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REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8905170105 DOC.DATE: 89/05/05 NOTARIZED: NO DOCKET #
 FACIL:STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528
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SUBJECT: LER 89-010-00:on 890409,main steam safety valve setpoints
 discovered out of tolerance.

DISTRIBUTION CODE: IE22D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 6
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:Standardized plant.

05000528/

RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
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CHAN,T	1 1	DAVIS,M	1 1
INTERNAL: ACRS MICHELSON	1 1	ACRS MOELLER	2 2
ACRS WYLIE	1 1	AEOD/DOA	1 1
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DEDRO	1 1	IRM/DCTS/DAB	1 1
NRR/DEST/ADE 8H	1 1	NRR/DEST/ADS 7E	1 0
NRR/DEST/CEB 8H	1 1	NRR/DEST/ESB 8D	1 1
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NRR/DOEA/EAB 11	1 1	NRR/DREP/RPB 10	2 2
NRR/DRIS/SIB 9A	1 1	NUDOCS-ABSTRACT	1 1
REG FILE 02	1 1	RES/DSIR/EIB	1 1
RES/DSR/PRAB	1 1	RGN5 FILE 01	1 1
EXTERNAL: EG&G WILLIAMS,S	4 4	FORD BLDG HOY,A	1 1
L ST LOBBY WARD	1 1	LPDR	1 1
NRC PDR	1 1	NSIC MAYS,G	1 1
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NOTES: 1 1

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Palo Verde Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 5 2 8 1										PAGE (3) 1 OF 0 5	
TITLE (4) Main Steam Safety Valve Setpoints Discovered Out Of Tolerance																					
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	0 9	8 9	8 9	0 1 0	0 0	0 5	0 5	8 9	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)									73.71(b)									
POWER LEVEL (10) 0 0 0			20.402(b)			20.406(c)			60.73(a)(2)(iv)			73.71(c)									
			20.406(a)(1)(i)			60.38(c)(1)			60.73(a)(2)(v)			OTHER (Specify in Abstract below and in Text, NRC Form 366A)									
			20.406(a)(1)(ii)			60.38(c)(2)			X 60.73(a)(2)(vi)												
			20.406(a)(1)(iii)			60.73(a)(2)(i)			60.73(a)(2)(viii)(A)												
			20.406(a)(1)(iv)			60.73(a)(2)(ii)			60.73(a)(2)(viii)(B)												
			20.406(a)(1)(v)			60.73(a)(2)(iii)			60.73(a)(2)(x)												
LICENSEE CONTACT FOR THIS LER (12)																					
NAME Timothy D. Shriver, Compliance Manager										TELEPHONE NUMBER 6 0 2 3 9 3 - 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)										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)

During the period of April 8 and 9, 1989 while Unit 1 was in Mode 3 (HOT STANDBY), augmented ASME surveillance testing was conducted to verify the relief settings of the Main Steam Safety Valves (MSSV)(SB)(RV). This testing was being conducted as a result of the Unit 2 testing described in LER 528/88-14-00. The results indicated that eleven (11) of the twenty (20) valve relief settings were out of the tolerance limits specified in Technical Specification (TS) 3.7.1.1 and the testing requirements established by APS.

Because of the variances identified in the as found data of the setpoints, a definitive root cause can not be identified.

As corrective action the valves have been reset and appropriate testing conducted. As corrective action to prevent recurrence, APS will pursue an amendment to the TS to increase the tolerance on the MSSV setpoint.

A previous similar event was reported on LER 528/88-14-00.

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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) Palo Verde Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 5 2 8	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 9	— 0 1 0	— 0 0	0 2	OF	0 5

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

I. DESCRIPTION OF WHAT OCCURRED:

A. Initial Conditions:

On April 8 and 9, 1989 Palo Verde Unit 1 was in Mode 3 (HOT STANDBY) with reactor plant temperature at approximately 565 degrees Fahrenheit and pressure at approximately 2250 psia.

B. Event description (Including dates and approximate times of major occurrences and initial plant conditions)

Event Classification: Condition Prohibited by the Plant's Technical Specifications. Condition Which Caused Two Independent Trains to Become Inoperable In a Single System.

Palo Verde Unit 1 is a two-loop pressurized water reactor (PWR). Each loop has a vertical U-tube steam generator (SG) with two outlet main steam lines (SB). Overpressure protection for the shell side of the steam generators and the main steam line up to the inlet of the turbine (TG) stop valve (SHV) is provided by twenty flanged, spring-loaded, direct acting, ASME Code safety valves (RV) which have open bonnets and discharge to the atmosphere. These safety valves are mounted on each of the main steam lines (SB) upstream of the steam line isolation valves (ISV) but outside the Containment (CTMT). The opening pressure of the valves is set in accordance with ASME Code and Technical Specification requirements. The valves are set to lift sequentially at 1250, 1290, and 1315 pounds per square inch-gauge.

The main steam safety valves are required to be tested once per five (5) years. The testing is conducted utilizing an approved surveillance test procedure. The surveillance test procedure verifies by on-line testing that the set pressure and operation of the main steam safety valves are acceptable for continued service. The testing described herein was conducted utilizing the Furmanite Trevitest Method. The general principal involves utilizing hydraulic force to assist in overcoming the closing force of the valve spring. The applied force is measured, recorded, and analyzed to determine lift point settings. In order to have an acceptable test by current procedural requirements, it is necessary to have three (3) consecutive lifts within plus or minus one (1) percent of the given set pressure of the valve. The testing sequence involves declaring a safety valve inoperable, installing the testing device, and then testing until three consecutive, acceptable lifts are performed. If three consecutive, acceptable lifts cannot be made, the appropriate adjustments are made until the acceptance criteria can be satisfied. After three successful lifts are performed, the valve is returned to service. The process

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES: 8/31/88

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
					0 3	OF	0 5

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

of testing, adjusting (where necessary) and testing until satisfactory results are achieved normally encompasses less than four (4) hours per valve.

On April 10, 1989, engineering personnel (utility, licensed and non-licensed) were reviewing data obtained from main steam safety valve testing conducted in Unit 1 on April 8 and 9, 1989. This testing was being conducted as a result of the Unit 2 testing described in LER 528/88-14-00. During this summary review, it was noted that the "as-found" relief setpoint for eleven (11) of the twenty (20) safety valves did not meet Technical Specification acceptance criteria limits.

Based upon a review of the actual test results, eleven (11) of twenty (20) safety valves' setpoints were out of tolerance; all were discovered with setpoints above specifications. The following information is provided concerning the Unit 1 safety valves:

- ° Nine (9) safety valves' relief setpoints were acceptable with no problems noted.
- ° Seven (7) safety valves' relief setpoints were discovered out of tolerance upon initial testing and required adjustment.
- ° Four (4) safety valves' relief setpoints were discovered out of tolerance on the initial lift; however, no adjustments were necessary since subsequent lifts were within limits.

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

Other than the main steam safety valves, no structures, systems, or components were inoperable which contributed to the event.

D. Cause of each component or system failure, if known:

Not applicable - no failures were involved.

E. Failure mode, mechanism, and effect of each failed component, if known:

Not applicable - no failures were involved.

F. For failures of components with multiple functions, list of systems or secondary functions that were also involved:

Not applicable - no failures were involved.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES: 8/31/88

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

- G. For failures that rendered a train of a safety system inoperable, estimated elapsed time 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:

Not applicable - no failures were involved.

- I. Cause of Event:

The cause of the event is setpoint drift. This is a repetitive event as reported in LER 528/88-014. A generic review revealed that this type of valve is subject to drift. An Engineering Evaluation has been initiated to determine the cause of the MSSV's drifting.

- J. Safety System Responses:

No safety system responses occurred and none were necessary.

- K. Failed Component Information:

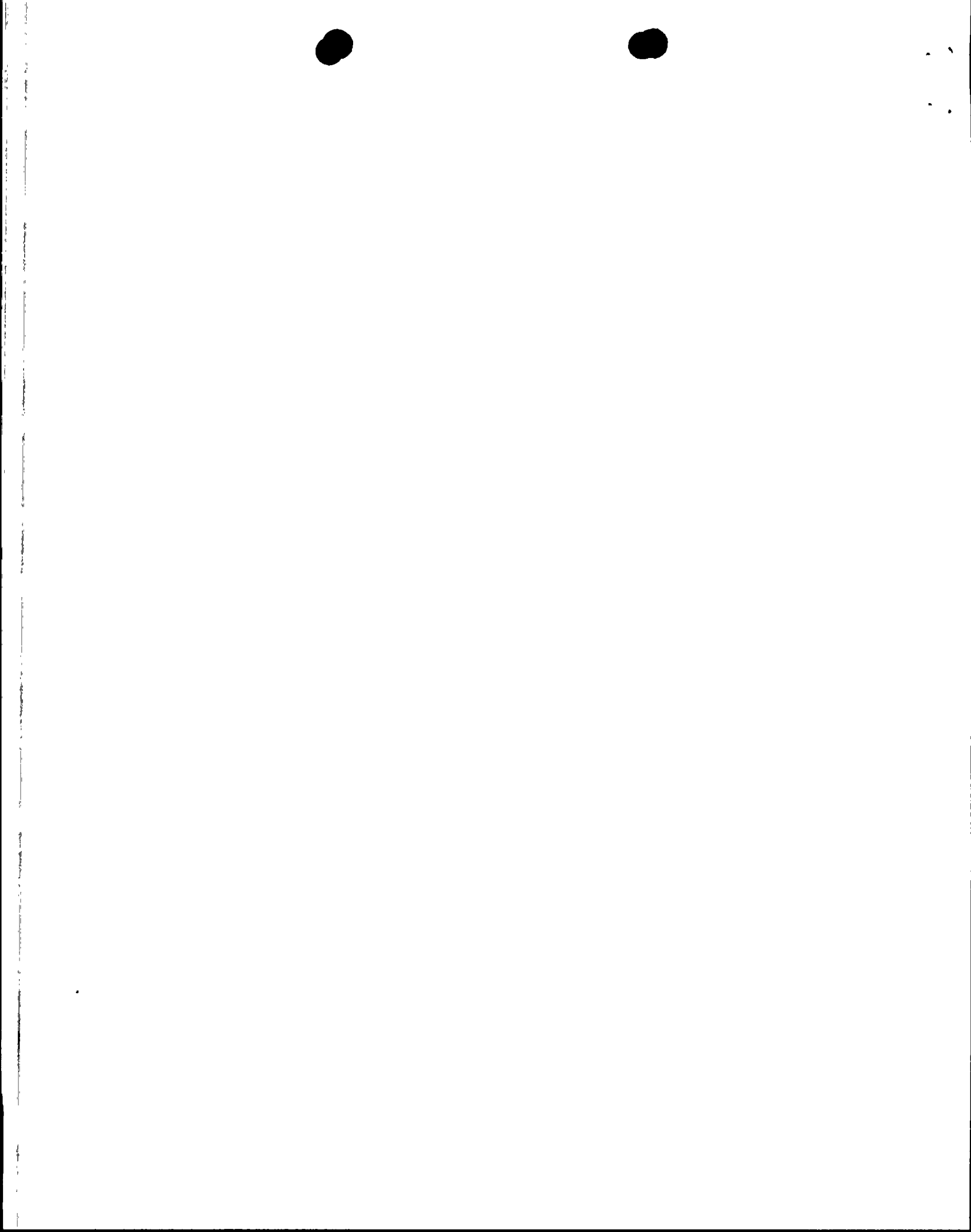
Although there were no failed components associated with this event the following data is provided for information:

Manufacturer: Dresser Valve and Controls Division
Dresser Industries, Inc.

Model No: 6" 3707R Consolidated Main Steam Safety Valves

II. ASSESSMENT OF THE SAFETY CONSEQUENCES AND IMPLICATIONS OF THIS EVENT:

There were no safety consequences or implications resulting from this event. As described above, the safety valves are intended to provide overpressure protection for the secondary side of the steam generators and main steam lines up to the main steam isolation valves (MSIV). The safety valves' protective function is to ensure that steam generator pressure remains below 110 percent of design pressure. None of the safety valves' setpoints were discovered to be above 110 percent of steam generator design pressure and the sequential lifting scheme will ensure that steam generator integrity is not compromised. Additionally, if an event occurred which did not require closure of the MSIV's, overpressure protection could have been provided by the Steam Bypass Control System (SB). For the events which would have required operation of the main steam safety valves, there are no other components or systems which could have performed the same function as the main steam safety valves.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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APPROVED OMB NO 3150-0104

EXPIRES: 8/31/88

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		8 9	0 1 0	0 0	0 5	OF	0 5

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

III. CORRECTIVE ACTIONS:

A. Immediate:

Each valve was tested a minimum of three times. Four of the twenty valves were unsatisfactory on the first attempt (as-found) and subsequently met the acceptance criteria on the next three attempts. Seven of the twenty valves failed the first and second attempts. These valves were successfully adjusted and tested. The remaining nine valves were satisfactory the initial attempts.

B. Action to Prevent Recurrence:

Since field setpoint adjustment was successfully accomplished in accordance with the Technical Manual, no further corrective action is necessary at this time.

Due to the tendency toward setpoint drift exhibited by these valves, testing will continue on a refueling schedule until satisfactory performance is observed.

Further corrective action will be evaluated based on the results of the Engineering Evaluation addressed in Section I.I.

APS will pursue an amendment to the TS to increase the tolerance on the MSSV setpoint.

IV. PREVIOUS SIMILAR EVENTS:

LER 528/88-14-00 described an event wherein seventeen of twenty main steam safety valves in Unit 2 and fourteen of twenty main steam safety valves in Unit 1 were out of the tolerance limits specified in Technical Specification 3.7.1.1. Corrective action included reduction of the performance interval on a one time basis. Since this corrective action did not address the cause of the event, it could not have prevented this event.



Arizona Nuclear Power Project

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

192-00478-JGH/TDS/RJR

May 5, 1989

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

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 1
Docket No. STN 50-528 (License No. NPF-41)
Licensee Event Report 89-010-00
File: 89-020-404

Attached please find Licensee Event Report (LER) No. 89-010-00 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. D. Shriver, Compliance Manager at (602) 393-2521.

Very truly yours,

J. G. Haynes
Vice President
Nuclear Production

JGH/TDS/RJR/kj

Attachment

cc: D. B. Karner (all w/a)
E. E. Van Brunt, Jr.
J. B. Martin
T. J. Polich
M. J. Davis
A. C. Gehr
INPO Records Center

