

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9007240189 DOC.DATE: 90/07/17 NOTARIZED: NO DOCKET #
 FACIL:STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Publi. 05000529
 AUTH.NAME AUTHOR AFFILIATION
 BRADISH,T.R. Arizona Public Service Co. (formerly Arizona Nuclear Power
 LEVINE,J.M. Arizona Public Service Co. (formerly Arizona Nuclear Power
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 90-006-00:on 900618,missed surveillance test for neutron flux alarms.

W/9 ltr;

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 8
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:Standardized plant.

05000529

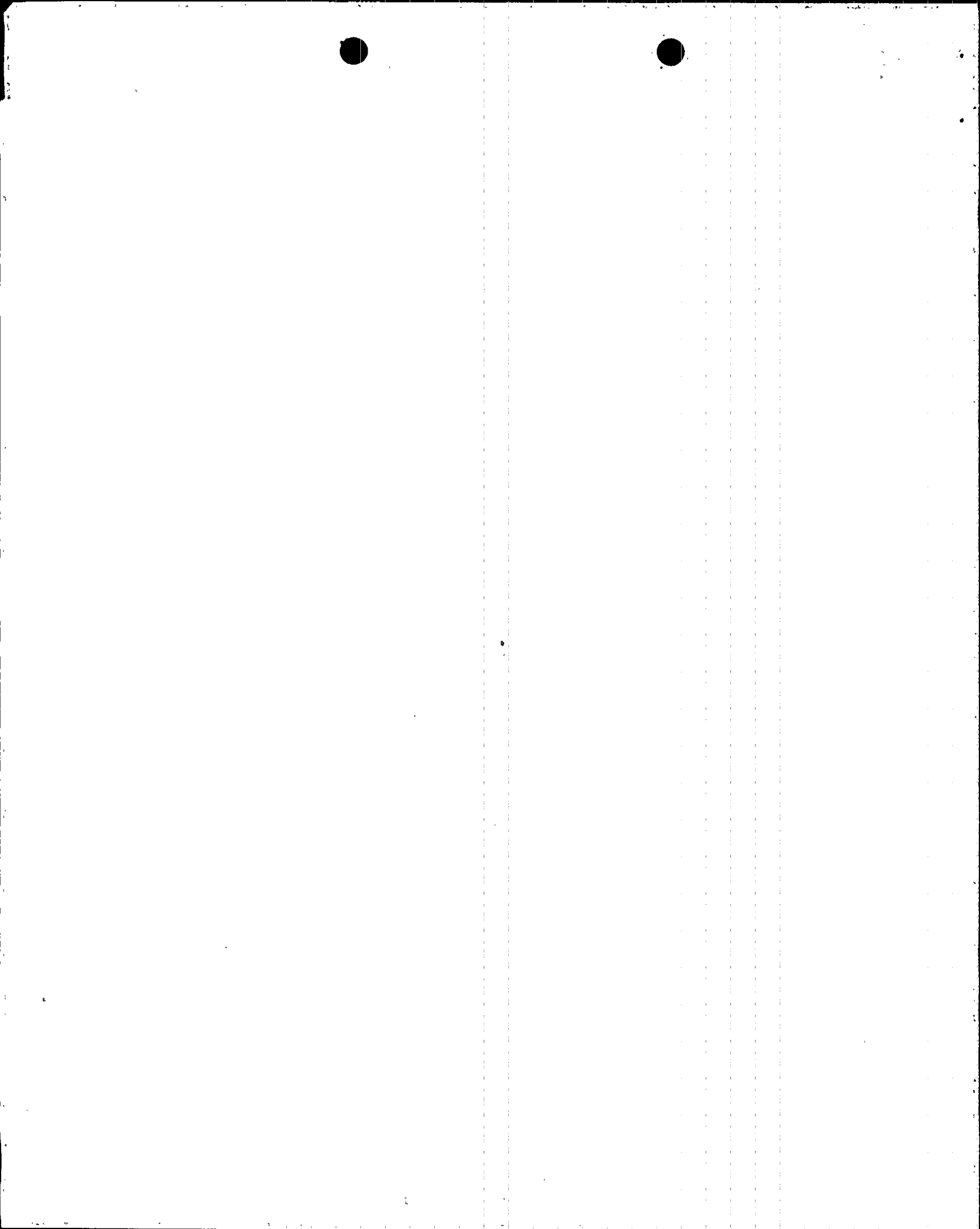
	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD5 LA	1 1	PD5 PD	1 1
	PETERSON,S.	1 1	CHAN,T	1 1
INTERNAL:	ACNW	2 2	ACRS	2 2
	AEOD/DOA	1 1	AEOD/DSP/TPAB	1 1
	AEOD/ROAB/DSP	2 2	NRR/DET/ECMB 9H	1 1
	NRR/DET/EMEB9H3	1 1	NRR/DLPQ/LHFB11	1 1
	NRR/DLPQ/LPEB10	1 1	NRR/DOEA/OEAB11	1 1
	NRR/DREP/PRPB11	2 2	NRR/DST/SELB 8D	1 1
	NRR/DST/SICB 7E	1 1	NRR/DST/SPLB8D1	1 1
	NRR/DST/SRXB 8E	1 1	REG FILE 02	1 1
	RES/DSIR/EIB	1 1	RGN5 FILE 01	1 1
EXTERNAL:	EG&G BRYCE,J.H	3 3	L ST LOBBY WARD	1 1
	LPDR	1 1	NRC PDR	1 1
	NSIC MAYS,G	1 1	NSIC MURPHY,G.A	1 1
	NUDOCS FULL TXT	1 1		
NOTES:		1 1		

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK,
 ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION
 LISTS FOR DOCUMENTS YOU DON'T NEED!

FULL TEXT CONVERSION REQUIRED
 TOTAL NUMBER OF COPIES REQUIRED: LTTR 36 ENCL 36

A04



Arizona Public Service Company
PALO VERDE NUCLEAR GENERATING STATION
P.O. BOX 52034 • PHOENIX, ARIZONA 85072-2034

JAMES M. LEVINE
VICE PRESIDENT
NUCLEAR PRODUCTION

192-00677-JML/TRB/KR
July 17, 1990

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Mail Station P1-37
Washington, DC 20555

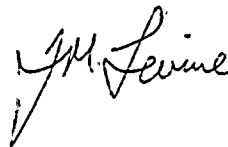
Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 2
Docket No. STN 50-529 (License No. NPF-51)
Licensee Event Report 90-006-00
File: 90-020-404

Attached please find Licensee Event Report (LER) No. 90-006-00 prepared and submitted pursuant to 10CFR50.73. In accordance with 10CFR50.73(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 Manager at (602) 393-2521.

Very truly yours,



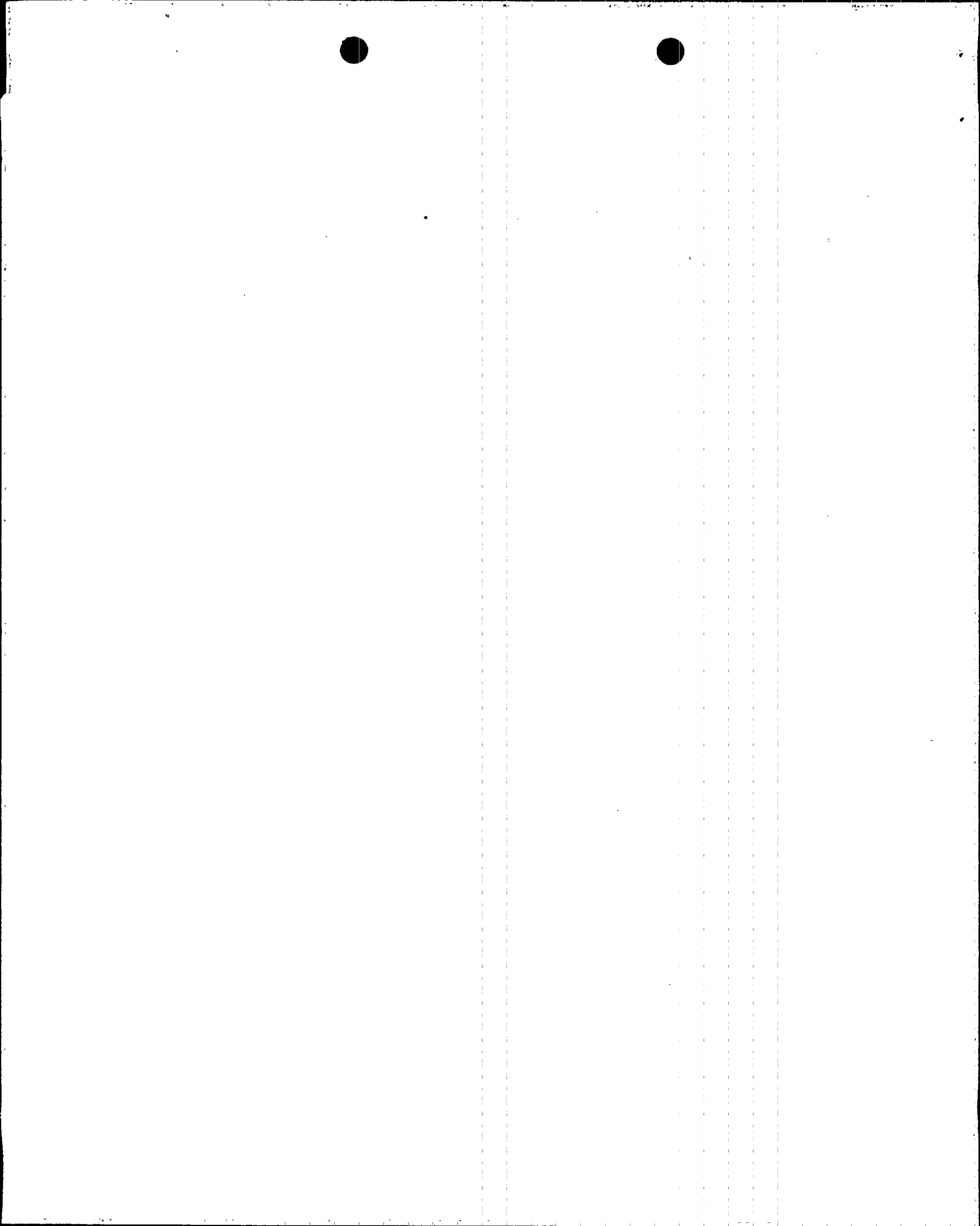
JML/TRB/KR/tlg

Attachment

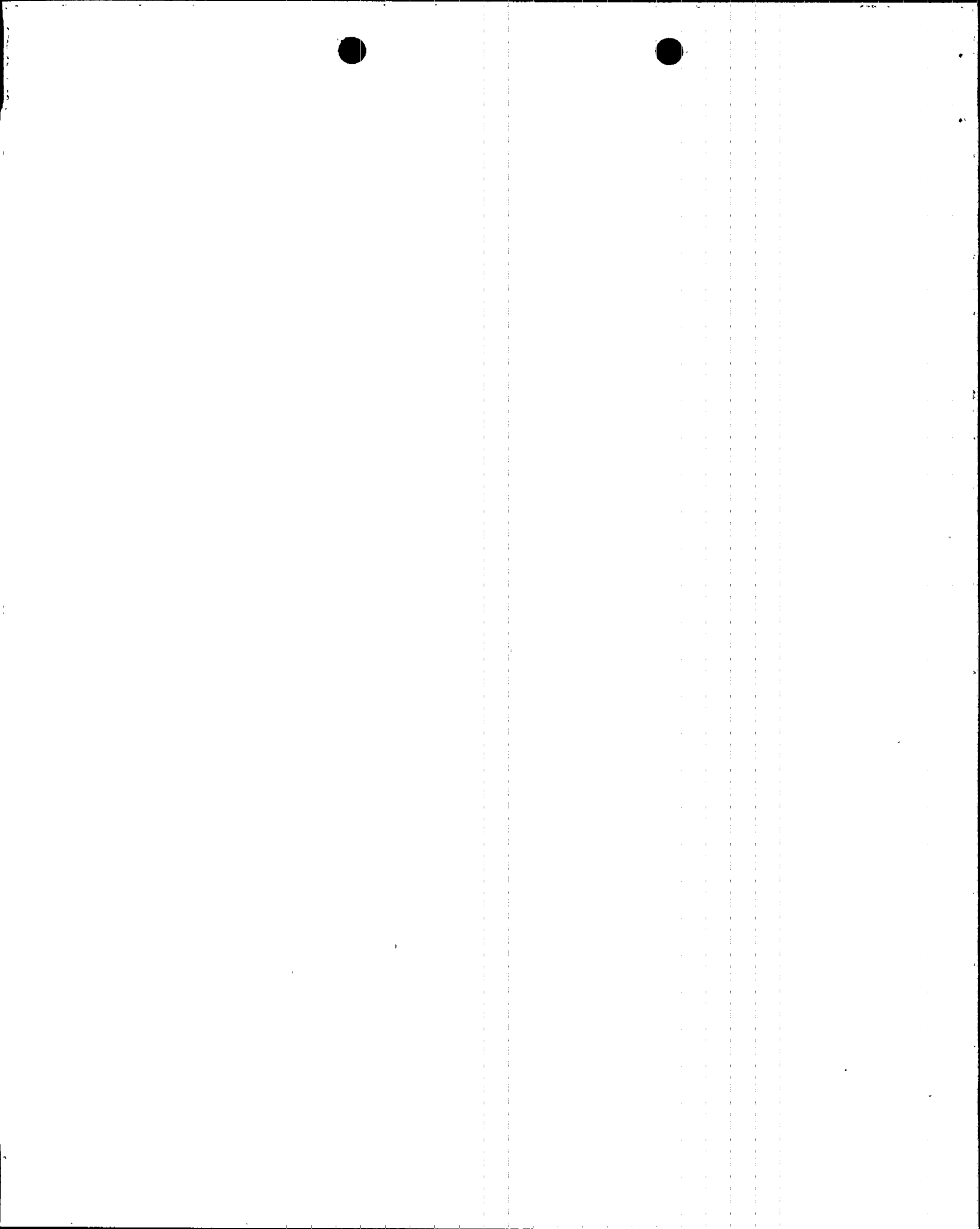
cc: W. F. Conway (all with attachment)
J. B. Martin
D. H. Coe
S. R. Peterson
A. C. Gehr
A. H. Gutterman
INPO Records Center

9007240189 900717
PDR ADOLK 05000529
S FLC

IE22
4/1



bcc:	J. M. Levine	6125
	J. N. Bailey	1966
	W. C. Marsh	6123
	W. E. Ide	6932
	D. R. Heinicke	7294
	R. J. Adney	6915
	R. F. Schaller	6932
	R. K. Flood	7294
	J. A. Bailey	6915
	J. J. Scott	6428
	P. J. Wiley	7298
	R. E. Gouge	6486
	Source Document File	6715
	PRS File:0001124	
	B. E. Ballard	6128
	W. F. Quinn	1502
	E. E. Van Brunt	1922
	E. G. Firth (Training)	6155
	R. C. Fullmer	6795
	G. T. Shell	6794
	M. R. Oren (STA)	6079
	D. N. Stover (NSD)	1536
	J. R. LoCicero (ISEG)	6144
	R. W. Page	1938
	D. B. Andrews	6345
	A. C. Rogers	1515
	S. A. Gallinger	6070
	P. J. Coffin	6148
	B. A. Brown	6148
	Responsible Department (required review):	
	S. M. Grove	7238
	W. M. Simko	7299
	Compliance Supervisor	
	Compliance Manager	



ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) <div style="text-align: center; font-size: 1.2em;">Palo Verde Unit 2</div>										DOCKET NUMBER (2) 0 5 0 0 0 5 2 9 1 OF 0 6										PAGE (3) 1									
TITLE (4) <div style="text-align: center; font-size: 1.2em;">Missed Surveillance Test For Neutron Flux Alarms</div>																													
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	6	1	8	9	0	9	0	0	0	6	0	0	0	7	1	7	9	0	N/A					0 5 0 0 0					
OPERATING MODE (9)		5		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)					20.73(a)(2)(iv)					23.71(b)												
		20.405(a)(1)(i)					20.38(c)(1)					20.73(a)(2)(v)					23.71(c)												
		20.405(a)(1)(ii)					20.38(c)(2)					20.73(a)(2)(vi)					OTHER (Specify in Abstract below and in Text, NRC Form 366A)												
		20.405(a)(1)(iii)					20.73(a)(2)(i)					20.73(a)(2)(viii)(A)																	
		20.405(a)(1)(iv)					20.73(a)(2)(ii)					20.73(a)(2)(viii)(B)																	
		20.405(a)(1)(v)					20.73(a)(2)(iii)					20.73(a)(2)(ix)																	
LICENSEE CONTACT FOR THIS LER (12)																													
NAME T. R. Bradish, 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 NPDs	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs										
X	I	G	B	D	C	4	9	0	N																				
SUPPLEMENTAL REPORT EXPECTED (14)															EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR										
YES (If yes, complete EXPECTED SUBMISSION DATE)																	X	NO											

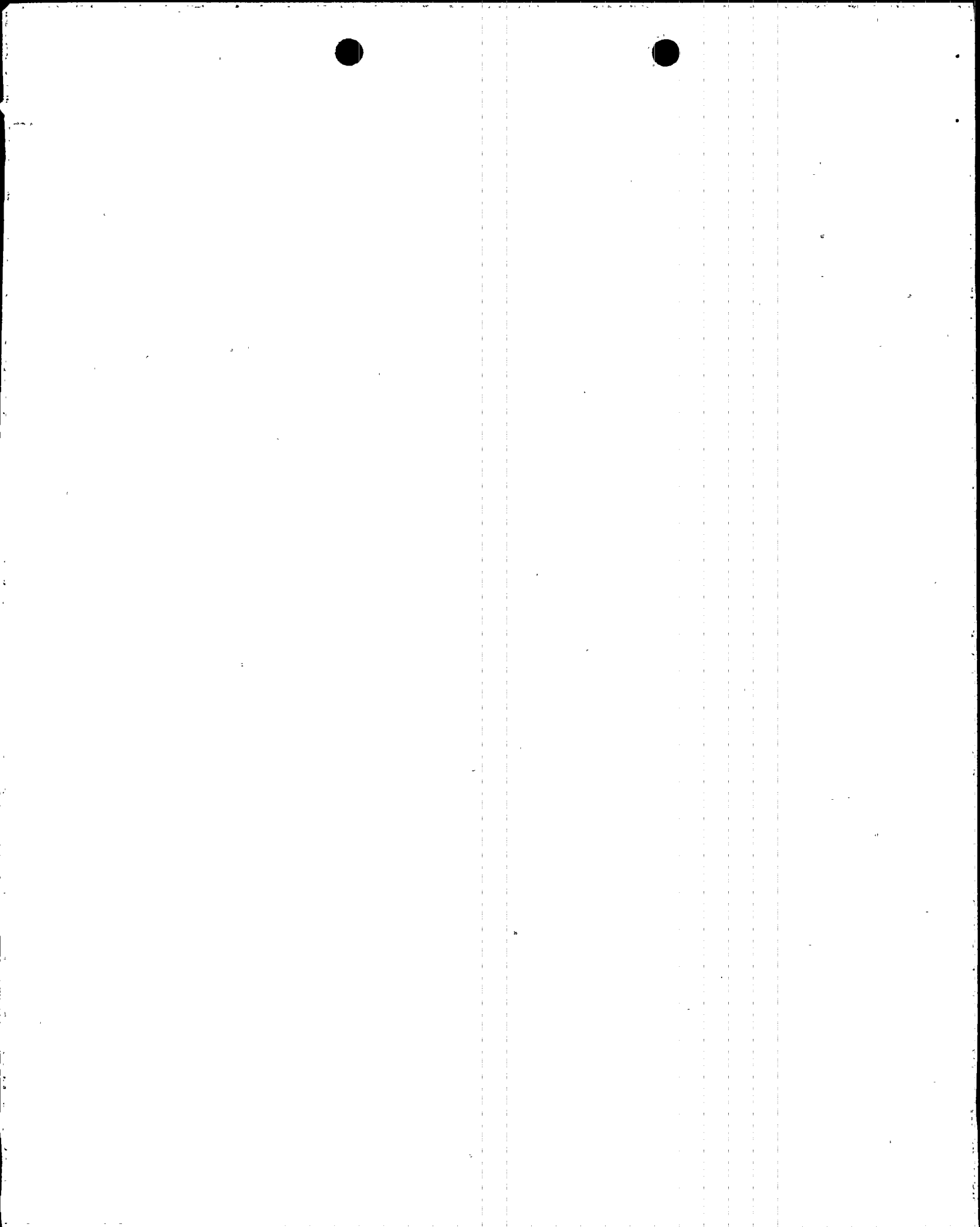
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

At approximately 1550 MST on June 18, 1990, Palo Verde Unit 2 was in MODE 5 (COLD SHUTDOWN), when the Surveillance Program Coordinator discovered that Technical Specification (TS) Surveillance Requirement 4.1.2.7.b for the startup channel high neutron flux alarms [Boron Dilution Alarm System (BDAS)] had not been performed within the required interval including the 25 percent maximum allowable extension allowed by TS 4.0.2. The maximum allowable extension interval was exceeded at approximately 1530 MST on June 17, 1990. Therefore, the operability requirements for TS Limiting Condition for Operation 3.1.2.7 and the associated ACTION were not met.

The cause of the event was cognitive personnel error.

Immediate corrective action was to declare the alarms inoperable and perform the required ACTION. The personnel involved with the event, have been counseled.

There have been no previous similar events reported pursuant to 10CFR50.73.



LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

Palo Verde Unit 2

0 5 0 0 0 5 2 9 9 0 - 0 0 6 - 0 0 0 2 OF 0 6

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

1. DESCRIPTION OF WHAT OCCURRED:

A. Initial Conditions:

At approximately 1550 MST on June 18, 1990, Palo Verde Unit 2 was in MODE 5 (COLD SHUTDOWN) with the Reactor Coolant System (RCS)(AB) at approximately 145 degrees Fahrenheit (F) and approximately 360 pounds per square inch absolute (PSIA) during a refueling outage.

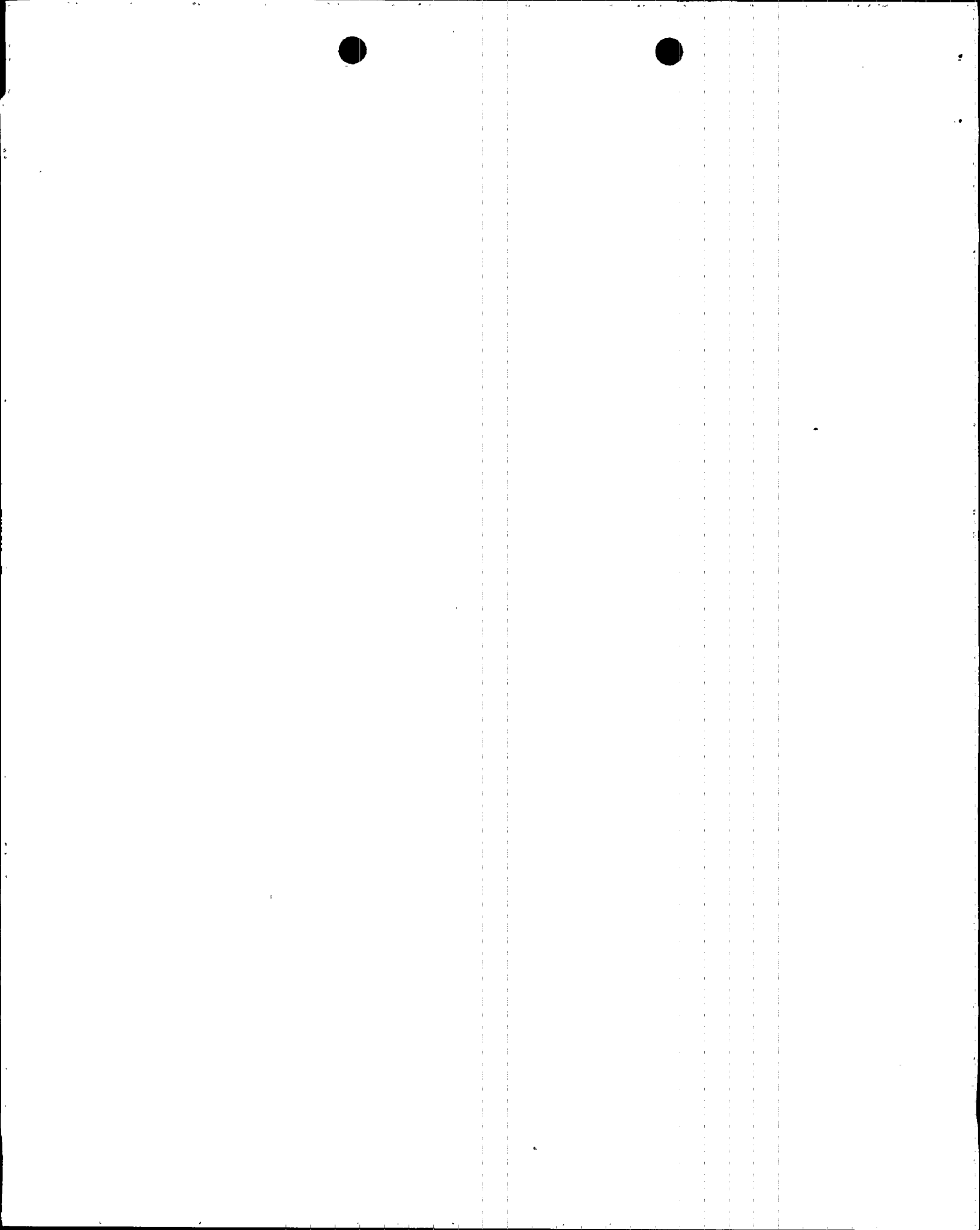
B. Reportable Event Description (Including Dates and Approximate Times of Major Occurrences):

Event Classification: Operation prohibited by the plant's Technical Specification.

At approximately 1550 MST on June 18, 1990, the Surveillance Program Coordinator (utility, non-licensed) discovered that Technical Specification (TS) Surveillance Requirement 4.1.2.7.b for the startup channel high neutron flux alarms [Boron Dilution Alarm System (BDAS)] (ALM)(IG) had not been performed within the required interval including the 25 percent maximum allowable extension allowed by TS 4.0.2. The maximum allowable extension interval was exceeded at approximately 1530 MST on June 17, 1990. Therefore, the operability requirements for TS Limiting Condition for Operation (LCO) 3.1.2.7 and the associated ACTION were not met. The Control Room Shift Supervisor (utility, licensed) was immediately informed and declared both BDAS channels inoperable and entered the ACTION statement. The surveillance had last been performed at approximately 2130 MST on May 9, 1990.

Prior to the event, on May 31, 1990 a surveillance package was issued to perform the next scheduled surveillance which was due June 9, 1990. On June 5, 1990, RCS temperature was increased from approximately 95 degrees F to approximately 140 degrees F. During the heatup, several BDAS annunciators occurred resulting in control room personnel (utility, licensed) declaring BDAS inoperable at approximately 0835 MST on June 5, 1990 and entering the applicable ACTION statement (i.e., RCS boron concentration sampling). At approximately 1600 MST on June 6, 1990, a work request was initiated to troubleshoot the nuisance alarms.

BDAS annunciators are a normal occurrence during post refueling heatup and normally stop when the temperature stabilizes. After the RCS was stabilized at approximately 140 degrees F the alarming



LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

Palo Verde Unit 2

0 5 0 0 0 5 2 9 9 0 0 0 6 0 0 0 3 OF 0 6

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

stopped. At approximately 0930 MST on June 7, 1990, a channel check was completed by control room personnel in accordance with an approved procedure and both BDAS channels were returned to OPERABLE status. However, the troubleshooting work request was not cancelled by control room personnel.

At approximately 2130 MST on June 9, 1990, the surveillance exceeded the 31 day TS interval (not including the 25 percent maximum allowable extension allowed by TS 4.0.2) and was placed on the daily overdue surveillance report. The overdue surveillance report is distributed to the groups responsible for performing the surveillance and Unit management to inform them that a TS required surveillance is past its normal interval and approaching its maximum allowable extension interval.

On June 15, 1990, the Surveillance Program Coordinator contacted the Instrumentation & Control (I & C) maintenance foreman (utility, non-licensed) responsible for performing the surveillance to remind him that the surveillance was approaching its maximum allowable extension interval date of June 17, 1990. The I & C maintenance foreman had not performed the surveillance because he believed that the alarm channels were inoperable since the troubleshooting work request was not cancelled.

At approximately 1550 MST on June 18, 1990, the Surveillance Program Coordinator discovered that the surveillance had not been performed and BDAS was considered OPERABLE. The Control Room Shift Supervisor (utility, licensed) was immediately notified, the BDAS channels were declared inoperable, and the appropriate ACTION statement was entered due to the missed surveillance. At approximately 0012 MST on June 19, 1990, BDAS channel 1 was declared OPERABLE after successful completion of surveillance testing. BDAS channel 2 did not operate properly during performance of the surveillance test and remained inoperable. Troubleshooting and required repairs were completed on BDAS channel 2 and the channel was declared OPERABLE at approximately 0443 MST on June 27, 1990.

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

Other than the BDAS channels discussed in Section I.B, no structures, systems or components were inoperable which contributed to this event.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

Palo Verde Unit 2

0 5 0 0 0 5 2 9 9 0 - 0 0 6 - 0 0 0 4 OF 0 6

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

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

Troubleshooting in accordance with an approved work authorization document determined that channel 2 could not be calibrated during surveillance testing due to a loose resistor on an analog interface board. The analog interface board was replaced and channel 2 operated properly.

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

The loose resistor on the analog interface board described in Section I. D did not affect system performance since there is no dynamic motion associated with the board during system operation.

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

Not applicable - no component failures with multiple functions were involved.

G. For failures that rendered a train of a safety system inoperable, estimated time elapsed from the discovery of the failure until the trains were returned to service:

Not applicable - no failures which rendered a train of a safety system inoperable were involved.

H. Method of discovery of each component or system failure or procedural error:

There were no procedural errors discovered which contributed to this event. The loose resistor on the channel 2 analog interface board was discovered during troubleshooting as described in Sections I. B and I. D.

I. Cause of Event:

The cause of the event was cognitive personnel error (SALP Cause Code A) in that I & C maintenance personnel (utility, non-licensed) did not ensure that the surveillance was performed as required. The APS Surveillance Testing Program assigns responsibility for ensuring that surveillance tests are performed in a timely manner to the work group responsible for performing the surveillance.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Palo Verde Unit 2	05000529	90	006	00	05	OF	06

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

Contributing to this error was the fact that the control room personnel (utility, licensed) returned the BDAS channels to an operable status following a channel check without ensuring that the troubleshooting work request was cancelled.

There were no procedure errors that contributed to this event. There were no unusual characteristics of the work location that contributed to this event.

J. Safety System Response:

Not applicable - there were no safety system responses and none were necessary.

K. Failed Component Information:

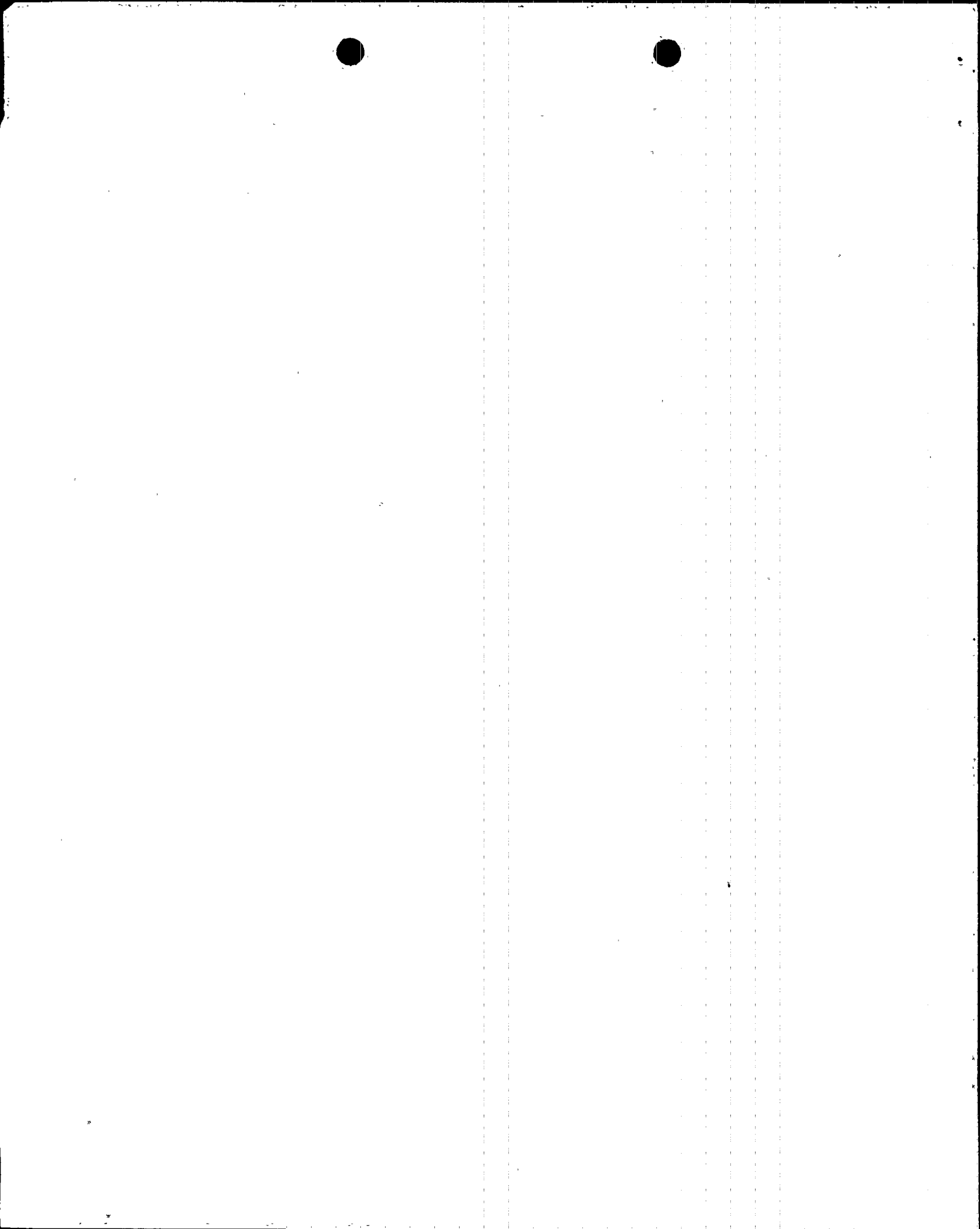
Not applicable - no component failures were involved.

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

There were no safety consequences or implications resulting from this event. The Boron Dilution Alarm System (BDAS) is a microcomputer based instrument designed to provide alarms to alert a reactor operator to a potential boron dilution event while in Modes 3 (HOT STANDBY), 4 (HOT SHUTDOWN), 5 (COLD SHUTDOWN), and 6 (REFUEL). BDAS compares the average neutron flux to an instantaneous reading from the excore detectors. A deviation more than the programmed setpoint (one third of a decade) will initiate an alarm. In the event of an alarm, the operator is procedurally directed to monitor neutron flux to determine if a boron dilution is occurring. If the alarm is determined to be valid, actions are taken to terminate the dilution.

The surveillance exceeded the maximum allowable extension interval at approximately 1530 MST on June 17, 1990 and the alarm was declared inoperable at approximately 1550 MST on June 18, 1990. Therefore, the alarm was administratively inoperable for approximately 24 hours and 20 minutes.

Subsequent surveillance testing showed that at least one alarm channel was OPERABLE during the period of administrative inoperability. Additionally, at least two channels of the excore neutron flux logarithmic power level instrumentation (JI)(JC) were also OPERABLE during this event which would have provided indication of a boron dilution event. In addition, RCS boron concentration samples, taken in



LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

Palo Verde Unit 2

0 5 0 0 0 5 2 9 9 0 - 0 0 6 - 0 0 0 6 OF 0 6

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

accordance with TS ACTIONS when one or both channel(s) were declared inoperable, demonstrated that the RCS boron concentration was within specifications. Therefore, this event had no impact on the safe operation of the plant or the health and safety of the public.

III. CORRECTIVE ACTIONS:

A. Immediate

The BDAS channels were declared inoperable and the required ACTION taken. The surveillance was completed and one of the alarm channels was returned to OPERABLE status. The other alarm channel was repaired and returned to OPERABLE status.

B. Action to Prevent Recurrence:

Unit 2 I & C maintenance personnel have been counseled to ensure that they take the appropriate measures to ensure that surveillance testing is performed as required.

The responsible work group managers have been reminded that a Technical Specification Component Condition Record document shall be written in accordance with an approved procedure prior to exceeding the maximum allowable extension interval if the surveillance requirement cannot be completed within the time prescribed by TS.

IV. PREVIOUS SIMILAR EVENTS:

There have been no previous similar events reported pursuant to 10CFR50.73.

