REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8711300256 DOC. DATE: 87/11/24 NOTARIZED: NO DOCKET #
FACIL: STN-50-530 Palo Verde Nuclear Station, Unit 3, Arizona Publi 05000530
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RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-005-00: on 871030, while unit in mode 3 main steam isolation sys automatically actuated. Caused by faulty logic card MSIV-170. Faulty logic card replaced. W/871124 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 4
TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: Standardized plant. 05000530

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES 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
	ARM/DCTS/DAB	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/DRIS/SIB~~	1	1	NRR/PMAS/ILRB	1	1
	REG FILE 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 47 ENCL 46

NRC Form 366 (9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Palo Verde Unit 3	0 5 0 0 0 5 3 0	1 OF 0 3

TITLE (4)

Main Steam Isolation System Actuation due to Faulty Logic Board

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
1 0	3 0	8 7	8 7	0 0 5	0 0	1 1	2 4	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)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Thomas R. Bradish, Compliance Lead	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 NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
X	J E	E C B D	A 6 4 0	N					

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

At approximately 1618 MST on October 30, 1987, Palo Verde Unit 3 was in Mode 3 (HOT STANDBY) when the Main Steam Isolation System (MSIS) was automatically actuated. The MSIS is part of the Engineered Safety Features Actuation System.

During troubleshooting to locate a ground on a Class 1E 125 VDC distribution cabinet, a Main Steam and Feedwater Isolation Valve (MSFIV) logic cabinet was deenergized at 1617 MST and reenergized at 1618 MST. When reenergized, Main Steam Isolation Valve (MSIV) SGE-UV-170 opened and a steam generator 1 MSIS automatic actuation occurred due to high level in the steam generator.

The root cause of the event was a faulty logic card for MSIV-170. A second logic card was tested and also found to be faulty. A third logic card tested satisfactorily and was installed in the logic cabinet as corrective action. The first and second cards will be sent to the vendor for analysis and rework.

There have been no previous similar events reported.

IE22
1/1

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

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

At approximately 1618 MST on October 30, 1987, Palo Verde Unit 3 was in Mode 3 (HOT STANDBY) when the Main Steam Isolation System (MSIS) was automatically actuated. The MSIS is part of the Engineered Safety Features Actuation System (ESFAS)(JE) and is actuated by a receipt of a 2-out-of-4 high containment pressure, low steam generator pressure, or high steam generator water level signal.

At the time of the event the Reactor Coolant System (RCS)(AB) was at normal operating temperature and pressure. The Secondary Plant was at ambient temperature and depressurized with all Main Steam Isolation Valves (MSIV)(ISV) and MSIV bypass valves (V) closed. Instrument and Control (I&C) Technicians were troubleshooting, in accordance with an approved work control document, a ground which was on Class 1E 125 VDC (EJ) distribution cabinet (CAB) PKA-M41. Each module in the Main Steam and Feedwater Isolation Valves (MSFIV) logic cabinet, which receives power from PKA-M41, was deenergized and reenergized individually in an attempt to locate the ground. At 1617 MST the entire MSFIV logic cabinet was deenergized in an attempt to locate the ground and was reenergized at 1618 MST. Steam Generator (SG) 1 MSIV SGE-UV-170 opened and a Steam Generator 1 high level MSIS automatic actuation occurred. The high level was caused by steam generator swell caused by the increased steam flow when MSIV-170 opened. The MSIS then terminated the steam blowdown by isolating steam generator 1.

The control room operators (utility licensed) identified the event by Main Control Board (MCBD) Annunciators (ANN). The control room operators then verified the MSIS actuation per appendix M of 43EP-3ZZ01 (Emergency Operations). This verifies that all the valves were in their actuated positions. After verification of the MSIS, the MSIS was reset in accordance with appendix R of 43EP-3ZZ01 at 1644 MST and the plant was stabilized. The event duration was 26 minutes.

The root cause of the event was an internal fault in the logic card for MSIV-170. A second card was installed to replace the original card. The second card was tested and produced the same results as the first card. The first and second cards were both tested in the logic cabinet and on a test bench where the initial event symptoms were duplicated. A third card was installed in the MSFIV logic cabinet and tested approximately 50 times without duplicating the event symptoms. The first and second faulty logic cards will be sent to the vendor for analysis and rework. The manufacturer of the cards is Automation Industry Vitro Laboratories and the model number is 3205-1021.

Corrective action to prevent recurrence was to replace the faulty logic card with a new functional logic card. A root cause analysis will be completed upon receipt of the vendors findings.

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

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

Subsequent troubleshooting identified the ground in solenoid operated hot leg sample containment isolation valve (3JSSAUV0203). The ground was in the electrical connector (CON) on the solenoid valve. The connector was replaced and the ground cleared.

There were no structures, systems, or components inoperable prior to the event which contributed to the event. All valves actuated as per the approved system design. Therefore there was no threat to the health and safety of the public.

Should other information pertinent to this event be discovered, a supplement to this report will be issued. There have been no previous similar events reported.

Arizona Nuclear Power Project
P.O. BOX 52034 • PHOENIX, ARIZONA 85072-2034

192-00317-JGH/TRB/JEM
November 24, 1987

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

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 3
Docket No. STN 50-530
Licensee Event Report 87-005-00
File: 87-020-404

Attached please find Licensee Event Report (LER) No. 87-005-00 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 Lead at (602) 393-3531.

Very truly yours,

J. G. Haynes

J. G. Haynes
Vice President
Nuclear Production

JGH/TRB/JEM/kj

Attachment

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

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