading Room and Cable Chase 1B. The other wall separated the 1B and 1A Cable Chases. The second step of the inspection was to physically verify the existence and operability of the damper locations identified on the prints. The internal areas of the ducts in which these four dampers should have been installed were not accessible.

On December 8, 1989 it was determined that inspection holes were not available to inspect the four dampers. A compensatory action statement was entered equal to the one in the TS 3.7.12.a until the inspection holes were completed. This action was taken as a conservative measure until the existence and operability of the dampers could be verified. On February 9, 1990, inspection holes were completed allowing visual examination of the inside of the ventilation ducts. It was then discovered that the four dampers were missing.

II. CAUSE OF EVENT

The root cause of this event is that when the Fire Hazards Analysis of the plant was conducted, these four ventilation fire duct barriers were not identified as requiring fire dampers.

On December 21, 1979, we provided information to the NRC concerning Calvert Cliffs' compliance with Appendix A to Branch Technical Position APCSB 9.5-1. In our submittal we stated that the Cable Spreading Room and associated chases were enclosed by 3-hour rated fire barriers. The research done to verify that the

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TEXT (If more space is required, use addn. vol. NRC Form 360A's) (17)

3-hour rated fire barriers satisfied APCSB 9.5-1 did not identify that the Battery Ventilation ducts required four fire dampers. Consequently, access holes were not made for visual inspection of the areas.

A review of fire protection documentation did not reveal the reason that the requirement for these four dampers was not identified in the Fire Hazards Analysis. The personnel performing the Surveillance Test Procedure (STP) for inspecting the dampers did not identify the fact that the dampers were missing because the ducts had not been identified as requiring dampers and there was no access to the inside of the ducts.

**III. ANALYSIS OF EVENT**

A fire damper is typically installed in a ventilation duct where the duct penetrates the rated fire barrier. The damper is normally open to allow ventilation air flow, and will close in the event of a fire. In most dampers at Calvert Cliffs, a fusible link keeps the damper open and will separate when exposed to the high temperatures of a fire, allowing the damper to close.

The supply and exhaust ducts for the Battery Room Ventilation Systems penetrate the wall between the Unit 1 Cable Spreading Room into Cable Chase 1B. The ducts then penetrate the wall between the 1B Cable Chase and the 1A Cable Chase. There are no fire dampers in the ventilation ducts. The fire barriers are 3-hour rated TS barriers.

This event is reportable under 10 CFR 50.73(a)(2)(i)(B) because it represents a condition prohibited by the plants' Technical Specifications.

TS 3.7.12 states that, "All fire barrier penetrations (i.e., cable penetration barriers, fire doors and fire dampers), in fire zone boundaries, shall be OPERABLE." The fire dampers in this case were not OPERABLE because they were missing.

TS 4.7.12 requires that each of the fire dampers covered by TS 3.7.12 be verified OPERABLE at least once per 18 months by visual observation. In this case the fire dampers were not verified operable because they had not been previously identified or made accessible.

Mitigating circumstances in this case include.

- There are no duct openings in any of the rooms addressed in this report. Thus the duct would have had to fail on both sides of the barrier for heat and/or smoke to pass from one fire area to the other.

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TEXT (If more space is required, use additional NRC Form 305A's) (17)

- The rooms involved all have suppression systems installed. The 1A and 1B Cable Chases have automatic sprinklers. The Unit 1 Cable Spreading Room has a total flooding Halon System. These systems would commence operating prior to a fire threatening the barrier.
- All three rooms have smoke detection capability. This early notification of a fire allows manual fire fighting activities to begin during the early stages of fire.
- The primary combustible material in all 3 rooms is cable insulation. The cable insulation at Calvert Cliffs was chosen for its fire resistant properties.

Any one of the above mitigating factors provides reasonable assurance that the potential for smoke and/or fire propagation through the ductwork was very small. Thus, the safety significance of the missing dampers was low.

IV. CORRECTIVE ACTION

1. Upon suspecting that the dampers were missing, compensatory actions equal to Action Statement 3.7.12.a were performed until the ducts could be visually inspected. Fire detection and automatic sprinkler system operability were verified, and the hourly fire watch patrol was established. When it was determined that the dampers were missing, Action Statement 3.7.12.a was entered. Fire detection and automatic sprinkler system operability were again verified and the hourly fire watch has continued.
2. A Facility Change Request has been initiated to install the missing fire dampers.
3. Plant drawings have been reviewed to identify ventilation ducts requiring fire dampers. All of the dampers have been inspected. The fire dampers are all accessible and inspected as part of our STP program.
4. A new STP will be written that will specify the location of each TS ventilation duct fire barrier damper including the four fire dampers found missing.
5. The Fire Protection/Appendix R Design Basis reconstitution is an ongoing long-term effort to verify the Fire Hazards Analysis and other fire protection documents.

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

V. ADDITIONAL INFORMATIONA. Previous Similar Event

A similar event was documented in LER 317-89-011, "Missing Fire Protection Damper." The missing damper in that LER was identified as part of the same TS fire barrier review that identified the missing dampers in this LER.

A related event was documented in LER 317-89-025, "Technical Specification Violation - Missed Fire Watch Tour Due to Personnel Error." On December 11, 1989, the hourly fire watch tour was missed at midnight. The fire watch was part of the compensatory Action Statement entered based on suspicion that four of the dampers in the Battery Room Ventilation System were missing.

B. Affected Component Identification

<u>Component</u>	<u>IEEE 805 System ID</u>	<u>IEEE 803 Component</u>
Fire Damper	VF	BDMP
Battery Room Ventilation System	VF	VF
Automatic Sprinkler	KP	SRNK
Smoke Detector	IC	DET
Halon System	KQ	N/A

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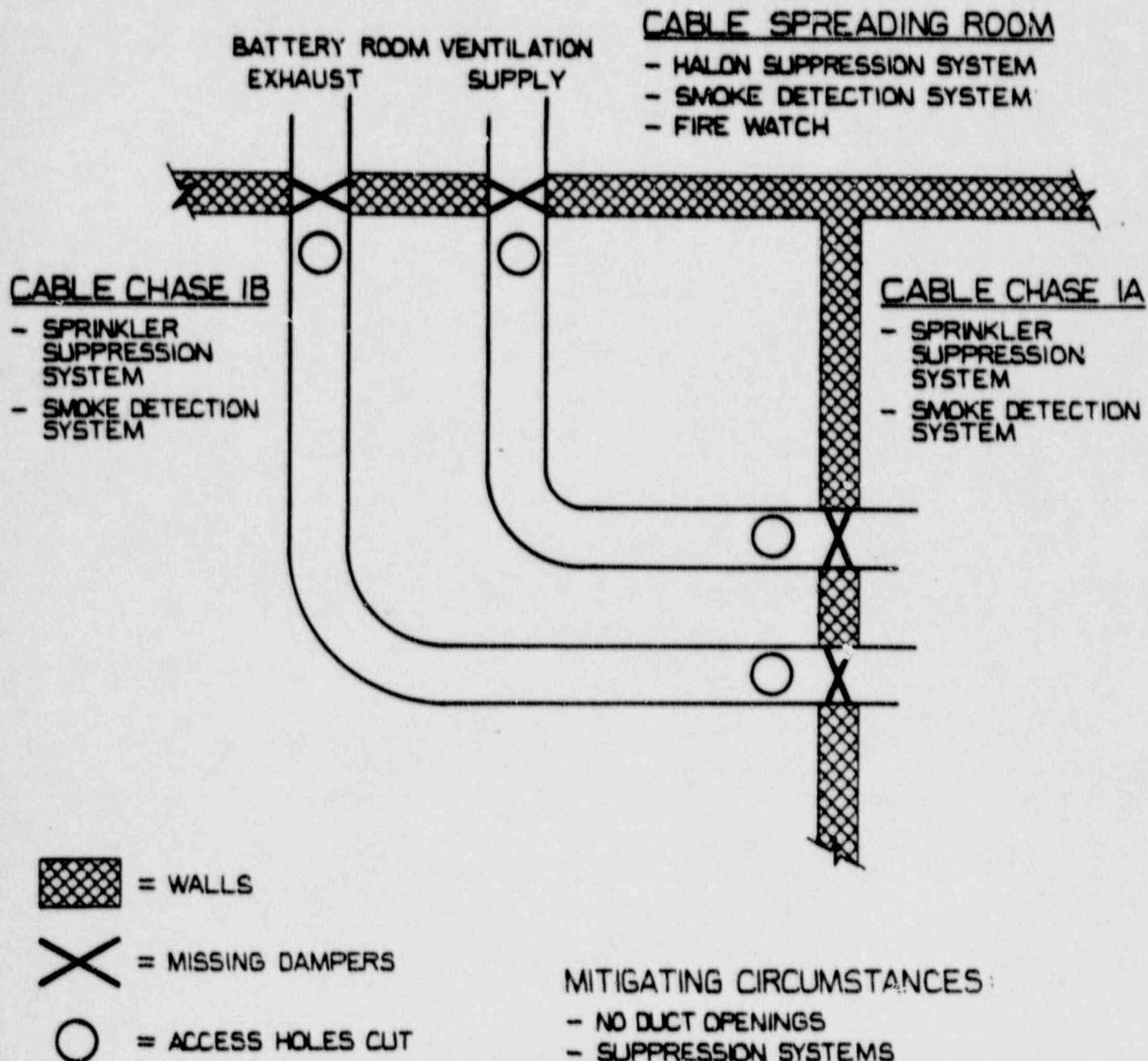
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Calvert Cliffs, Unit 1

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TEXT (If more space is required, use additional NRC Form 308A's) (17)

ARRANGEMENT OF CALVERT CLIFFS  
BATTERY ROOM VENTILATION DUCTING  
FROM THE CABLE SPREADING ROOM TO CABLE CHASE 1A.

## MITIGATING CIRCUMSTANCES:

- NO DUCT OPENINGS
- SUPPRESSION SYSTEMS
- SMOKE DETECTION
- CABLE INSULATION FIRE RESISTANT