

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Palo Verde Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 5 1 2 8					PAGE (3) 1 OF 2	
TITLE (4) Inadvertent RPS Actuation																
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)			
07	17	85	85	04	9	00	08	16					0 5 0 0 0			
OPERATING MODE (9) 1			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)													
POWER LEVEL (10) 0 5 0			20.402(b)				20.405(c)				<input checked="" type="checkbox"/> 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)(vi)				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)(vii)(A)					
			20.405(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(vii)(B)					
			20.405(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(ix)					
LICENSEE CONTACT FOR THIS LER (12)																
NAME William F. Quinn, Manager - Nuclear Licensing (extension 4087)										TELEPHONE NUMBER 610 12 914 131-1712 1010						
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)												NO		11	0	15

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

An unplanned, automatic Reactor trip occurred on July 17, 1985 due to a malfunction of a "memory" card in a Control Element Assembly Calculator (CEAC)(AA). The operator attempted to reset the failed CEAC prior to the trip but was unsuccessful. Following the trip, a slight overcooling of the RCS occurred due to the combined effects of: steam generator blowdown initially at the "abnormal" rate, main steam line drain valves automatically opening, Boric Acid Concentrator (CA) in service, main feed pump turbine operation, and low level of core decay heat generation at this point in the fuel cycle. Appropriate operator action limited the overcooling to within 5-10°F below the normally expected post trip temperature of 565°F. CEAC hardware and software are being reviewed to determine the root cause of the malfunction and prevent its reoccurrence.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

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 5	- 0 4 9	- 0 0	0 2	OF 0 2

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

On 07-17-85 at 1540, during shift turnover, Palo Verde Unit 1 was at 50% reactor power with the generator on line at ≈ 560 MWe. Reactor engineering was in the process of testing/calibrating the PPS Channel (JC) "B" parameters with LO DNBR, HI LPD, VOPT, and HI LOG PWR in bypass and tripped. Additionally, both steam generators were in an abnormal blowdown rate.

A failure of Control Element Assembly Calculator (CEAC 2)(AA) (indicated by a CEAC/Core Protection Calculator Trouble Annunciation and illumination of the CEAC 2 failure light) initiated the trip event. One minute after unsuccessful attempts to reset the CEAC, CHANNEL "A" LO DNBR and HI LPD (JC) pre trips were received. Approximately one minute later the reactor tripped.

Post trip plant response was normal and per design except for a slight RCS overcooling of 5-10°F. The operator implemented the following actions to stabilize the cooldown at approximately 560°F:

- (1) Tripped Main Feed Pump "B".
- (2) Started the Non-Essential Auxiliary Feed Pump and fed the steam generators with the downcomers in manual to maintain a minimum level of 55% of wide-range indication.
- (3) Closed the Main Steam line Upstream and the Turbine Stop Drain Valves.
- (4) Isolated the Steam Generator Blowdown.
- (5) Closed Feed Pump Turbine "A" and "B" High Pressure Lead Drain Valves.
- (6) Instructed the Radwaste operator to terminate steam flow to the Boric Acid Concentrator (CA).

Emergency procedure 41EP-1ZZ01 and Reactor Trip Recovery Procedure 41RO-1ZZ01 were used to stabilize the plant and confirm that all systems and equipment performed as designed.

It was determined that a Memory Circuit Board failure in CEAC 2 caused faulty output signals to be sent to the CPCs (Core Protection Calculators) causing the trip. By design the CPCs should not have accepted the faulty signals. The Computer and Reactor Engineering Groups have initiated a study to determine why the CPCs responded to the faulty CEAC 2 output and how to correct the problem.

No radioactivity was released to the environment as a result of this event. There were no equipment or systems out of service when this event occurred which resulted in the consequences of the trip being more severe.



Arizona Nuclear Power Project

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ANPP-33231-EEVB/GEC

August 16, 1985

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

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 1
Docket No. STN 50-528, License No. NPF-41
Licensee Event Report - Inadvertent RPS Actuation
File: 85-056-026; G.1.01.10

Dear Sirs:

Attached please find Licensee Event Report (LER) No. 85-049-00 prepared and submitted pursuant to 10 CFR 50.73. This LER addresses an inadvertent actuation of the Reactor Protection System. 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 or concerns, please contact me.

Very truly yours,

E E Van Brunt Jr. /VH

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

EEVB/GEC/slh
Attachments

cc: J. B. Martin (all w/a)
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