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ACCESSION NBR: 8901110401 DOC. DATE: 89/01/05 NOTARIZED: NO DOCKET #  
 FACIL: STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Publi 05000529  
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 SHRIVER, T.D. Arizona Nuclear Power Project (formerly Arizona Public Serv  
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 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-015-00: on 881203, new fuel area radiation monitor  
 RU-19 discovered inoperable. W/890105 ltr.

W/8 ltr.

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

NOTES: Standardized plant.

05000529

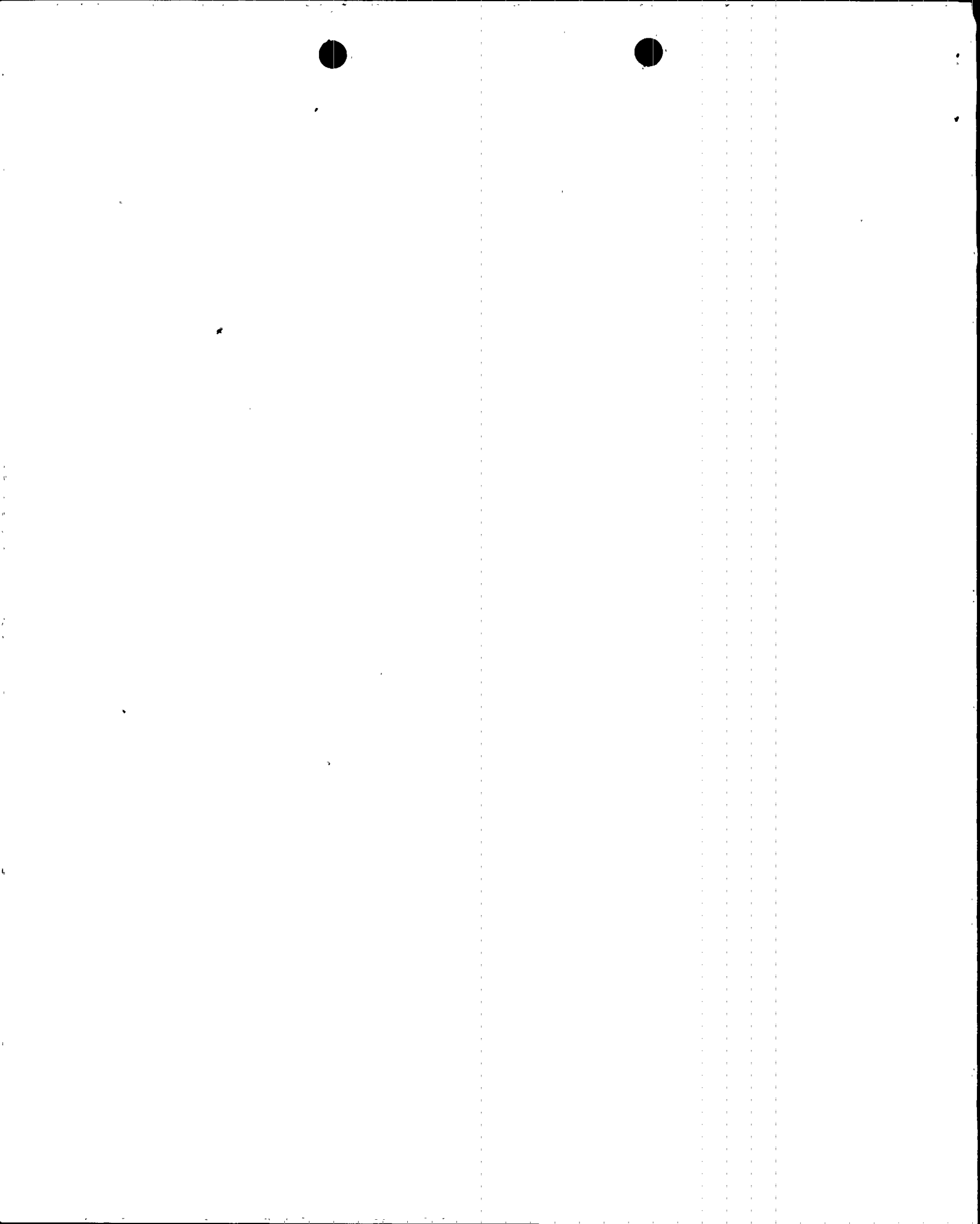
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PD5 LA	1 1	PD5 PD	1 1
CHAN, T	1 1	DAVIS, M	1 1
INTERNAL: ACRS MICHELSON	1 1	ACRS MOELLER	2 2
ACRS WYLIE	1 1	AEOD/DOA	1 1
AEOD/DSP/TPAB	1 1	AEOD/ROAB/DSP	2 2
ARM/DCTS/DAB	1 1	DEDRO	1 1
NRR/DEST/ADE 8H	1 1	NRR/DEST/ADS 7E	1 0
NRR/DEST/CEB 8H	1 1	NRR/DEST/ESB 8D	1 1
NRR/DEST/ICSB 7	1 1	NRR/DEST/MEB 9H	1 1
NRR/DEST/MTB 9H	1 1	NRR/DEST/PSB 8D	1 1
NRR/DEST/RSB 8E	1 1	NRR/DEST/SGB 8D	1 1
NRR/DLPQ/HFB 10	1 1	NRR/DLPQ/QAB 10	1 1
NRR/DOEA/EAB 11	1 1	NRR/DREP/RAB 10	1 1
NRR/DREP/RPB 10	2 2	NRR/DRIS/SIB 9A	1 1
NUDOCS-ABSTRACT	1 1	<del>REG FILE 02</del>	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
H ST LOBBY WARD	1 1	LPDR	1 1
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NOTES: 1 1

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## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Palo Verde Unit 2										DOCKET NUMBER (2) 0 5 0 0 0 5 2 9					PAGE (3) 1 OF 0 5	
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TITLE (4)

Action Statement not Met for Inoperable Radiation Monitor

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)								
1	2	0	3	8	8	8	8	0	1	5	0	0	0	1	0	5	8	9	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 1 0 0		20.402(b)				20.406(c)				60.73(a)(2)(iv)				73.71(b)			
		20.406(a)(1)(i)				60.36(c)(1)				60.73(a)(2)(v)				73.71(c)			
		20.406(a)(1)(ii)				60.36(c)(2)				60.73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)			
		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)(ix)							

## LICENSEE CONTACT FOR THIS LER (12)

NAME Timothy D. Shriver, Compliance Manager										TELEPHONE NUMBER 6 0 2 3 9 3 - 2 5 2 1					
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## 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	
X	I	L	K	I	K	0	2	0	N		

## SUPPLEMENTAL REPORT EXPECTED (14)

<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)										<input type="checkbox"/> NO		EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR			
														0	3	3	1	8	9

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

On December 7, 1988 at approximately 0942 MST, a Unit 2 Chemistry Technician (contractor, non-licensed) discovered the new fuel area radiation monitor RU-19 was inoperable. RU-19 indicated a constant 0.00E-0 millirem per hour radiation level instead of the actual level. RU-19 measures area radiation adjacent to the new fuel storage racks. A review of previous readings determined that the last accurate reading occurred on December 3, 1988 at approximately 0516 MST. On December 4, 1988 at approximately 0516 MST, area surveys were not performed within 24 hours as required by Technical Specifications 3.3.3.1 Action 22.

The cause of the inoperable monitor is believed to be a malfunction of a clock in the computer internal to the monitor. The cause of the missed action statement requirements is under investigation at this time. As immediate corrective action, on December 7, 1988 at approximately 1030 MST, the area monitor RU-19 was reset, tested, and declared operable.

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PDR ADDOCK 05000524  
S PNU

IE 2



## 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	0150005219	88	0115	010	02	OF	05

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

## I. DESCRIPTION OF WHAT OCCURRED:

## A. Initial Conditions:

Unit 2 was in Mode 1 (POWER OPERATION) at 100 percent reactor power on December 3 through 7 during the entire period of this event. The Unit was in the second fuel cycle; thus, spent fuel existed in the fuel pool.

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

Event Classification: Condition Prohibited by the Plant's Technical Specifications.

On December 7, 1988 at approximately 0942 MST, a Unit 2 Chemistry Technician (contractor, non-licensed) discovered that the new fuel area radiation monitor RU-19 did not indicate properly and was inoperable. The Chemistry Technician was performing checks of Technical Specification (TS) monitors when he obtained a reading of 0.00E-00 millirem per hour on the Display Control Unit (DCU) for RU-19. In reviewing the daily averages for the previous three days on the DCU he found those also read 0.00E-00 millirem per hour. The Chemistry Technician (contractor, non-licensed) then checked to determine if the monitor was operating locally. The monitor was found to be reading 0.00E-00 millirem per hour at the local indicator and thus, was not displaying the actual radiation in the area. The Shift Supervisor (operator, licensed) was notified of the inoperable monitor, and he initiated action to compensate for the condition.

At approximately 1015 MST December 7, 1988, a radiation survey was taken in the area, and levels were found to be normal and within specification.

The Radiation Protection Technician (utility, non-licensed) reset the monitor by turning it off and then on again. The local indication then responded normally, and setpoints were verified satisfactory. Based on these results, the monitor was declared operable at approximately 1030 December 7, 1988.

The Chemistry Technician investigated the hourly print out of the monitor and found the last apparent accurate reading occurred at approximately 0516 MST December 3, 1988. Technical Specification 3.3.3.1 ACTION 22 requires area surveys of the monitored area at least once per 24 hours. The only radiation survey of the monitored area during this event was on December 5, 1988 as part of



## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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 8	—	0 1 5	—	0 0	0 3	OF 0 5

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

scheduled weekly surveys. This survey showed no abnormal radiation levels in the area.

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

Other than RU-19, no other structures, systems, or components were inoperable at the start of this event that contributed to this event.

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

Since the monitor was turned off and then back on, the problem has not recurred. On December 3, 1988, the clock in the monitor's computer appears to have malfunctioned. This clock is necessary to tell the computer to update the raw data provided by the detector into a radiation reading each second. With the clock malfunctioned, the monitor will not perform the calculation and the readout will be zero, as observed. When the monitor was reset by turning it off and back on, the computer initialization program reset the clock which then allowed the monitor to operate normally. An Engineering Evaluation has been submitted to determine, if possible, a root cause of failure. Should information become available which significantly alters the reader's perception of the event, a supplement to this report will be submitted.

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

The failure in the monitor caused the Display Control Unit (DCU) to read zero.

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

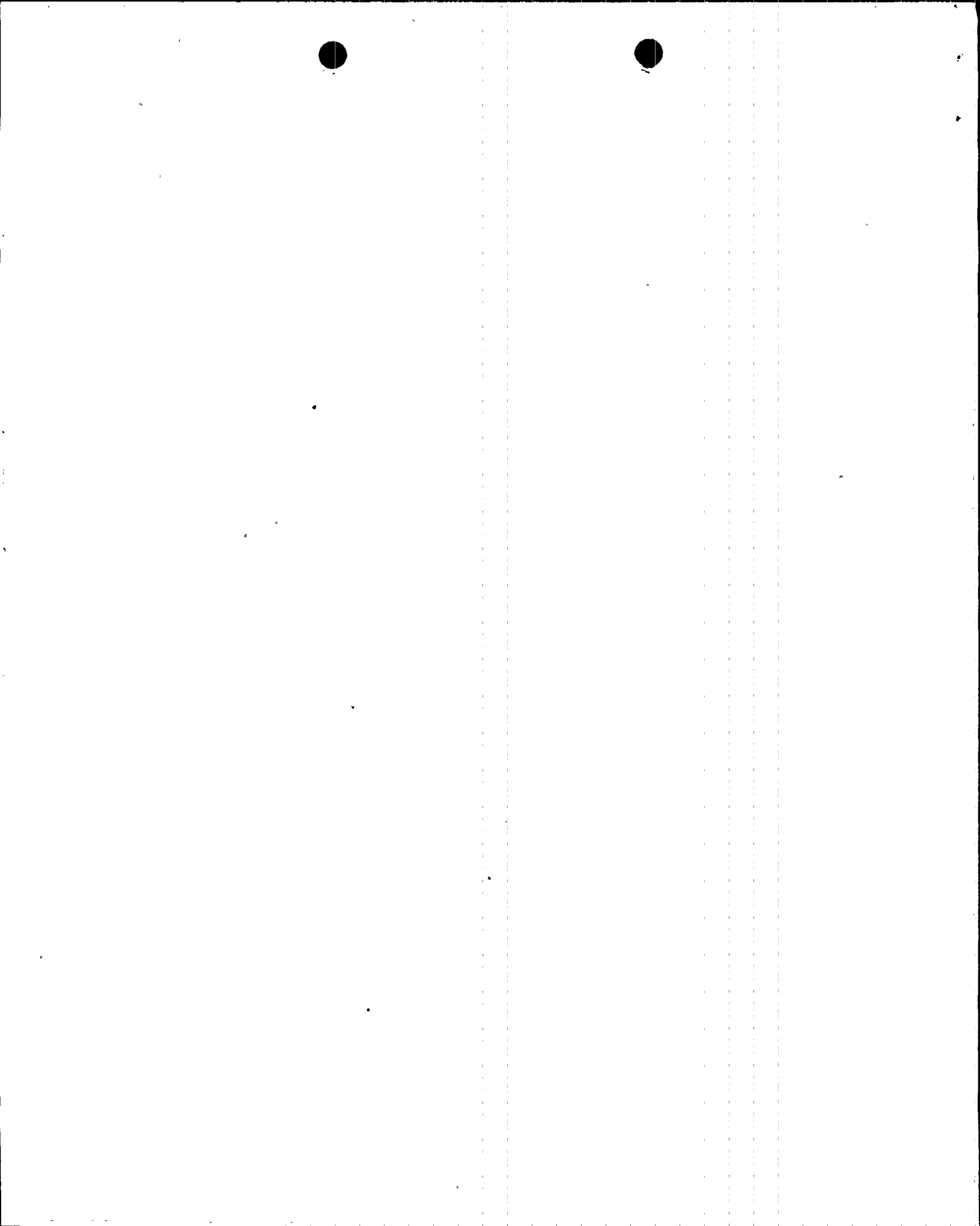
Not applicable - RU-19 provides an alarm action at a preset level and has no automatic features. It also does not provide multiple functions.

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

Not applicable - RU-19 is not a safety-related monitor.

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

The failure of the monitor was discovered during a review of





## 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 (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Palo Verde Unit 2	0 5 0 0 0 5 2 9 8 8	8	0 1 5	0 0	0 4	OF	0 5

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

Technical Specification monitors. Investigation is currently underway, and a supplement to this report will be submitted to identify any additional errors.

I. Cause of Event:

The event continued over the extended period because the shiftly surveillance test failed to identify the inoperable monitor. An investigation is currently underway utilizing the Human Performance Evaluation System. The results of the investigation will be reported as a supplement to this LER.

J. Safety System Response:

Not applicable - no safety system response was required or anticipated.

K. Failed Component Information:

RU-19 is a Kaman monitor model number 952109-001.

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

The OPERABILITY of the radiation monitoring channels ensures that: (1) the radiation levels are continually measured in the areas served by the individual channels and (2) the alarm is initiated when the radiation level trip setpoint is exceeded.

RU-19 is the area radiation monitor for the new fuel area of the fuel building. A second monitor is also located in the building and monitors the spent fuel area. Since the second monitor (RU-31) was operable throughout the event and since only spent fuel was in the fuel building at the time of the event, no safety hazards existed during the period of inoperability. Thus, this event represents no impact to the health and safety of the public.

III. CORRECTIVE ACTIONS:

A. Immediate:

As immediate corrective action, a survey of the area was conducted as required by the Technical Specifications. This was completed at approximately 1015 December 7, 1988. Additionally, the monitor was reset and operated properly. Thus, at approximately 1030 MST December 7, 1988 RU-19 was declared operable. A work request was submitted to troubleshoot the cause of the malfunction and replace or rework as necessary. However, the problem has not recurred and no further action on the work request has occurred. The Shift Supervisor (utility, licensed) informed Units 1 and 3 of the incident.



## 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 8	— 0 1 5	— 0 0	0 5	OF	0 5

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

Unit 2 issued a night order to Operations directing that if a zero reading is received while performing the Surveillance Test, investigation is necessary to insure the zero reading is valid and the monitor is operating properly.

B. Action to Prevent Recurrence:

Changes in the configuration of the monitor are being considered to provide indication if the 0.00E-00 millirem per hour is indicating an inoperable monitor.

Further action to prevent recurrence will be reported as a supplement to this report based on the findings of the Human Performance Evaluation.

IV. PREVIOUS SIMILAR EVENTS:

Although LER's have been submitted on the Radiation Monitoring System, this particular problem has not been previously reported.





## Arizona Nuclear Power Project

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

192-00440-JGH/TDS/RJR

January 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 2  
Docket No. STN 50-529 (License No. NPF-51)  
Licensee Event Report 88-015-00  
File: 89-020-404

Attached please find Licensee Event Report (LER) No. 88-015-00 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  
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INPO Records Center

