

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8910120140 DOC.DATE: 89/10/03 NOTARIZED: NO DOCKET #
 FACIL:STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Publi 05000529
 AUTH.NAME AUTHOR AFFILIATION
 SHRIVER,T.D. 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 89-015-01:on 881203,action statement not met for
 inoperable radiation monitor.

W/8 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 7
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:Standardized plant.

05000529

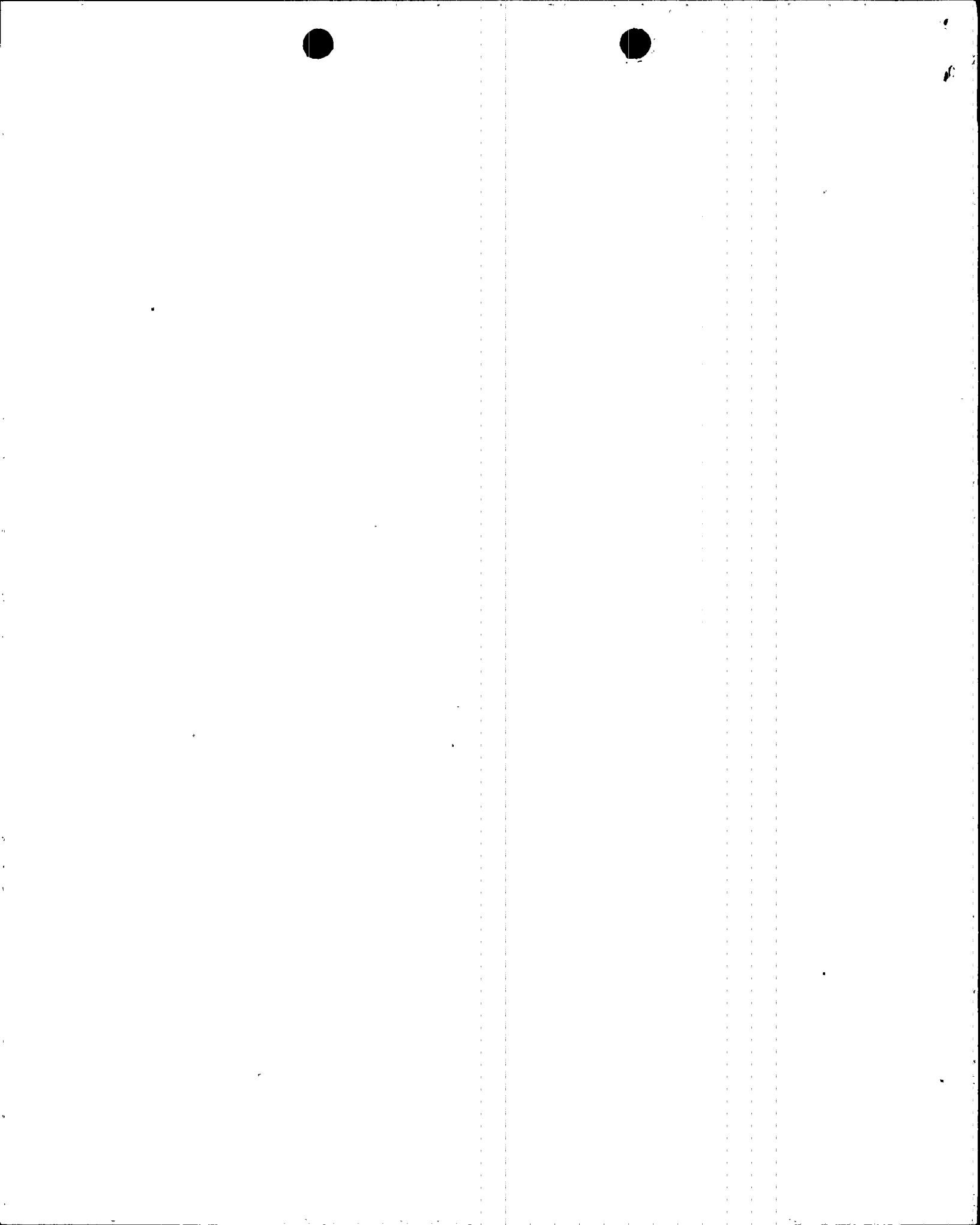
RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
PD5 LA	1 1	PD5 PD	1 1
CHAN,T	1 1	DAVIS,M.	1 1
INTERNAL: ACRS MICHELSON	1 1	ACRS MOELLER	2 2
ACRS WYLIE	1 1	AEOD/DOA	1 1
AEOD/DSP/TPAB	1 1	AEOD/ROAB/DSP	2 2
DEDRO	1 1	NRR/DEST/CEB 8H	1 1
NRR/DEST/ESB 8D	1 1	NRR/DEST/ICSB 7	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/PEB 10	1 1	NRR/DOEA/EAB 11	1 1
NRR/DREP/RPB 10	2 2	NUDOCS-ABSTRACT	1 1
REG FILE 02	1 1	RES/DSIR/EIB	1 1
RGN5 FILE 01	1 1		
EXTERNAL: EG&G WILLIAMS,S	4 4	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 41 ENCL 41



Arizona Public Service Company

PALO VERDE NUCLEAR GENERATING STATION

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

192-00533-JML/TDS/RJR

October 3, 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 NPF-51)
Licensee Event Report 88-015-01
File: 89-020-404

Attached please find Supplement Number 1 to Licensee Event Report (LER) No. 88-015-00 prepared and submitted pursuant to the requirements of 10CFR 50.73. In accordance with 10CFR 50.73(d), we are herewith forwarding a copy of this report 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. M. Levine
J. M. Levine
Vice President
Nuclear Production

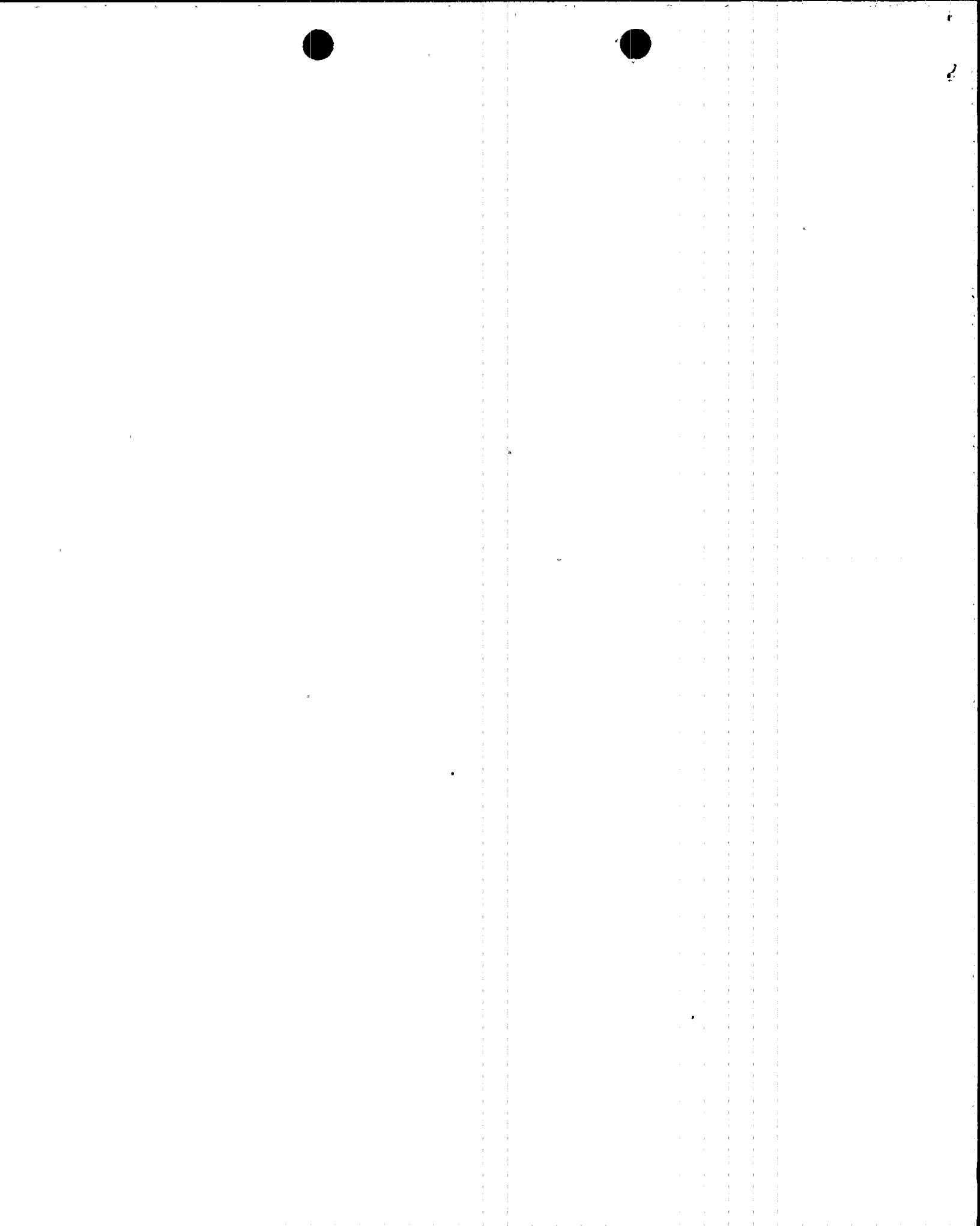
JGH/TDS/RJR/kj

Attachment

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

8910120140 891003
PDR ADDCK 05000529
S PDC

IE22
11



LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)
Palo Verde Unit 2DOCKET NUMBER (2)
0 5 0 0 0 5 2 9 1 OF 0 6

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	8	0	1	5	0	1	1	0	0	3	8	9	N/A	0	5	0	0	0																																					
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																																																											
POWER LEVEL (10)			20.402(b)															20.406(e)															60.73(a)(2)(iv)															73.71(b)														
			20.406(a)(1)(i)															60.73(a)(1)															60.73(a)(2)(v)															73.71(e)														
			20.406(a)(1)(ii)															60.73(a)(2)															60.73(a)(2)(vi)															OTHER (Specify in Abstract below and in Text, NRC Form 368A)														
			20.406(a)(1)(iii)															60.73(a)(2)(i)															60.73(a)(2)(vii)(A)																													
			20.406(a)(1)(iv)															60.73(a)(2)(B)															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 ManagerTELEPHONE 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	
X	I	L	K	I							

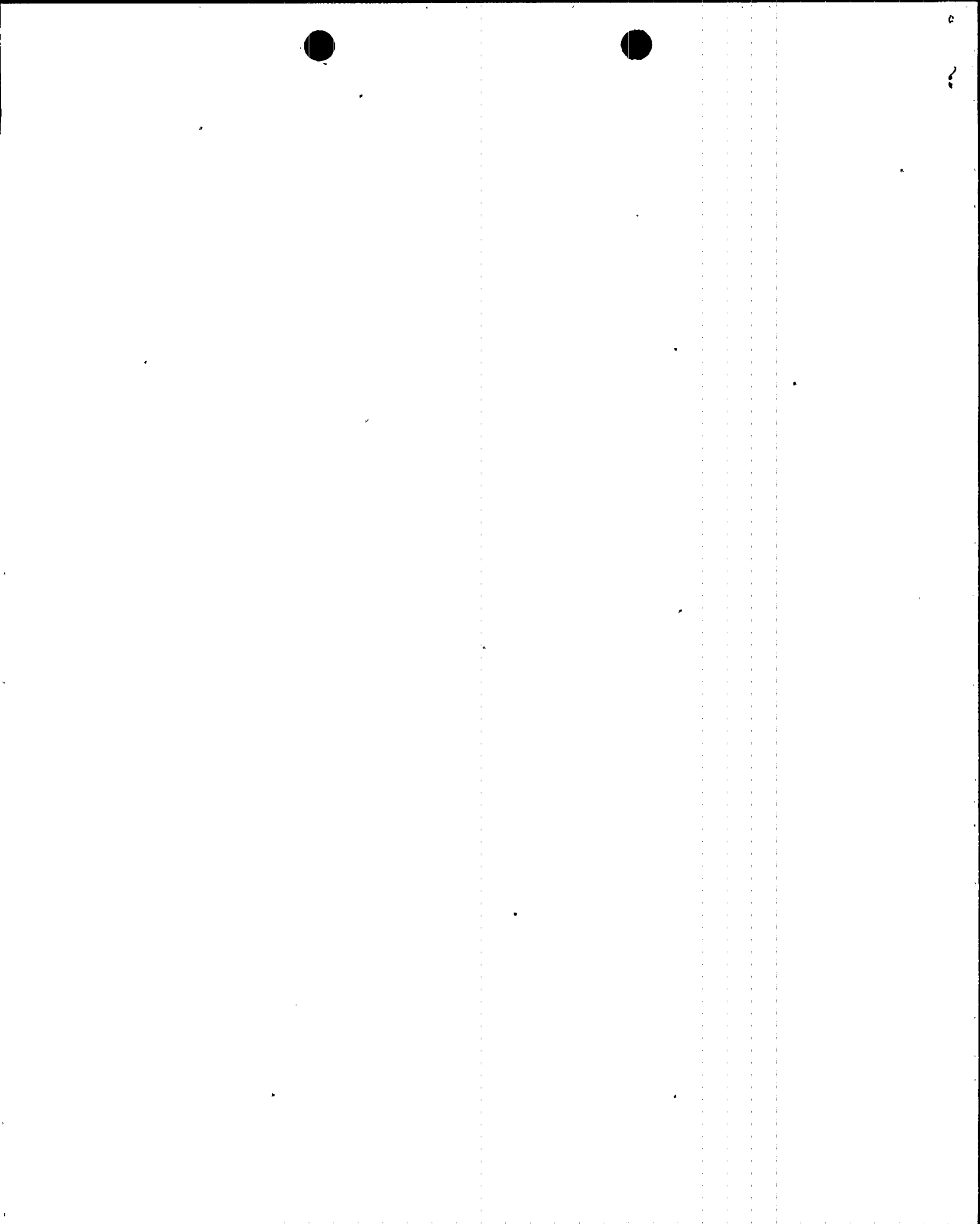
SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) ☒ NO ☐EXPECTED SUBMISSION DATE (15)
MONTH DAY YEAR

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. A root cause of failure was unable to confirm the cause. The cause of the missed action statement requirements is a cognitive personnel error contrary to an approved procedure. As immediate corrective action, on December 7, 1988 at approximately 1030 MST, the area monitor RU-19 was reset, tested, and declared operable.



LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 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) Palo Verde Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 5 2 9	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 8	— 0 1 5	— 0 1	0 2	OF	0 6

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

I. DESCRIPTION OF WHAT OCCURRED:

A. Initial Conditions:

Unit 2 was in Mode 1 (POWER OPERATION) at approximately 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 on 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 printout 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

2

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 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) Palo Verde Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 5 2 9 8 8	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		01	15	01	03	OF	06

TEXT (If more space is required, use additional NRC Form 368A'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. The data collected did not provide objective evidence of a component failure. Thus, the Engineering Evaluation was unable to positively identify a root cause of failure.

- 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:

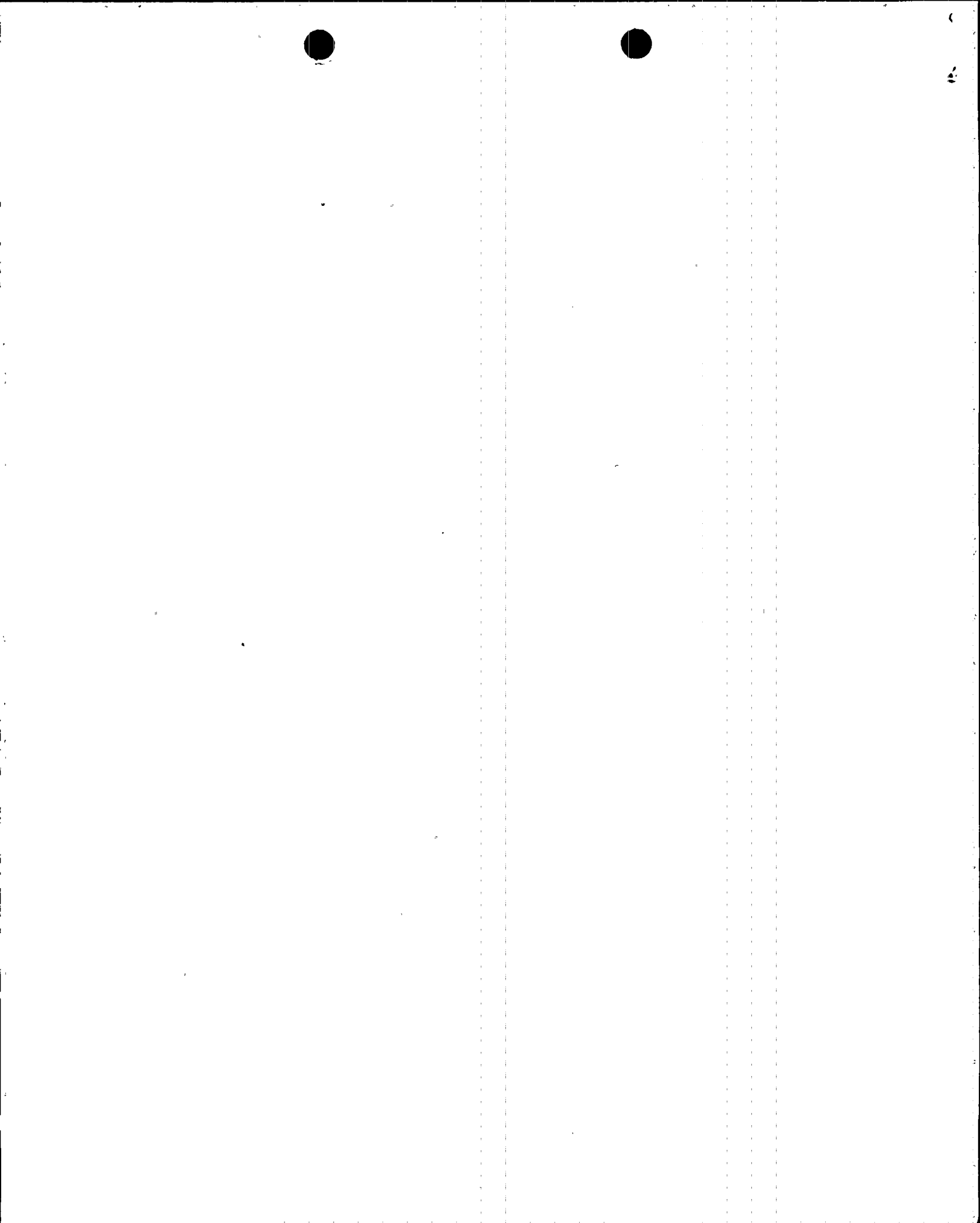
Not applicable - RU-19 provides an alarm action at a present level and has no automatic features. It also does not provide multiple functions.

- G. For failures 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

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 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	0 5 0 0 0 5 2 9	8 8	- 0 1 5	- 0 1	0 4	OF	0 6

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

Technical Specification monitors.

I. Cause of Event:

The failure to recognize the inoperability of RU-19 was cognitive personnel error by the Control Room Operator (utility licensed) based on a misinterpretation of procedural instructions in the Surveillance Test. The Control Room Operator believed that the successful performance of step 8.1.1 of the Surveillance Test procedure was sufficient for the determination of OPERABILITY for RU-19. However, Appendix A of 42ST-2ZZ34 requires the performance of the second step (8.1.2).

Step 8.1.1 of the Surveillance Test instructs the test performer to obtain a computer display of the operational status of all the monitors in the system. A non-flashing, green '1' normally indicates that a monitor channel is functioning properly and no alarms are present. If some other indication appears, the test performer is instructed to obtain the data base display for that channel for further evaluation. For the six performances of the Surveillance Test during the RU-19 inoperability, a non-flashing, green '1' appeared. This is the acceptance criterion given in step 8.1.1, which ends with the instruction "...record results in Appendix A."

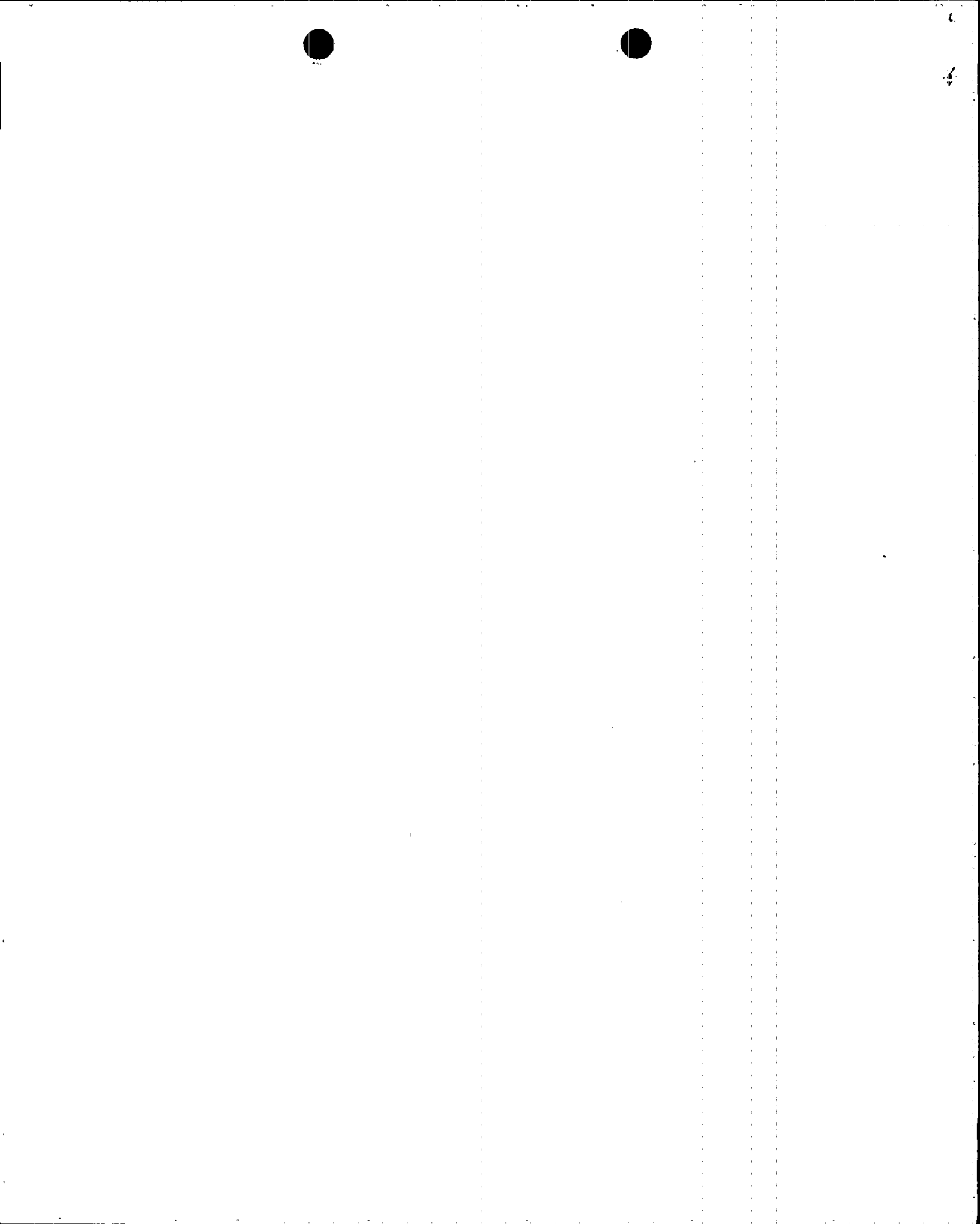
Step 8.1.2 instructs the performer to obtain an hourly trend display for each monitor listed in Appendix A and evaluate the data per step 8.1.2.1, which states: "Further evaluate these one hour average readings by performing the following steps:

Verify that the current hourly average is consistent with current plant conditions.

Verify that any trends indicated by the 24 hourly averages were consistent with plant conditions during the same time frame.

Any SPIKE in the hourly averages of greater than 1 (one) decade from the current hourly average reading should be evaluated and documented in the test log.

If any inconsistencies occurred in any of the 3 (three) previous steps, request that RP perform an evaluation of the monitor and document it in the test log."



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 8 8 — 0 1 5 — 0 1 0 5 OF 0 6

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

No data is required in Appendix A, as the acceptance criteria only requires a "yes, no, or not applicable" be circled and the initials of the performer. Step 8.1.1 states, "Evaluate the data base display to determine if the monitor is OPERABLE. Record results in APPENDIX A". Thus, the test performer did not obtain and evaluate the hourly trend data, although the procedure does not provide for omitting step 8.1.2, and Appendix A specifically refers to step 8.1.2 for the acceptance criteria. Had step 8.1.2 been performed, the change from variable readings to consistently zero readings would have been recognized and could have been investigated.

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 on December 7, 1988. Additionally, the monitor was reset and operated properly. Thus, at approximately 1030 MST on 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.



LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-830), 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 | 8 | 9 | — | 0 | 1 | 5 | — | 0 | 1 | 0 | 6 | OF | 0 | 6

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

The Shift Supervisor (utility, licensed) informed Units 1 and 3 of the incident.

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 were considered not possible due to internal constraints of the computer. The software cannot determine when a current radiation reading is valid or not. Each monitor reports currently indicated conditions which must be analyzed with all other data available. Operational procedures will therefore continue to be used to validate parameters and operability of the monitor.

As action to prevent recurrence of the Human Performance problems identified in this event, the following actions are being taken:

The Radiation Monitoring System surveillance procedure is being revised to clarify instructions, acceptance criteria, and guidance on evaluation of a monitor's ability to perform its function. This revision is expected to be complete by October 31, 1989.

The training received by the performance group responsible for shiftly surveillance of the Radiation Monitoring System will be evaluated and upgraded as necessary. The completion of this task is expected by November 30, 1989.

IV. PREVIOUS SIMILAR EVENTS:

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

