

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9008060141 DOC.DATE: 90/07/28 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 90-008-00:on 900704,RCS boron sample late resulting in  
 missed action.

W/9 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 6  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:Standardized plant.

05000529

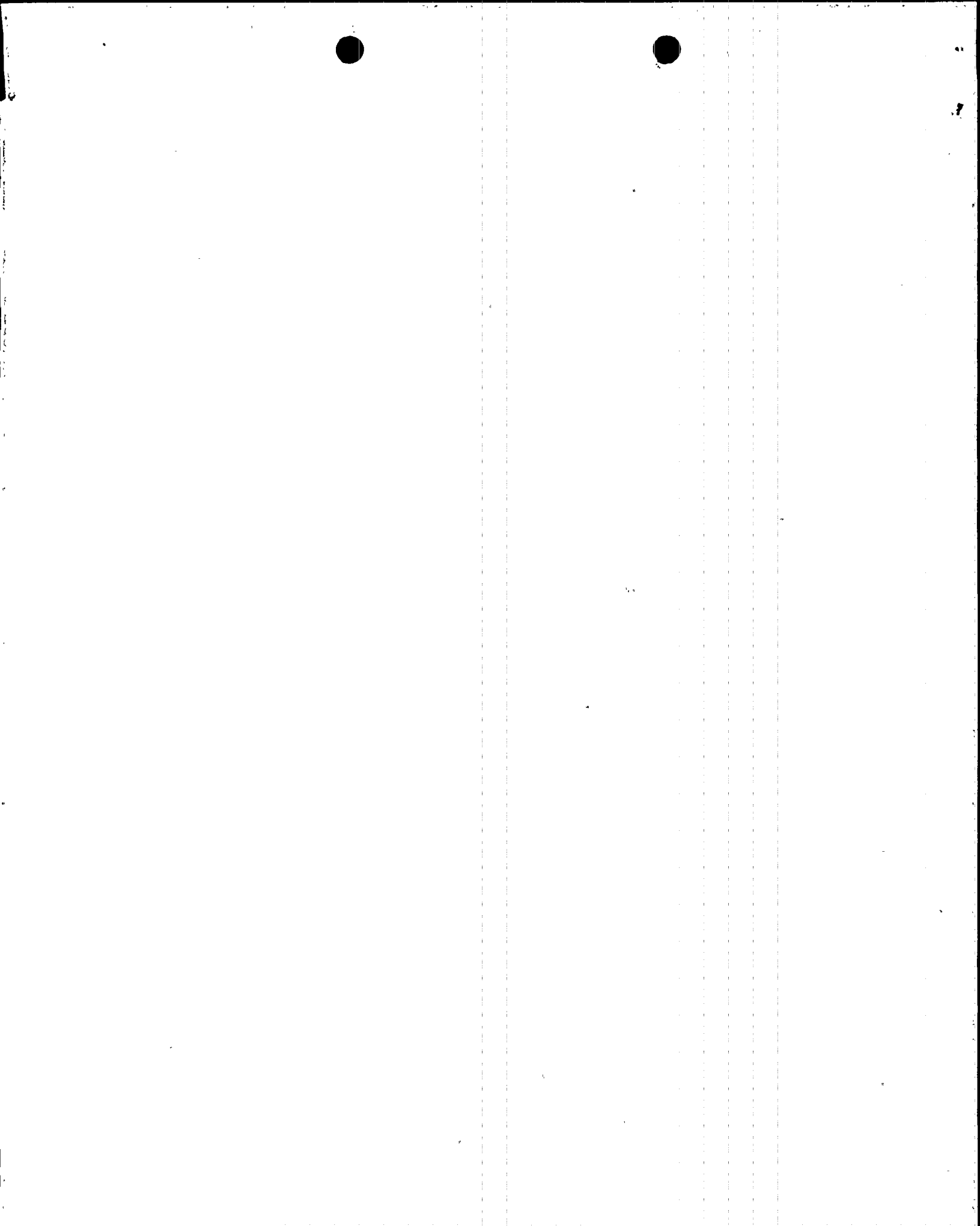
|           | RECIPIENT<br>ID CODE/NAME | COPIES<br>LTTR ENCL | RECIPIENT<br>ID CODE/NAME | COPIES<br>LTTR ENCL |
|-----------|---------------------------|---------------------|---------------------------|---------------------|
|           | PD5 LA                    | 1 1                 | PD5 PD                    | 1 1                 |
|           | PETERSON,S.               | 1 1                 | TRAMMELL,C.               | 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                 | <del>REG FILE</del> 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

192-00682-JML/TRB/RKR  
July 28, 1990

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

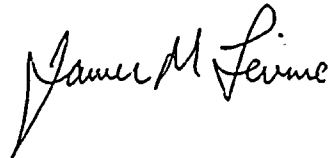
Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Unit 2  
Docket No. STN 50-529 (License No. NPF-51)  
Licensee Event Report 90-008-00  
File: 90-020-404

Attached please find Licensee Event Report (LER) No. 90-008-00 prepared and submitted pursuant to 10CFR50.73. In accordance with 10CFR50.73(d), we are 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,



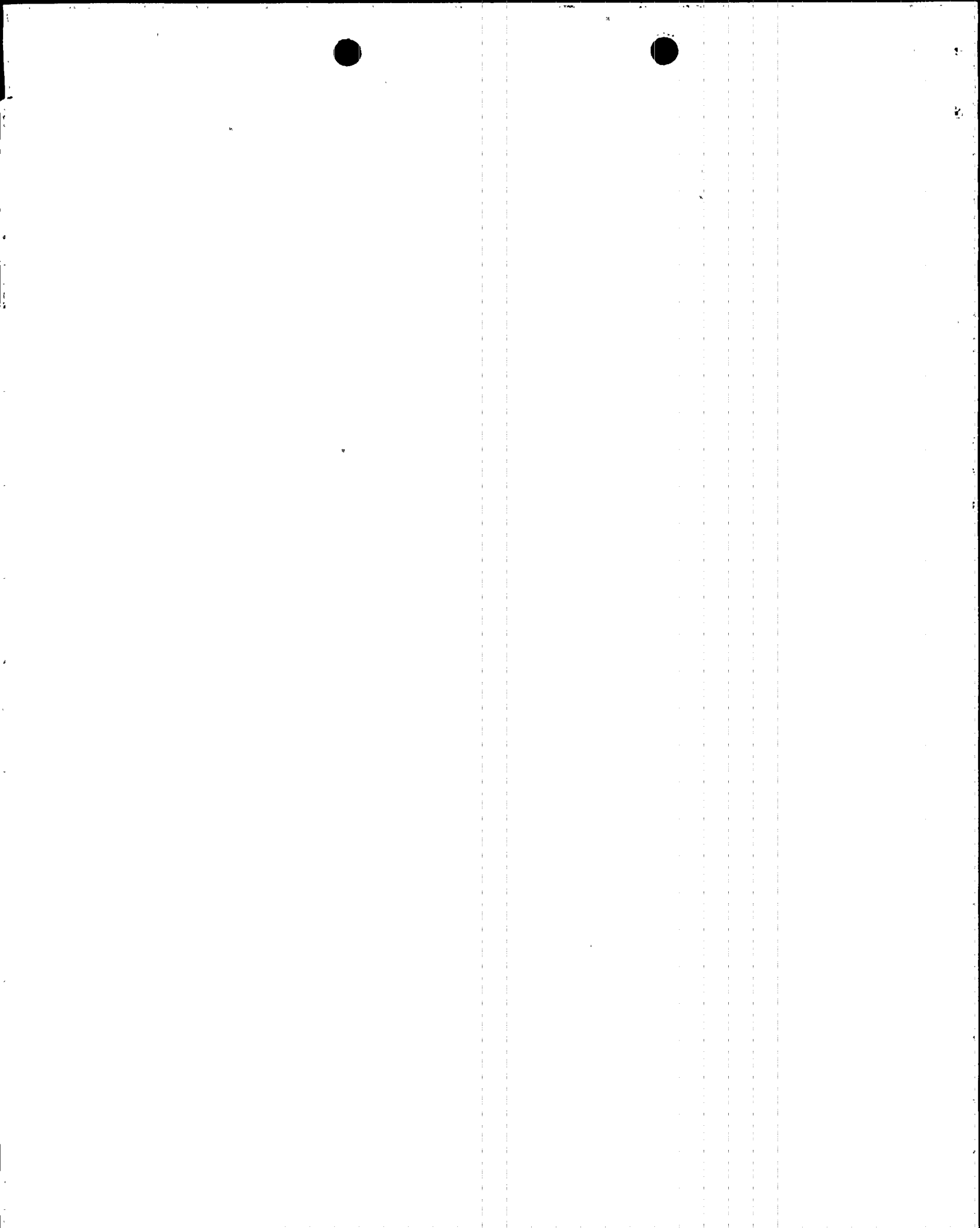
JML/TRB/RKR/dmn

Attachment

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

9008060141 900728  
PDR ADOCK 05000529  
S PDC

IE22  
1/1



## LICENSEE EVENT REPORT (LER)

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) Palo Verde Unit 2 DOCKET NUMBER (2) 0 5 0 0 0 5 2 9 1 OF 0 5 PAGE (3)

TITLE (4) RCS Boron Sample Late Resulting In Missed Action

| 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) |
| 07                     | 04  | 90   | 90   | 008               | 00               | 07              | 28                   | 90   | 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) |                   |                  |                 |                      |      |  |                  |
| POWER LEVEL (10) 0 0 0 |     |      | 20.402(b)  |                   | 20.405(c)        |                 | 50.73(a)(2)(iv)      |      | 73.71(b)   |                  |
|                        |     |      | 20.405(a)(1)(i)  |                   | 50.38(c)(1)      |                 | 50.73(a)(2)(v)       |      | 73.71(c)   |                  |
|                        |     |      | 20.405(a)(1)(ii)   |                   | 50.38(c)(2)      |                 | 50.73(a)(2)(vii)     |      | OTHER (Specify in Abstract below and in Text, NRC Form 366A) |                  |
|                        |     |      | 20.405(a)(1)(iii)  |                   | 50.73(a)(2)(i)   |                 | 50.73(a)(2)(viii)(A) |      |  |                  |
|                        |     |      | 20.405(a)(1)(iv)   |                   | 50.73(a)(2)(ii)  |                 | 50.73(a)(2)(viii)(B) |      |  |                  |
|                        |     |      | 20.405(a)(1)(v)  |                   | 50.73(a)(2)(iii) |                 | 50.73(a)(2)(ix)      |      |  |                  |

LICENSEE CONTACT FOR THIS LER (12)

| NAME                                  | TELEPHONE NUMBER      |
|---------------------------------------|-----------------------|
| Thomas R. Bradish, Compliance Manager | 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)

| YES (If yes, complete EXPECTED SUBMISSION DATE) | NO                       | EXPECTED SUBMISSION DATE (15) | MONTH | DAY | YEAR |
|---|--------------------------|-------------------------------|-------|-----|------|
| <input checked="" type="checkbox"/>             | <input type="checkbox"/> |                               |       |     |      |

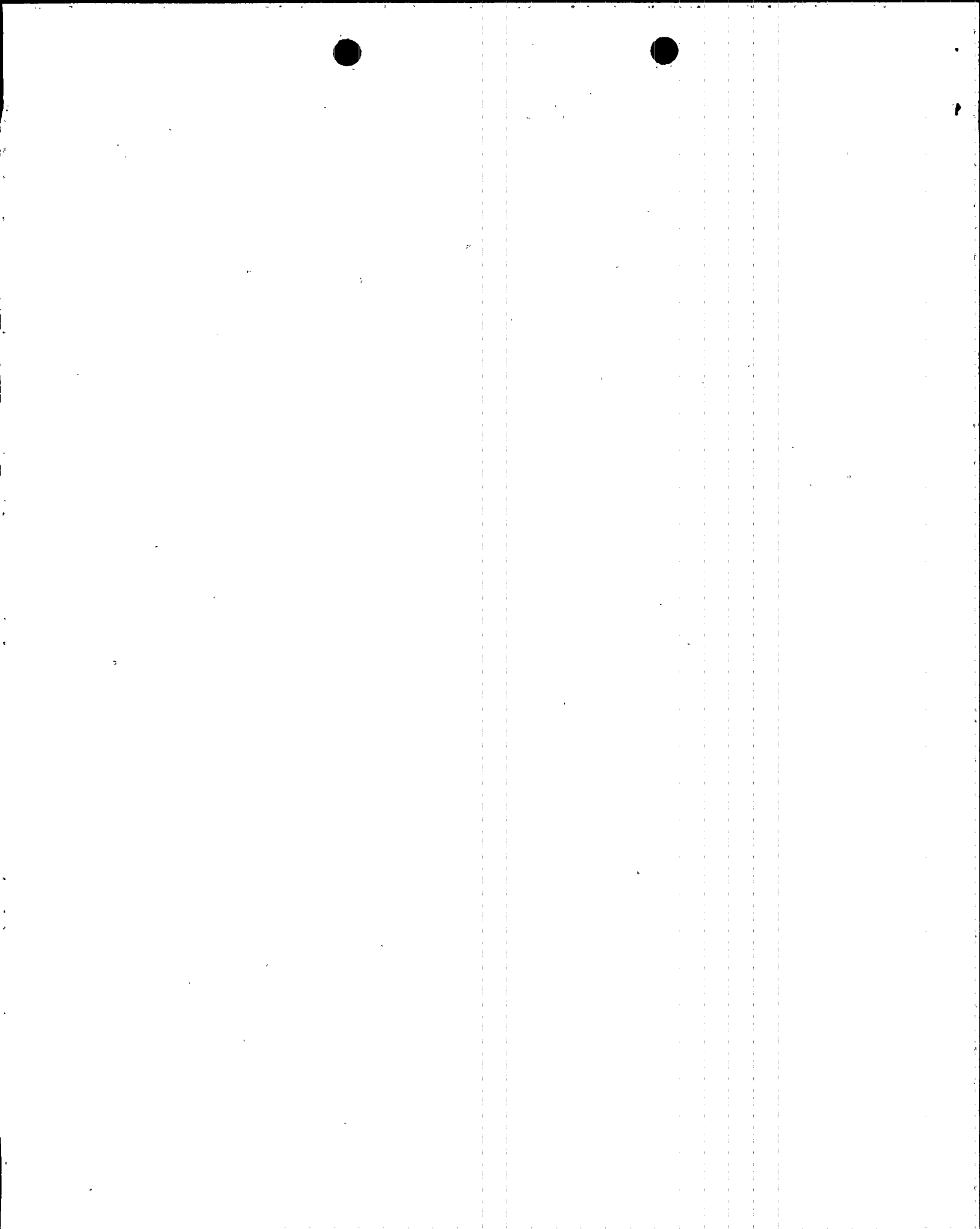
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

At approximately 1620 MST on July 4, 1990, Palo Verde Unit 2 was in Mode 3 (HOT STANDBY) when a Control Room operator discovered that the Reactor Coolant System (RCS) boron concentration had not been determined within the frequency required by the ACTION requirements of Technical Specification (TS) 3.1.2.7. This resulted in noncompliance with the ACTION requirements of TS 3.1.2.7. The ACTION requirements were not met for approximately 28 minutes.

The cause of the event was a cognitive personnel error by Control Room personnel responsible for determining the sampling frequency.

Immediate corrective action was taken to notify plant chemistry of the required sample frequency and revise the sample schedule. The Control Room personnel involved in this event were counselled to maintain full awareness of the requirements of procedures and TS requirements.

No other previous events have been reported pursuant to 10CFR50.73 where an RCS boron concentration sample was missed due to a change in sample frequency.



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 | 9   0          | —   0   0   8     | —   0   0       | 0   2 | OF       | 0   5 |  |  |

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

## I. DESCRIPTION OF WHAT OCCURRED:

## A. Initial Conditions:

At approximately 1620 MST on July 4, 1990, Palo Verde Unit 2 was in Mode 3 (HOT STANDBY) following a refueling outage. The Reactor Coolant System (RCS)(AB) was at approximately 440 degrees Fahrenheit (F) and 1700 pounds per square inch absolute (psia).

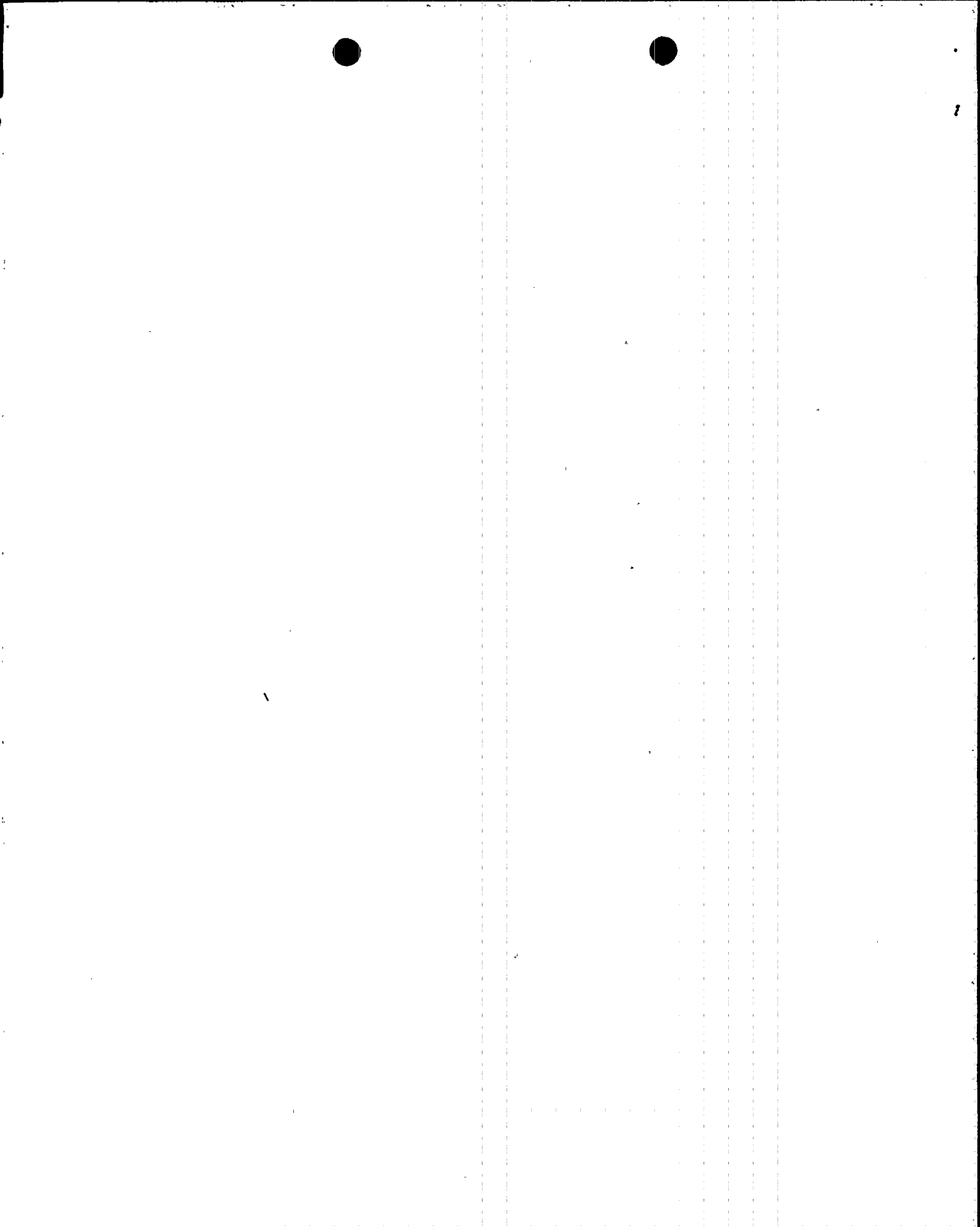
## B. Reportable Event Description (Including Dates and Approximate Times of Major Occurrences):

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

At approximately 1620 MST on July 4, 1990, a Control Room operator (utility, licensed) discovered that the RCS boron concentration had not been determined within the frequency required by the ACTION requirements of Technical Specification (TS) Limiting Condition for Operation (LCO) 3.1.2.7. This resulted in noncompliance with the ACTION requirements of TS 3.1.2.7.

Prior to the event, on July 3, 1990, one startup channel high neutron flux alarm [Boron Dilution Alarm System (BDAS)] (ALM)(IG) was taken out of service for scheduled surveillance testing. ACTION a.1 of TS 3.1.2.7 was entered for one BDAS channel being inoperable. The ACTION requirements of TS 3.1.2.7 require an RCS boron concentration sample frequency of six hours with one charging pump operating with sample frequency changing to two and one half hours with two charging pumps operating. At approximately 1320 MST on July 4, 1990, with one charging pump operating, the scheduled RCS boron concentration sample was taken. At approximately 1322 MST on July 4, 1990, a second charging pump (P)(B) was started. When the second charging pump was started, Control Room personnel did not realize that the required sample frequency had changed.

At approximately 1620 MST on July 4, 1990, the scheduled RCS boron concentration sample was taken (common practice is to take samples at approximately half the TS required frequency). While entering the results of the RCS boron concentration sample, a Control Room operator determined that when the second charging pump was started the sample frequency requirement had changed from six hours to two and one half hours. The sample should have been taken by approximately 1552 MST on July 4, 1990. Therefore, the ACTION





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)<br><br>Palo Verde Unit 2 | DOCKET NUMBER (2)<br><br>0 5 0 0 0 5 2 9 | LER NUMBER (6) |                   |                 | PAGE (3) |    |     |
|  |  | YEAR           | SEQUENTIAL NUMBER | REVISION NUMBER |          |    |     |
|  |  | 9 0            | 0 0 8             | 0 0             | 0 3      | OF | 0 5 |

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

requirements were not met for approximately 28 minutes. Plant chemistry was immediately notified, the sample frequency was changed to two and one half hours and the sample schedule was revised.

- 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 channel discussed in Section I. B, no structures, systems, or components were inoperable which contributed to this event.

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

Not applicable - no component or system failures were involved.

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

Not applicable - no component failures were involved.

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

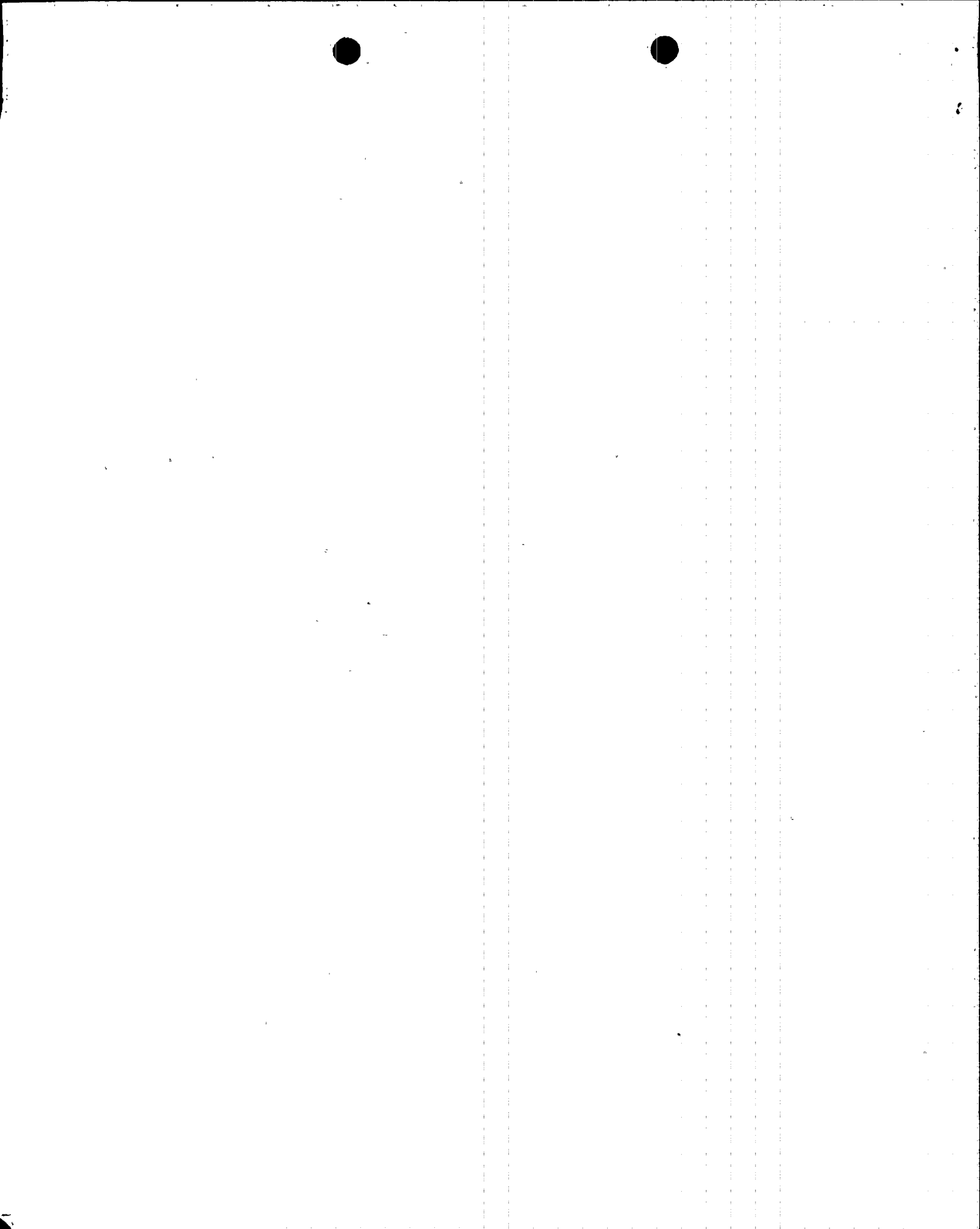
Not applicable - no failures of components with multiple functions were involved.

- G. For a 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 - 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:

Not applicable - there have been no component or system failures or procedural errors identified.



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)

Palo Verde Unit 2

0 5 0 0 0 5 2 9 9 0 - 0 0 8 - 0 0 0 4 OF 0 5

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

## I. Cause of event

The cause of the event was a cognitive personnel error (SALP Cause Code A). A Control Room operator (utility, licensed) started the second charging pump and did not remember to reference the TS requirements with one channel of BDAS inoperable. Additionally, Control Room personnel (utility, licensed) who were aware of the TS requirements did not remind the Control Room operator that the TS requirements changed when the second charging pump was started. The second charging pump was started in accordance with the approved normal operating procedure for starting a charging pump. However, Control Room personnel did not use the approved abnormal operating procedure for an inoperable BDAS channel when the second charging pump was started. Therefore, the cognitive personnel error resulted in not following the abnormal operating procedure which requires that the sample frequency be determined whenever there is a change in the number of operating charging pumps and chemistry be notified of the required sample frequency.

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

## J. Safety System Response:

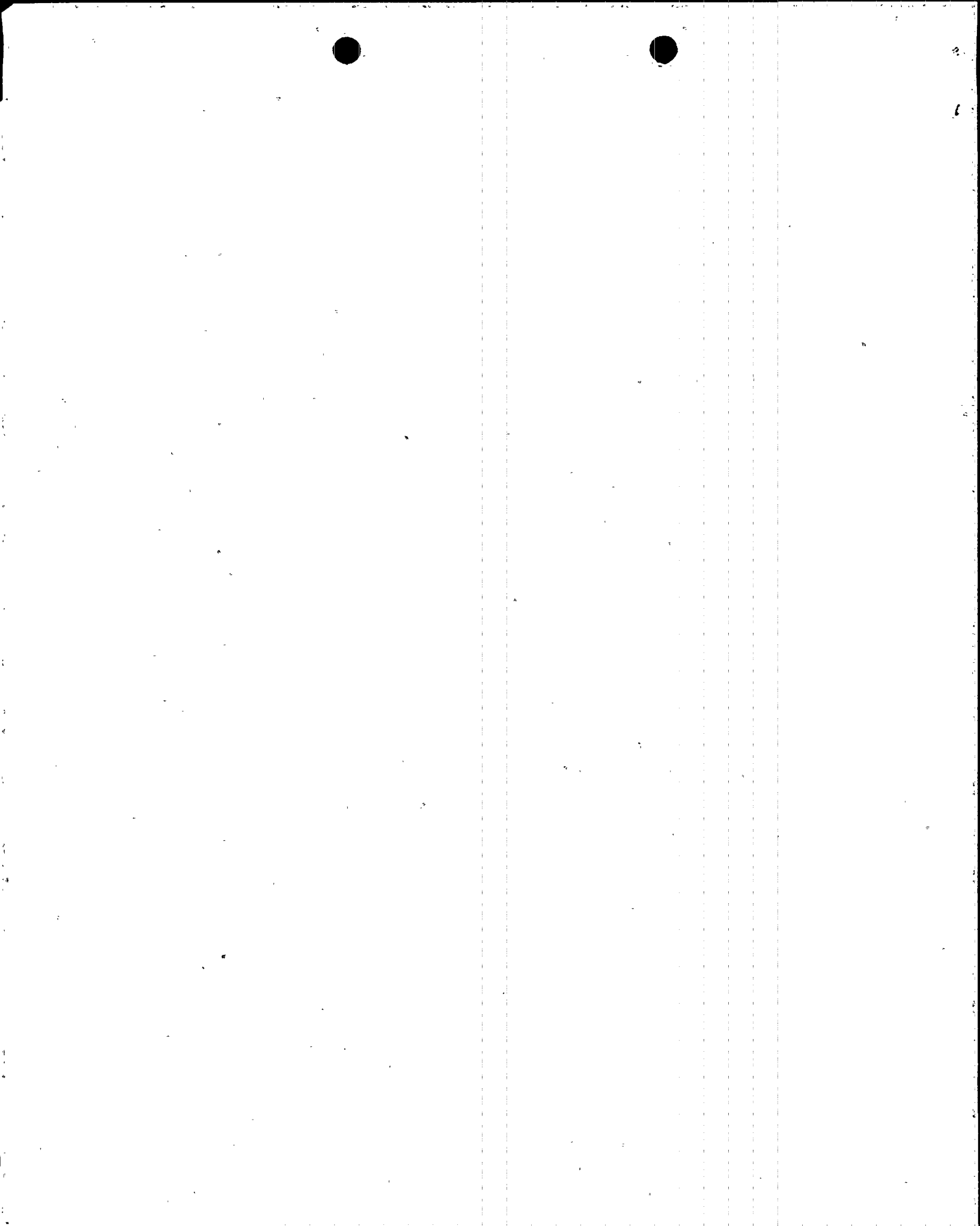
Not applicable - there were no safety system responses and none were necessary.

## 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 designed to provide alarms to alert a Control Room Operator to a potential boron dilution event while in Modes 3 (HOT STANDBY), 4 (HOT SHUTDOWN), 5 (COLD SHUTDOWN), and 6 (REFUELING). 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 second charging pump was started at approximately



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)<br><br>Palo Verde Unit 2 | DOCKET NUMBER (2)<br><br>0 5 0 0 0 5 2 9 | LER NUMBER (6) |                               |                           | PAGE (3)   |  |  |
|  |  | YEAR<br>9 0    | SEQUENTIAL<br>NUMBER<br>0 0 8 | REVISION<br>NUMBER<br>0 0 | 0 5 OF 0 5 |  |  |

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

1322 MST on July 4, 1990. The next sample was taken at approximately 1620 MST on July 4, 1990. Therefore, the two and a half hour frequency required to meet the ACTION requirements was exceeded by approximately 28 minutes.

The sample taken at approximately 1620 on July 4, 1990 indicated that the RCS boron concentration was acceptable. Additionally, one channel of BDAS was OPERABLE and 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. Therefore, this event had no impact on the safe operation of the plant or the health and safety of the public.

## III. CORRECTIVE ACTION:

## A. Immediate:

Chemistry was notified of the required sample frequency and revised the sample schedule.

## B. Action to Prevent Recurrence:

The Control Room personnel involved in this event were counselled to maintain full awareness of the requirements of procedures being worked. Unit 2 Control Room personnel were notified of this event. Units 1 and 3 were also notified of this event.

## IV. PREVIOUS SIMILAR EVENTS:

No other previous events have been reported pursuant to 10CFR50.73 where a RCS boron concentration sample was missed due to a change in sample frequency.

