

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8709020017 DOC. DATE: 87/08/26 NOTARIZED: NO DOCKET #  
 FACIL: STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528  
 AUTH. NAME AUTHOR AFFILIATION  
 BRADISH, T. R. Arizona Nuclear Power Project (formerly Arizona Public Serv  
 HAYNES, J. G. Arizona Nuclear Power Project (formerly Arizona Public Serv  
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-021-00: on 870729, control room essential filtration  
 actuation initiated on Channels A & B of ESFAS. Caused by  
 voltage spike. Monitor reset, returning setpoint to specified  
 value. W/870826 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5  
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: Standardized plant. M. Davis, NRR: 1Cy.

05000528

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD5 LA	1 1	PD5 PD	1 1
	LICITRA, E	1 1	DAVIS, M	1 1
INTERNAL:	ACRS MICHELSON	1 1	ACRS MOELLER	2 2
	AEOD/DOA	1 1	AEOD/DSP/NAS	1 1
	AEOD/DSP/ROAB	2 2	AEOD/DSP/TPAB	1 1
	DEDRO	1 1	NRR/DEST/ADS	1 0
	NRR/DEST/CEB	1 1	NRR/DEST/ELB	1 1
	NRR/DEST/ICSB	1 1	NRR/DEST/MEB	1 1
	NRR/DEST/MTB	1 1	NRR/DEST/PSB	1 1
	NRR/DEST/RSB	1 1	NRR/DEST/SGB	1 1
	NRR/DLPQ/HFB	1 1	NRR/DLPQ/QAB	1 1
	NRR/DOEA/EAB	1 1	NRR/DREP/RAB	1 1
	NRR/DREP/RPB	2 2	NRR/PMAS/ILRB	1 1
	<u>REG FILE</u> 02	1 1	RES DEPY GI	1 1
	RES TELFORD, J	1 1	RES/DE/EIB	1 1
	RGN5 FILE 01	1 1		
EXTERNAL:	EG&G GROH, M	5 5	H ST LOBBY WARD	1 1
	LPDR	1 1	NRC PDR	1 1
	NSIC HARRIS, J	1 1	NSIC MAYS, G	1 1

NOTES: 1 1

TOTAL NUMBER OF COPIES REQUIRED: LTTR 45 ENCL 44



APPROVED OMB NO. 3150-0104

**EXPIRES: 8/31/88**

**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) ESF Actuation Caused By A Voltage Spike Concurrent with Low Radiation Monitor Setpoint																																									
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)								
																											N/A						0 5 0 0 0								
0 7			2 9			8 7			7 8			7 8			0 2			1 0			0 8			2 6			8 7			N/A						0 5 0 0 0					
OPERATING MODE (9) 3						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)						20.406(c)						<input checked="" type="checkbox"/> 50.73(a)(2)(iv)						73.71(b)																	
						20.406(a)(1)(i)						50.38(a)(1)						50.73(a)(2)(v)						73.71(c)																	
						20.406(a)(1)(ii)						50.38(a)(2)						50.73(a)(2)(vi)						OTHER (Specify in Abstract below and in Text, NRC Form 365A)																	
						20.406(a)(1)(iii)						50.73(a)(2)(i)						50.73(a)(2)(vii)(A)																							
						20.406(a)(1)(iv)						50.73(a)(2)(ii)						50.73(a)(2)(viii)(B)																							
20.406(a)(1)(v)						50.73(a)(2)(iii)						50.73(a)(2)(ix)																													
LICENSEE CONTACT FOR THIS LER (12)																																									
NAME Thomas R. Bradish, Compliance Supervisor																				TELEPHONE NUMBER																					
																				AREA CODE 6 0 2					3 9 3 - 3 5 3 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 type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO																																									
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)																																									
<p>On July 29, 1987 at 0008 MST, Palo Verde Unit 1 was in Mode 3 (Hot Standby) when a Control Room Essential Filtration Actuation was initiated on Channels A and B of the Engineered Safety Features Actuation System.</p> <p>The root cause of the actuation was a voltage spike, believed to be caused by equipment noise in the "A" Control Room Ventilation Intake Noble Gas Monitor (RU-29), compounded by the monitor having been reset to the default alarm/trip setpoint. The reset was attributed to a temporary loss of power to the associated Remote Indicating Controller during an electrical storm on July 28, 1987. The default alarm/trip setpoint is approximately 1 decade less than the value specified in the technical specifications. Had the setpoint been at the specified value, no actuation signal would have occurred.</p> <p>As corrective action the monitor was reset, returning the setpoint to the specified value. Ongoing corrective action to prevent recurrence involves revising the default alarm/trip setpoints to be consistent with the technical specifications.</p> <p>Other events involving CREFAS actuations have been reported, including LER 1-87-001 which also resulted from a monitor set at the default value, however, these events did not involve the root cause noted above.</p>																																									
8709020017 870826 PDR ADOCK 05000528 S PDR																																									



## 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 (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Palo Verde Unit 1	0 5 0 0 0 5 2 8	8 7	— 0 2 1	— 0 0	0 2	OF	0 3

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

On July 29, 1987, at 0008 MST, Palo Verde Unit 1 was in Mode 3 (Hot Standby) when a Control Room Essential Filtration Actuation (CREFAS) was initiated on Train "A" of the Engineered Safety Features Actuation System (ESFAS)(JE). The Train "A" CREFAS cross-tripped the Train "B" CREFAS, per design, and all associated equipment operated satisfactorily. The CREFAS was initiated by the "A" Control Room Ventilation Intake Noble Gas Monitor (RU-29)(IL)(RI). This constitutes actuation of the Engineered Safety Features (ESF)(JE). The actuations were identified by the control room operators (utility-licensed) as a result of main control board (MCBD) annunciations.

Following the ESF actuations, the control room operators (utility-licensed) verified that there were no actual radiation level increases by comparing the RU-29 results to the "B" Control Room Ventilation Intake Noble Gas Monitor (RU-30)(IL)(RI). A Radiation Protection (RP) technician (contractor non-licensed) then checked the alarm/trip setpoint for RU-29 and found it to be at the default value (2.20 XE-6 micro curies [Ci]/cubic centimeter [cc]). The specified alarm/trip setpoint for RU-29 is 2.0 XE-5 micro Ci/cc, a difference of approximately 1 decade. The peak spike on RU-29 was measured at 2.81 XE-6 micro Ci/cc. Had the alarm/trip setpoint been at the specified value, the actuations would not have occurred. The RU-29 alarm/trip setpoint was reset to the specified value.

Based on the above information, the shift supervisor (utility-licensed) determined the alarm/trip to be spurious. At 0019 MST, the control room operators (utility-licensed) placed CREFAS "A" in bypass and declared RU-29 inoperable. The actuated equipment was returned to normal status at 0034 MST. The event lasted approximately 26 minutes.

At 0045 MST a RP technician (contractor non-licensed) was sent to obtain an air sample from the auxiliary building roof (NF) as a followup measure to the CREFAS alarm. Air sample results indicated no detectable activity.

A review of alarm typer (PRNT) printouts showed that significant electrical disturbances occurred on the "A" train busses (BU) on July 28, 1987, at approximately 0014 MST, coincident with a fault and trip of Circulating Water Pump Motor "A" (KG)(P) during a severe electrical storm. This incident was followed at 0018 MST by a similar fault and trip of Circulating Water Pump Motor "B" (KG)(P).



## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

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

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

TEXT (If more space is required, use additional NRC Form 368A's) (17)

Based on this information the reset to the default value of the alarm/trip setpoints for the affected monitors has been attributed to a momentary loss of power to the Remote Indicating Controllers (RIC) cabinet, due to the electrical disturbances noted above. Upon restoration of power, the RIC microprocessors download the default alarm/trip setpoint values to the radiation monitor microprocessor.

This was substantiated when, following the restoration of the actuated equipment, a RP technician (contractor non-licensed) found the alarm/trip setpoint for the Fuel Pool Area Monitor (RU-31)(IL)(RI) to be set at the default value and subsequent investigation identified RU-33, Refueling Machine Area Monitor (IL)(RI), and RU-37, "A" Containment Power Access Purge Area Monitor (IL)(RI), to also be set at the default value. The RICs for RU-29, 31, 33 and 37 are located in the same RIC cabinet and share a common power supply.

The root cause of the actuation was determined to be a voltage spike, compounded by the monitor having been reset to the default alarm/trip setpoint as a result of a temporary loss of power. The voltage spiking is believed to have been caused by electronic circuit noise. As corrective action, the monitors were reset, returning the setpoints to the specified values.

Other events involving CREFAS actuations have been reported including LER 1-87-001, which also resulted from a monitor set at the default value. However, these events did not involve the root cause as noted above. Corrective action to prevent recurrence for previous events included the installation of an isolated grounding system (FC) to reduce electronic circuit noise. Ongoing corrective action consists of a design change, currently in progress, to revise radiation monitoring system default alarm/trip setpoints to be consistent with the specified values. These changes should also prevent recurrence of this type of event, hence, no additional corrective action is deemed necessary.

No personnel or procedural errors were identified which contributed to the event. There were no unusual characteristics of the work location, with the exception of the electrical storm, which contributed to the event. No structures, systems or components inoperable prior to the event were identified as contributing factors. Based on the results of the analysis described above which verified no abnormal radiation level existed, there was no effect on the health and safety of the public and no safety impact on the unit. Should other concerns or information pertinent to the event be discovered, a supplement will be issued.







## Arizona Nuclear Power Project

P.O. BOX 52034 • PHOENIX, ARIZONA 85072-2034

192-00257-JGH/TRB/KCP

August 26, 1987

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

Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Unit 1  
Docket No. 50-528  
Licensee Event Report 87-021-00  
File: 87-020-404

Dear Sirs:

Attached please find Licensee Event Report (LER) No. 87-021-00 prepared and submitted pursuant to 10CFR 50.73. In accordance with 10CFR 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 T. R. Bradish, Compliance Supervisor at (602) 393-3531.

Very truly yours,

J. G. Haynes  
Vice President  
Nuclear Production

JGH/KCP/cld

Attachment

cc: O. M. DeMichele (all w/a)  
E. E. Van Brunt, Jr.  
J. B. Martin  
R. C. Sorenson  
E. A. Licitra  
A. C. Gehr  
INPO Records Center

IE22  
1/1

