

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8911280329 DOC.DATE: 89/11/22 NOTARIZED: NO DOCKET #  
 FACIL:STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528  
 AUTH.NAME AUTHOR AFFILIATION  
 SHRIVER,T.D. Arizona Public Service Co. (formerly Arizona Nuclear Power  
 LEVINE,J.M. Arizona Public Service Co. (formerly Arizona Nuclear Power  
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-017-00:on 891023,four penetrations into seismic gap  
 area between diesel generator & control bldg.

W/8 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE:7  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

### NOTES:

05000528

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	ACRS WYLIE	1 1	AEOD/DOA	1 1
	AEOD/DSP/TPAB	1 1	AEOD/ROAB/DSP	2 2
	DEDRO	1 1	NRR/DEST/ESB 8D	1 1
	NRR/DEST/ICSB 7	1 1	NRR/DEST/MEB 9H	1 1
	NRR/DEST/MTB 9H	1 1	NRR/DEST/PSB 8D	1 1
	NRR/DEST/RSB 8E	1 1	NRR/DEST/SGB 8D	1 1
	NRR/DLPQ/HFB 10	1 1	NRR/DLPQ/PEB 10	1 1
	NRR/DOEA/EAB 11	1 1	NRR/DREP/RPB 10	2 2
	NUDOCS-ABSTRACT	1 1	<u>REG FILE 02</u>	1 1
	RES/DSIR/EIB	1 1	RGN5 FILE 01	1 1
EXTERNAL:	EG&G WILLIAMS,S	4 4	L ST LOBBY WARD	1 1
	LPDR	1 1	NRC PDR	1 1
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Arizona Public Service Company

PALO VERDE NUCLEAR GENERATING STATION  
P.O. BOX 52034 • PHOENIX, ARIZONA 85072-2034

192-00550-JML/TDS/KR  
November 22, 1989

U. S. Nuclear Regulatory Commission  
Document Control Desk  
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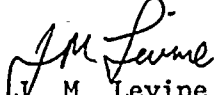
Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS) :  
Unit 1  
Docket No. STN 50-528 (License No. NPF-41)  
Licensee Event Report 1-89-017-00  
File: 89-020-404

Attached please find Licensee Event Report (LER) No. 89-017-00 prepared and submitted pursuant to 10CFR50.73. In accordance with 10CFR50.73(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 T. D. Shriver, Compliance Manager at (602) 393-2521.

Very truly yours,

  
J. M. Levine  
Vice President  
Nuclear Production

JML/TDS/KR/kj

Attachment

cc: W. F. Conway (all w/a)  
E. E. Van Brunt  
J. B. Martin  
T. J. Polich  
M. J. Davis  
A. C. Gehr  
INPO Records Center

8911280329 891023  
PDR ADOCK 05000528  
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IE22  
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EXPIRES: 4/30/92

## 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-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) **Palo Verde Unit 1** DOCKET NUMBER (2) **0 5 0 0 0 5 2 8** PAGE (3) **1 OF 0 6**

TITLE (4)  
**Four Penetrations into Seismic Gap Area Between Diesel Generator and Control Building**

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)									
									Palo Verde Unit 2		0 5 0 0 0 5 2 9									
1	0	2	3	8	9	8	9	0	1	7	0	0	1	1	2	2	8	9	Palo Verde Unit 3	0 5 0 0 0 5 3 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10)	0 0 0	20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)			
		20.406(a)(1)(i)		50.38(c)(1)		50.73(a)(2)(v)		73.71(c)			
		20.405(a)(1)(ii)		50.38(c)(2)		50.73(a)(2)(vii)		OTHER (Specify in Abstract below and in Text, NRC Form 366A)			
		20.406(a)(1)(iii)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(A)					
		20.405(a)(1)(iv)		50.73(a)(2)(iii)		50.73(a)(2)(vii)(B)					
		20.406(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(ix)					

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Timothy D. Shriver, Compliance Manager	6 0 2 3 9 3 - 2 5 2 1

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input type="checkbox"/> NO		0	2	2 8 9 0

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

On October 23, 1989, at approximately 1030 MST, Palo Verde Unit 1 was in a refueling outage with the core off-loaded, Palo Verde Unit 2 was in Mode 3 (HOT STANDBY) and Palo Verde Unit 3 was in Mode 5 (COLD SHUTDOWN) when four unsealed penetrations into the Unit 3 seismic gap area between the Diesel Generator Building and the Control Building were discovered during a visual inspection of the 94' Diesel Building pipe trenches. The equivalent penetrations in both Units 1 and 2 were visually verified to be unsealed. In addition, the Unit 1 Diesel Generator "A" Control Equipment Room pipe trench floor had traces of diesel oil.

Since safe shutdown cables transverse this gap area with no vertical fire-rated barrier separation, and since there is no fire detection or suppression equipment within the gap area, the potential exists for a flammable or combustible liquid spill-type fire in this area to cause a loss of both Diesel Generators in the affected Unit.

As immediate corrective action, fire watches were established in all three Units for the seismic gap area. An independent investigation is being conducted to determine the root cause and actions to prevent recurrence. The results of the investigation will be included in a supplement to this report which will be submitted by February 28, 1990.

A previous similar event was reported in LER 85-096-00.



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 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)  Palo Verde Unit 1	DOCKET NUMBER (2)  050005288	LER NUMBER (6)			PAGE (3)		
		YEAR 89	SEQUENTIAL NUMBER 0117	REVISION NUMBER 00	02	OF	06

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

## I. DESCRIPTION OF WHAT OCCURRED:

## A. Initial Conditions:

On October 23, 1989, Palo Verde Unit 1 was in a refueling outage with the core (AC) off-loaded to the Spent Fuel Pool. Palo Verde Unit 2 was in Mode 3 (HOT STANDBY). Palo Verde Unit 3 was in Mode 5 (COLD SHUTDOWN).

## B. Reportable Event Description (Including Dates and Approximate Times of Major Occurrences):

## Event Classification:

Condition specified in the Plant's Technical Specifications (6.9.3) as a violation of the requirements of the fire protection program described in the Updated Final Safety Analysis Report (FSAR) Appendix 9B.2 Fire Hazard Analysis, which would adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

On October 23, 1989, at approximately 1030 MST, four unsealed penetrations into the Unit 3 seismic gap area between the Diesel Generator Building (NB) and the Control Building (NA) were discovered during a visual inspection of the area.

During a walk-down conducted by APS engineers (contractor and utility, non-licensed), at approximately 1530 MST, on October 19, 1989, it was questioned if there was a potential for penetrations to be located in the pipe trenches in the Control Equipment Room located on the 100' elevation of the Diesel Generator Building. The question was raised due to the perpendicular orientation of the trenches to the fire wall. As a result of the walk-down, a work request was issued to remove the floor grating over the 100' Diesel Building pipe trenches to visually inspect the pipe trenches for adequate sealing from the seismic gap area that separates the Diesel Generator Building from the Control Building.

On October 23, 1989, at approximately 1030 MST, APS engineers (utility, non-licensed) visually inspected the pipe trenches exposed after the floor grating had been removed and discovered four unsealed penetrations into the Unit 3 seismic gap area between the Diesel Generator Building and the Control Building.

At approximately 1145 on October 23, 1989, Fire Protection personnel (utility, non-licensed) were notified of the unsealed





LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Palo Verde Unit 1	0   5   0   0   0   5   2   8	8   9	—   0   1   7	—   0   0	0   3	OF	0   6

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

penetrations and as immediate corrective action, fire watches were established in all three Units for the seismic gap.

As a result of the walk-down, it was identified that the Diesel Generator Building fire wall at elevation 94' has 4 unsealed openings into the seismic gap area. Two openings are located under the door way; each approximately 4 feet 3 inches high by 1 foot 4 inches wide. The other two openings are located at the 94' elevation in the Diesel Generator Building "A" and "B" Diesel Control Equipment Room trenches. These openings are approximately 4 feet 3 inches high by 3 feet 3 inches wide. Subsequently, on October 23, 1989, the equivalent penetrations in both Units 1 and 2 were visually verified to be unsealed.

In addition, on October 23, 1989, it was noted that the Unit 1 Diesel Generator Building "A" Diesel Control Equipment Room pipe trench floor had traces of diesel oil. Further investigation by APS engineers (utility, non-licensed) indicated that the diesel oil residue originated from overflow through the floor drain located in the trench during maintenance of the oil strainers in Diesel Generator "A" Engine Room while the drain sumps were tagged out by Operations.

A 6-inch seismic gap area separates the Diesel Generator Building from the Control Building. The seismic gap is necessary to allow for relative seismic motion of the two buildings. The Diesel Generator Building and the Control Building are separated by two independent 3 hour fire rated walls. Since there is no fire detection or suppression equipment within the gap area, all penetrations through the walls are required to be sealed with materials of equivalent fire resistance unless approved deviations are documented in the fire hazards analysis. This configuration assures that a fire originating in either the Diesel Generator Building or the Control Building will not propagate into the seismic gap.

Control cables associated with the diesel generators are routed from the Diesel Generator Building into the Control Building. The Train A and Train B safe shutdown cables transverse the seismic gap area through conduit expansion/deflection fittings and open cable trays and have no vertical fire-rated barrier separation.

A Plant Change Request has been written to initiate a design change to seal the four pipe trench openings in the 3 hour fire area boundary wall at the seismic gap to protect redundant safe



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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FACILITY NAME (1)

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

shutdown cables in the seismic gap area in order to prevent possible fire exposure to both safe shutdown trains.

- C. Status of structures, systems, or components that were inoperable at the start of the event that contributed to the event:

Not applicable - no structures, systems, or components were inoperable at the start of the event which contributed to this event.

- D. Cause of each component or system failure, if known:

Not applicable - no component or system failures were involved.

- E. Failure mode, mechanism, and effect of each failed component, if known:

Not applicable - no component failures were involved.

- F. For failures of components with multiple functions, list of systems or secondary functions that were also affected:

Not applicable - no component failures were involved.

- G. For a failure that rendered a train of a safety system inoperable, estimated time elapsed from the discovery of the failure until the train was returned to service:

Not applicable - no failures were involved which rendered a train of a safety system inoperable.

- H. Method of discovery of each component or system failure or procedural error:

Not applicable - there have been no component or system failures or procedural errors identified.

- I. Cause of event

The final root cause determination has not been completed. An independent investigation of this event is being conducted in accordance with the PVNGS Incident Investigation Program. As part of the investigation, a determination of the cause of the event will be performed. The event investigation is expected to be completed by January 31, 1990. The results of the root cause



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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FACILITY NAME (1)

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

determination will be described in a supplement to this report which will be submitted by February 28, 1990.

## J. Safety System Response:

Not applicable - there were no safety system responses and none were necessary.

## K. Failed Component Information:

Not applicable - no component failures were involved.

## II. ASSESSMENT OF THE SAFETY CONSEQUENCES AND IMPLICATIONS OF THIS EVENT:

An assessment of the safety consequences and implications of this event is in progress. A summary of this assessment will be provided in the supplement to this report.

## III. CORRECTIVE ACTION:

## A. Immediate:

Fire watches have been established in Units 1, 2, and 3 for the areas with improperly sealed penetrations to the seismic gap area. The fire watches will be maintained until the penetrations are properly sealed.

A Plant Change Request has been written to initiate a design change to seal the four pipe trench openings in the 3 hour fire area boundary wall at the seismic gap. The fire seals will protect redundant safe shutdown cables in the seismic gap area in order to prevent possible fire exposure to both safe shutdown trains. The penetrations will be properly sealed by February 28, 1990.

## B. Action to Prevent Recurrence:

An engineering evaluation and inspection of the seismic gap area will be completed by January 31, 1990 to provide additional assurance that all penetration seals required are installed and intact.

An independent investigation of this event is being conducted in accordance with the PVNGS Incident Investigation Program.



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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

Additional actions to prevent recurrence may be developed based upon the results of this independent evaluation. In addition, the evaluation will address the root cause of trace oil on the pipe trench floor and specify corrective actions, as appropriate. The event investigation is expected to be completed by January 31, 1990. The results of investigation and a discussion of why previous corrective actions did not identify and correct this condition will be described in a supplement to this report which will be submitted by February 28, 1990.

## IV. PREVIOUS SIMILAR EVENTS:

LER 85-096-00 identified two doorway openings through the seismic gap area between the Diesel Generator Building and the Control Building which had not been identified and analyzed during the Fire Hazard Analysis. Corrective action included installation of fire seals around each of the doorway openings in the seismic gap area. Based upon the results of the PVNGS independent investigation of this event, a discussion of why previous corrective actions did not identify and correct this condition will be included in the supplement to this report.

