

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Palo Verde Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 5 2 8										PAGE (3) 1 OF 0 3	
TITLE (4) Unanalyzed Fire Areas Due to Engineering Oversight																					

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	2	7	8	5	8	5	-	0	9	6	-	0	0	0	1	2	7	8	6	Palo Verde Unit 2						0 5 0 0 0 5 2 8																																																			
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)			20.402(b)																			20.405(c)																			50.73(a)(2)(iv)																			73.71(b)																		
0			20.405(a)(1)(i)																			50.38(e)(1)																			50.73(a)(2)(v)																			73.71(c)																		
9			20.405(a)(1)(ii)																			50.38(e)(2)																			50.73(a)(2)(vi)																			OTHER (Specify in Abstract below and in Text, NRC Form 366A)																		
6			20.405(a)(1)(iii)																			50.73(a)(2)(i)																			50.73(a)(2)(vii)(A)																																					
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			20.405(a)(1)(vi)																			50.73(a)(2)(iv)																			50.73(a)(2)(ix)																																					

LICENSEE CONTACT FOR THIS LER (12)										TELEPHONE NUMBER											
NAME										AREA CODE											
William F. Quinn, Manager of Nuclear Licensing (ext. 4087)										6 0 2 9 4 3 - 7 2 0 0											

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	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	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):										X NO														

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

On December 27, 1985, at 1054, with Unit 1 in Mode 1 (POWER OPERATION) at 96% power and Unit 2 in Mode 6 (REFUELING), it was determined that the seismic gap area between the Diesel Generator Building and the Control Building of each Unit had not been identified and analyzed during the Fire Hazard Analysis for the respective Unit. Since for each Unit, Train A and Train B safe shutdown cables transverse this gap area with no vertical fire-rated barrier separation, and since there is no fire detection and suppression equipment within the gap area, the potential exists for a fire in this area to cause a loss of both Diesel Generators in the affected Unit.

As immediate corrective action, a continuous fire watch was established at each seismic gap area and will be provided until a final design change is implemented. Existing access points to these areas will be sealed with 1-hour fire rated seismic gap seals. Based on this corrective action, an evaluation of these gap areas determined that the potential for a fire is minimal due to the low fixed combustible loads, the inaccessibility of the area to transient combustibles, and the absence of credible ignition sources. A safety analysis change will be prepared and will outline the justification for deviation from 10 CFR 50, Appendix R, Section III.G for these areas. A review of the Units has verified that all other seismic gap areas meet Appendix R commitments.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (5)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Palo Verde Unit 1	05000528	8	096	010	02	OF 03

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

On December 27, 1985, at 1054, with Unit in Mode 1 (POWER OPERATION) at 96% power and Unit 2 in Mode 6 (REFUELING), a fire protection engineer (non-licensed utility employee) was evaluating an Engineering Evaluation Request (EER) associated with the seismic gap area between the Diesel Generator Building (NB) and the Control Building (NA). The EER had been written to address the fact that the two doorway openings through this seismic gap area were enclosed with metal flashing on Unit 2, but were not enclosed on Unit 1. The evaluation of this EER determined that these seismic gap areas were not identified and analyzed during the Fire Hazard Analysis. Since for each Unit, Train A and Train B safe shutdown cables transverse this gap area through conduit expansion/deflection fittings and open cable trays with no vertical fire-rated barrier separation, and since there is no fire detection and suppression equipment within the gap area, the potential exists for a fire in this area to cause a loss of both Diesel Generators (DG) in the affected Unit.

As immediate corrective action, a continuous fire watch was established at each seismic gap area and will be provided until a final design change is implemented to reduce the probability of a significant fire in this area.

An evaluation of the seismic gap area between the Diesel Generator and Control Building was subsequently performed. Each seismic gap is 6 inches wide, 60 feet long and 53 feet high, and creates a closed space which adjoins the Train A and Train B fire areas of the Diesel Generator Building with those of the Control Building. The sides of the gap are enclosed by vertical metal expansion joint closures, and the top is enclosed by a neoprene expansion joint. The Diesel Generator and Control Building walls are independent 3-hour rated fire walls. The only probable entry points for transient combustibles are 2 doorway openings in each gap area. The fixed combustible load within each seismic gap is minimal, and consists of the neoprene boot material around the conduit fitting, the neoprene roof seal, and the cable insulation. The cables are IEEE-383 qualified and meet an additional criteria of resisting 210,000 BTU/hour of heat for the flame test. The neoprene material has a high chloride content which makes it naturally flame resistant. The closest dimension between Train A and B safe shutdown cables which transverse this gap is approximately 10 feet-9 inches; however, these cables are enclosed inside flexible neoprene boot material which offers a degree of fire resistance. The closest dimension between exposed (i.e. routed in open cable trays) Train A and B safe shutdown cables in this gap is approximately 23 feet. All circuits which pass through these seismic gap areas were verified to have proper fuse/breaker circuit protection to protect against auto ignition of the cables due to overcurrent conditions.

The major safety implication of this event is that a fire in this seismic gap area may result in a loss of both Diesel Generators for the respective Unit. The existing fixed combustible loads in the gap areas are minimal and no credible ignition sources exist. Prior to discovery of this event, a fire in the seismic gap area of sufficient magnitude to cause a loss of both Diesel Generators would require the admission of transient combustibles and an ignition source through the doorway openings. The feasibility of this type of fire was minimal due to an existing administrative control procedure governing transient combustibles. In addition, the utility fire protection staff continuously reviews the Units for transient combustibles. As permanent corrective action, 1-hour fire rated seismic gap seals will be installed around each of the doorway

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EXPIRES 8/31/98

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Palo Verde Unit 1	05000528	85	096	00	03	OF	03

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

openings through these areas. These seals will provide an effective fire barrier against exposure hazards associated with transient fire loads. Based on this corrective action and on the evaluation of the gap areas, the potential for a fire in these seismic gap areas is not credible due to the low fixed combustible loads, the inaccessibility of the areas to transient combustibles, and the absence of credible ignition sources. Therefore, a safety analysis change will be prepared and will outline the justification for deviation from 10 CFR 50, Appendix R, Section III.G for these seismic gap areas. There are no credible alternate circumstances that would have resulted in this event being more severe.

The root cause of this event was engineering oversight. During performance of the Fire Hazard Analysis, this seismic gap area for each Unit was not identified and, therefore, not evaluated. Subsequent to this event, a review of the Units has verified that all other Seismic gap areas meet Appendix R commitments. There have been no previous similar events.



Arizona Nuclear Power Project

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ANPP-34824-EEVB/JKO/98.07
January 27, 1986

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

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1 and 2
Docket No. STN 50-528 (License NPF-41)
Docket No. STN 50-529 (License NPF-46)
Licensee Event Report - 85-096-00
File: 86-020-404; G.1.01.10

Dear Sirs:

Attached please find Licensee Event Report (LER) No. 85-096-00 prepared and submitted pursuant to 10 CFR 50.73. In accordance with 10 CFR 50.73(d), we are herewith forwarding a copy of the LER to the Regional Administrator of the Region V Office.

If you have any questions, please contact me.

Very truly yours,

E. E. Van Brunt, Jr.
Executive Vice President
Project Director

EEVB/JKO/rw
Attachment

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A. L. Hon
E. A. Licitra
A. C. Gehr
INPO Records Center

IE22
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Licensee Event Report - 85-096-00
ANPP-34824
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