

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9005010135 DOC.DATE: 90/04/26 NOTARIZED: NO DOCKET #  
 FACIL:STN-50-530 Palo Verde Nuclear Station, Unit 3, Arizona Publi 05000530  
 AUTH.NAME AUTHOR AFFILIATION  
 BRADISH,T.R. 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 90-003-00:on 900328,emergency diesel generator  
 inoperable due to painting.

W/9 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:Standardized plant.

05000530

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD5 LA	1 1	PD5 PD	1 1
	PETERSON,S.	1 1	CHAN,T	1 1
INTERNAL:	ACNW	2 2	ACRS	2 2
	AEOD/DOA	1 1	AEOD/DSP/TPAB	1 1
	AEOD/ROAB/DSP	2 2	DEDRO	1 1
	NRR/DET/ECMB 9H	1 1	NRR/DET/EMEB9H3	1 1
	NRR/DET/ESGB 8D	1 1	NRR/DLPQ/LHFB11	1 1
	NRR/DLPQ/LPEB10	1 1	NRR/DOEA/OEAB11	1 1
	NRR/DREP/PRPB11	2 2	NRR/DST/SELB 8D	1 1
	NRR/DST/SICB 7E	1 1	NRR/DST/SPLB8D1	1 1
	NRR/DST/SRXB 8E	1 1	REG FILE 02	1 1
	RES/DSIR/EIB	1 1	RGN5 FILE 01	1 1
EXTERNAL:	EG&G STUART,V.A	4 4	L ST LOBBY WARD	1 1
	LPDR	1 1	NRC PDR	1 1
	NSIC MAYS,G	1 1	NSIC MURPHY,G.A	1 1
	NUDOCS FULL TXT	1 1		
NOTES:		1 1		

NOTE TO ALL "RIDS" RECIPIENTS:

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Ad 4

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

JAMES M. LEVINE  
VICE PRESIDENT  
NUCLEAR PRODUCTION

192-00653-JML/TRB/DAJ  
April 26, 1990

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

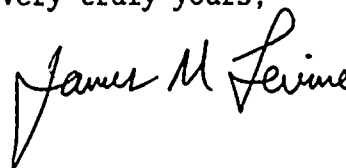
Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Unit 3  
Docket No. STN 50-530 (License No. NPF-74)  
Licensee Event Report 90-003-00  
File: 90-020-404

Attached please find Licensee Event Report (LER) No. 90-003-00 prepared and submitted pursuant to 10CFR50.73. In accordance with 10CFR50.73(d), we are herewith forwarding a copy of this LER to the Regional Administrator of the Region V office.

If you have any questions, please contact T. R. Bradish, Compliance Manager at (602) 393-2521.

Very truly yours,



JML/TRB/DAJ/tlg

Attachment

cc: W. F. Conway (all with attachment)  
E. E. Van Brunt  
J. B. Martin  
D. H. Coe  
T. L. Chan  
A. C. Gehr  
J. R. Newman  
INPO Records Center

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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-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 3

DOCKET NUMBER (2)

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

PAGE (3)

TITLE (4)

Emergency Diesel Generator Inoperable Due To Painting

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)
0	3	2	8	9	0	9	0	0	N/A		0 5 0 0 0
0	3	2	8	9	0	9	0	0	N/A		0 5 0 0 0

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

OPERATING MODE (9)	20.402(b)	20.406(c)	60.73(a)(2)(iv)	73.71(b)
1	20.406(a)(1)(i)	60.36(c)(1)	60.73(a)(2)(v)	73.71(c)
POWER LEVEL (10)	20.406(a)(1)(ii)	60.36(c)(2)	60.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
1 0 0	20.406(a)(1)(iii)	X 60.73(a)(2)(i)	60.73(a)(2)(vii)(A)	
	20.406(a)(1)(iv)	60.73(a)(2)(ii)	60.73(a)(2)(vii)(B)	
	20.406(a)(1)(v)	60.73(a)(2)(iii)	60.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

Thomas R. Bradish, Compliance Manager

TELEPHONE NUMBER

AREA CODE 6 0 2 3 9 3 1 - 2 5 2 1

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
<input checked="" type="checkbox"/>	<input type="checkbox"/>				

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

At approximately 1345 MST on March 28, 1990, Palo Verde Unit 3 was in Mode 1 (POWER OPERATION) at approximately 100 percent power when an APS System Engineer discovered that the Train "A" Emergency Diesel Generator (EDG) was inoperable as a result of paint in the fuel pump fuel metering rod ports in cylinders 5R, 8R, and 10R. The paint in the fuel metering rod ports most likely would have prevented operation of the diesel fuel injection system. Painting in the vicinity of the fuel metering rod ports had occurred in the afternoon of March 27, 1990.

Immediately upon discovery, the System Engineer inspected the EDG to ensure that no other ports had paint which could affect EDG operability, the Shift Supervisor was contacted, work stopped, and the paint removed from the fuel metering rod ports. Following appropriate operability testing, EDG Train "A" was returned to service at approximately 1807 MST on March 28, 1990.

The cause of the event was inadequate instructions during the pre-job briefings given to describe which items were not to be painted. As corrective action, an additional walkdown and training were held, and an enhanced work document was prepared. An APS evaluation will determine the appropriate course of action to take to ensure future work documents and pre-job briefings for painting contain adequate instructions.

There have been no previous similar events reported pursuant to 10CFR50.73.



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 3	DOCKET NUMBER (2)  0 5 0 0 0 5 3 0	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

## I. DESCRIPTION OF WHAT OCCURRED:

## A. Initial Conditions:

At approximately 1345 MST on March 28, 1990, Palo Verde Unit 3 was in Mode 1 (POWER OPERATION) at approximately 100 percent power.

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

Event Classification: Condition prohibited by the plant's Technical Specifications.

At approximately 1345 MST on March 28, 1990, an APS System Engineer (non-utility, non-licensed) performing a walkdown of the Unit 3 Train "A" Emergency Diesel Generator (EDG)(EK)(DG) discovered paint in the fuel pump fuel metering rod ports (P) for cylinders 5R, 8R, and 10R. While the diesel was not started for testing, the paint most likely disabled the diesel's fuel injection system resulting in EDG "A" being inoperable. Painting had last occurred in the area during the afternoon of March 27, 1990. The ACTION requirements of Technical Specification 3.8.1.1 for one EDG inoperable were not met until the condition was discovered on March 28, 1990.

Technical Specification 3.8.1.1 ACTION b states, "With one emergency diesel generator ... inoperable, demonstrate the OPERABILITY of the A.C. offsite sources ... within 1 hour and at least once per 8 hours thereafter; and if the EDG became inoperable due to any cause other than preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE EDG ... within 24 hours; restore the diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours."

Prior to the event discovery, an approved work authorization document (work order) was prepared and issued to have the Unit 3 Train "A" EDG painted. In accordance with the work order and prior to commencing the work, a walkdown involving the responsible System Engineer and foreman of the individuals who were to perform the painting (non-utility, non-licensed) was conducted to describe which components were not to be painted. The System Engineer instructed the foreman not to paint below the shroud assembly that is above the fuel pump. The foreman subsequently held pre-job



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 0	- 0 0 3	- 0 0	0 3	OF	0 6

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

briefings with the individuals who would be doing the painting (non-utility, non-licensed). The pre-job briefings involved walkdowns and discussions with the painters regarding areas not to be painted. Instructions were given not to paint below the shroud; however, the painters understood that this meant not to paint anything in the immediate vicinity below the shroud. In particular, they did not understand that they were to avoid getting paint on the fuel pump fuel metering rod port on the back of the fuel pump.

Painting began on March 21, 1990. The area surrounding the 5R, 8R, and 10R cylinders was painted on the afternoon of March 27, 1990. On March 28, 1990, the System Engineer performed a walkdown of the Train "A" EDG since he was aware that the painting was in progress. At approximately 1345 MST the System Engineer noted paint in the fuel metering rod ports on cylinders 5R, 8R, and 10R. The System Engineer inspected the remaining fuel metering rod ports and other diesel components and verified that no other paint could affect EDG operability. The diesel was not started for testing; however, the System Engineer determined that the paint would most likely prevent the fuel metering rods from fully moving. This would have disabled the fuel injection system and prevented the diesel from starting.

The System Engineer contacted the Shift Supervisor, ongoing painting activities were stopped, and paint was removed from the fuel metering rod ports. The one-hour verification of the off-site A.C. sources required by Technical Specification 3.8.1.1 ACTION b was performed at approximately 1422 MST. Following completion of paint removal and appropriate surveillance testing, EDG "A" was returned to service at approximately 1807 MST on March 28, 1990. At approximately 1825 on March 28, 1990, EDG Train "B" was started in accordance with an approved surveillance test procedure satisfying requirements of Technical Specification 3.8.1.1 ACTION b.

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

Other than Emergency Diesel Generator (EDG) Train "A", no structures, system or components were inoperable which contributed to this event. The Train "A" EDG was inoperable from the afternoon of March 27, 1990 until approximately 1807 MST on March 28, 1990.





LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

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Palo Verde Unit 3

0 5 0 0 0 5 3 0

YEAR SEQUENTIAL NUMBER REVISION NUMBER

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

## 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 failures 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.

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

There were no component or system failures or procedural errors. The paint potentially affecting the ability of the Train "A" EDG to start was discovered by the System Engineer during a system walkdown as described in Section I.B. An investigation of this event was performed in accordance with the PVNGS Incident Investigation Program. Based upon the results of this investigation, it was determined that the work document which controlled the painting activity could be improved by including instructions describing areas not to be painted. The work order adequately contained instructions to conduct the pre-job briefings.

## I. Cause of Event:

The cause of the event was personnel error which resulted from inadequate instructions and poor communication during the pre-job briefings held by the painter foreman (non-utility, non-licensed)(SALP Code A - personnel error). As described in Section I.B, instructions were given not to paint below the shroud that is above the fuel pump. However, the painter's interpreted this to



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

mean that they were not to paint the items below the shroud and adjacent to it (e.g., fuel pump fuel metering rod). The painters did not understand that the entire fuel pump was not to be painted.

It appears that during the painting of the shroud area, paint may have dripped onto the back of the fuel pump and was then painted over. Since the painters did not understand that the fuel pump fuel metering rod required unobstructed passage through the fuel pump and out the port in the back, the painters did not remove the paint. There were no unusual characteristics of the work location which contributed to the event.

## J. Safety System Response:

Not applicable - no safety system responses occurred 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:

The OPERABILITY of the alternating current (A.C.) and direct current (D.C.) power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety-related equipment required for (1) the safe shutdown of the facility and (2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criterion 17 of Appendix "A" to 10CFR 50.

The Train "B" Emergency Diesel Generator (EDG) was operable during the time that the Train "A" EDG was not able to start. Additionally, two physically independent off-site circuits were available and supplying power to the Unit 3 Class 1E distribution system (EB). Adequate power sources were available during the period of diesel inoperability to assure safe plant operations. Therefore, there were no safety consequences or implications resulting from this event.



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TEXT CONTINUATION

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

## III. CORRECTIVE ACTIONS:

## A. Immediate:

As immediate corrective action, the Shift Supervisor stopped work, the paint was removed from the fuel pump fuel metering rod port, and it was verified that there were no other components necessary for diesel operability that could be prevented from operating by paint. Appropriate surveillance testing was performed and EDG Train "A" was returned to service as described in Section I.B.

## B. Action to Prevent Recurrence:

As action to prevent recurrence, an additional detailed walkdown was held to outline specific areas not to be painted and a training briefing involving the personnel responsible for painting, the painter foreman, the System Engineer, and the individual responsible for preparing a new work order was held to discuss this event, review the painting specifications, and ensure that everyone understood the locations where paint was not to be applied. Additionally, an enhanced work order has been prepared which describes in detail (including photographs) the components which are not to be painted. APS will perform an evaluation to determine the appropriate manner in which to ensure that future work orders used by Units 1, 2, and 3 adequately describe precautions and limitations during painting. The evaluations and the appropriate course of action will be completed by July 1, 1990.

## IV. PREVIOUS SIMILAR EVENTS:

There have been no previous similar events reported pursuant to 10CFR50.73.

