

REGULATOR INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8705180211 DOC. DATE: 87/05/08 NOTARIZED: NO DOCKET #
 FACIL: STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Publi 05000529
 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 87-003-00: on 870412, control element assembly calculator
 trouble alarm received in control room & declared inoperable
 & Tech Spec 3.3.1 Action 6a entered. Caused by Procedural
 inadequacy. Procedural enhancements for units. W/870508 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. M. Davis, NRR: 1Cy.

05000529

	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/ROAB	2 2
	AEOD/DSP/TPAB	1 1		DEDRO	1 1
	NRR/DEST/ADE	1 0		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/GAB	1 1
	NRR/DOEA/EAB	1 1		NRR/DREP/EPB	1 1
	NRR/DREP/RAB	1 1		NRR/DREP/RPB	2 2
	NRR/PMAS/ILRB	1 1		NRR/PMAS/PTSB	1 1
	REG FILE 02	1 1		RES SPEIS, T	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

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Palo Verde Unit 2										DOCKET NUMBER (2) 0 5 0 0 0 5 2 19					PAGE (3) 1 OF 0 3				
TITLE (4) CEA Position Not Verified Due To Procedural Inadequacy																			
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	4	1	2	8	7	8	7	0	0	3	0	0	0	5	0	8	7	N/A	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) 1 0 0			20.402(b)				20.406(c)				50.73(a)(2)(iv)				73.71(b)				
			20.406(a)(1)(i)				50.36(c)(1)				50.73(a)(2)(v)				73.71(c)				
			20.406(a)(1)(ii)				50.36(c)(2)				50.73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)				
			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)(vii)(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 (Ext. 6936)										TELEPHONE NUMBER AREA CODE 6 0 2 9 3 2 1 5 3 0 0									
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									
X	JIC	ICIPU	X 9 9 9	Y															
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 0012 on April 12, 1987, Palo Verde Unit 2 was in Mode 1 (POWER OPERATION) operating at 100 percent power when a Control Element Assembly Calculator (CEAC) trouble alarm was received in the control room. At 0020 the CEAC was declared inoperable and Technical Specification 3.3.1 ACTION 6a was entered. ACTION 6a requires each Control Element Assembly (CEA) to be verified within 6.6 inches of all other CEAs in its group at least once per 4 hours. Control room operators (utility-licensed) performed the verification in accordance with plant procedures. During one performance of the CEA verification checks it was discovered by the operators that the procedure did not list all of the CEA groups. This caused two CEA groups to not be checked every 4 hours as required by the ACTION statement.

The root cause of the event was a procedural inadequacy. To prevent recurrence procedural enhancements have been made for Units 1 and 2 and will be done for Unit 3.

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PDR ADOCK 05000529
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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 2	0 5 0 0 0 5 2 9	8 7	— 0 0 3	— 0 0	0 2	OF	0 3

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

At approximately 0012 on April 12, 1987, Palo Verde Unit 2 was in Mode 1 (POWER OPERATION) operating at 100 percent power when a Control Element Assembly Calculator (CEAC) (JC)(CPU) trouble alarm was received in the control room. The CEAC was declared inoperable and Technical Specification 3.3.1 ACTION 6a was entered.

The control room operators (utility-licensed) responded to the alarm in accordance with approved plant procedures and discovered that the CEAC was indicating 36 incorrect Control Element Assembly (CEA)(AA)(ROD) positions. This determination was made by comparing the Reed Switch Position Transmitter indications with the CEAC CEA positions.

The CEACs calculate penalty factors to ensure that the Core Protector Calculators (CPCs)(JC)(CPU) calculate conservative approximations of the actual Reactor Core (AC) Peak Linear Heat Rate and Departure from Nucleate Boiling Ratio (DNBR) during single CEA position deviations from normal operation. The CEAC Penalty Factors are multiplicative factors applied in the CPC DNBR and Local Power Density calculation to compensate for any inaccuracies in the CPC power distribution calculation caused by single CEA position deviations. The penalty factors are transmitted to the Core Protection Calculators which, along with other plant data, initiate a reactor trip if Plant parameters are appropriate.

ACTION 6a requires each CEA to be verified within 6.6 inches of all other CEAs in its group at least once per 4 hours. Control room operators (utility-licensed) performed the verification in accordance with approved plant procedures.

At approximately 0255, a plant management decision was made to remove the other CEAC from service. This decision was based on the fact that the CEACs occasionally automatically restart. If a restart occurs while the other CEAC is out of service a reactor trip will occur. Resolution of the root cause of the auto restarts is an on-going effort. Automatic restarts are not expected to be eliminated entirely at Palo Verde or other plants with CPCs. This is accounted for in the associated surveillance requirements which allow 3 auto restarts per 12 hours. The ACTION statement requirements for 2 inoperable CEACs were implemented by the control room operators. As part of the ACTION requirements reactor power was reduced to 90 percent.

During one performance of the CEA verification checks required to fulfill the ACTION requirements, it was discovered that the procedure did not list the two shutdown CEA groups. This caused the two CEA groups to not be checked every 4 hours as required by the ACTION statement.

As an immediate corrective action the two CEA groups not listed in the procedure were verified to have their CEAs withdrawn in accordance with the requirements of the Technical Specifications.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

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

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

The root cause of missed CEA verification was determined to be a procedural inadequacy. To prevent recurrence procedural enhancements have been incorporated for Units 1 and 2 to include CEA position verification for all of the CEA groups and will be changed in Unit 3 prior to initial criticality.

Troubleshooting was conducted on the CEAC in accordance with approved plant procedures, however, the incorrect indications could not be duplicated during the troubleshooting. Should these indications recur, additional troubleshooting will be conducted to try and determine a root cause. The CEAC (model #8/16E) is manufactured by Perkin-Elmer.

At 1142 on April 12, 1987, the applicable Surveillance Test was successfully completed on the CEAC and it was returned to service. The other CEAC was also returned to service at that time. One CEAC was inoperable for approximately 11 hours and 30 minutes and the other for 8 hours and 47 minutes.

The incore detectors would have detected a change in the Axial Shape Index (ASI) and generated an alarm if a shutdown or other CEA had deviated significantly from its full out position. If ASI reached its trip setpoint the CPC would have generated a reactor trip. Therefore, this event had no impact on the safe operation of the plant.

Should other concerns or information pertinent to this event be discovered, a supplement to this report will be issued.

There were no structures, components, or systems inoperable at the start of the event that contributed to the event. No failed components other than those described above affected the event. Also there were no automatically or manually initiated safety system responses.

No previous similar events have been reported.



Arizona Nuclear Power Project

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

192-00196-JGH/TRB/JHT

May 8, 1987

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

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 2
Docket No. STN 50-529
Licensee Event Report 87-003-00
File: 87-020-404

Dear Sirs:

Attached please find Licensee Event Report (LER) No. 87-003-00 prepared and submitted pursuant to 10 CFR 50.73. 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, please contact T. R. Bradish, Compliance Supervisor at (602) 932-5300 Ext. 6936.

Very truly yours,

J. G. Haynes
Vice President
Nuclear Production

JGH/JHT/cld

Attachment

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

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