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ACCESSION NBR:8911060427 DOC.DATE: 89/10/25 NOTARIZED: NO DOCKET #
 FACIL:STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528
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 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-019-00:on 890929,ESF actuation caused by loose connection.

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Arizona Public Service Company

PALO VERDE NUCLEAR GENERATING STATION

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

192-00543-JML/TDS/SBJ

October 25, 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 89-019-00
File: 89-020-404

Attached please find Licensee Event Report (LER) No. 89-019-00 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. M. Levine
Vice President
Nuclear Production

JML/TDS/SBJ/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

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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 1

DOCKET NUMBER (2)
0 5 0 0 0 5 2 8 1

PAGE (3)
1 OF 0 5

TITLE (4)
Engineered Safety Feature Actuation Caused by Loose Connection

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	9	2	9	8	9	0	1	9	0	0
0	9	2	9	8	9	0	1	9	0	0

OPERATING MODE (9) N

POWER LEVEL (10) 01010

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8: (Check one or more of the following) (11)

20.402(b)	20.405(c)	X	60.73(a)(2)(iv)	73.71(b)
20.405(a)(1)(i)	60.36(c)(1)		60.73(a)(2)(v)	73.71(c)
20.405(a)(1)(ii)	60.36(c)(2)		60.73(a)(2)(vii)	X OTHER (Specify in Abstract below and in Text, NRC Form 366A)
20.405(a)(1)(iii)	60.73(a)(2)(i)		60.73(a)(2)(viii)(A)	
20.405(a)(1)(iv)	60.73(a)(2)(ii)		60.73(a)(2)(viii)(B)	
20.405(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

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

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

On September 29, 1989 at approximately 0720 MST, Unit 1 was in a refueling outage with the core off-loaded when the "B" train of Fuel Building Essential Ventilation Actuation System (FBEVAS) spuriously actuated. The "B" train FBEVAS logic cross tripped the "A" train FBEVAS and Control Room Essential Filtration Actuation System (CREFAS), trains "A" and "B" as designed.

At approximately 0744 MST on September 29, 1989 the fuel building vent low and high range gas channels were declared inoperable and the "B" FBEVAS was reset and placed in bypass. Technical Specification (TS) 3.3.3.8 ACTION 37, and ACTION 41 requirements were initiated as required.

The cause of this event was a loose connection between the radiation monitor's remote indication and control unit instrument drawer and instrument cabinet.

As immediate corrective action, the connection was fully engaged by firmly installing the instrument drawer. An engineering evaluation will be performed to determine the corrective action to prevent recurrence.

On October 2, 1989 at approximately 0744 MST, the high range radiation monitor gas channel had been inoperable for 72 hours. Therefore, this report is also being submitted in accordance with TS 3.3.3.8 ACTION 42(b) and 6.9.2.

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) Palo Verde Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 5 2 8 8 9	LER NUMBER (8)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		8 9	0 1 9	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 September 29, 1989 at approximately 0720 MST, Palo Verde Unit 1 was in a refueling outage with the core (AC) off-loaded. There was no fuel movement in progress. The reactor coolant system was at atmospheric pressure with a temperature of approximately 80 degrees Fahrenheit.

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

Event Classification: Engineered Safety Feature Actuation

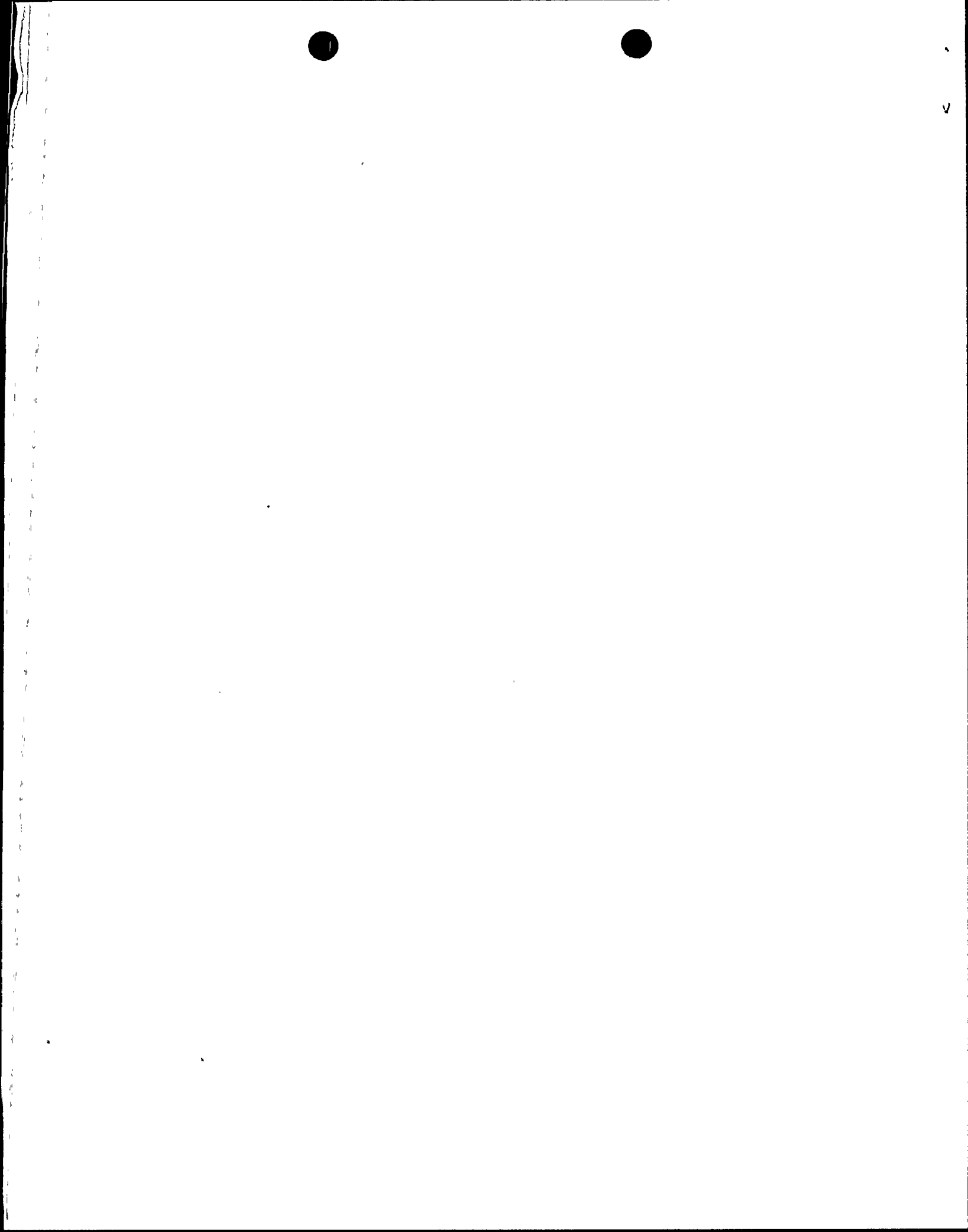
On September 29, 1989 at approximately 0720 MST, the "B" train of Fuel Building Essential Ventilation Actuation System (FBEVAS)(JE) spuriously actuated. The "B" train FBEVAS logic cross tripped the "A" train FBEVAS and Control Room Essential Filtration Actuation System (CREFAS)(JE) as designed.

The reactor operator (utility, licensed) verified all equipment actuated as designed. The fuel building low range effluent radiation monitor (ND)(IL)(RI), which actuates "B" FBEVAS was indicating normal radiation levels. A review of the radiation monitor recorders did not reveal a spike or condition that would have initiated FBEVAS. At approximately 0744 MST the fuel building ventilation low range and high range radiation monitor gas channels were declared inoperable and the "B" FBEVAS was reset and placed in bypass.

The fuel building low range monitor (RU-145) works in conjunction with a high range monitor (RU-146). The low range monitor is normally operating with the high range monitor in standby. When the low range monitor reaches a predetermined setpoint, the high range monitor starts and the low range monitor goes to standby. Therefore, the high range monitor must be declared inoperable when the low range monitor is inoperable.

Technical Specification (TS) 3.3.3.8 ACTION 37, requirements were initiated at approximately 0845 MST on September 29, 1989. There was no fuel movement in progress during the event so TS 3.3.3.8 ACTION 41 requirements were met.

The control room essential filtration system (VI) and the fuel building essential ventilation system (VG) were secured and normal fuel building and control building ventilation returned to service at approximately 0752 MST on September 29, 1989.



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.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			

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

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

Not applicable - No components were inoperable at the start of this event that contributed to this event other than described in Section I.B.

- 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 component failures 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 train was returned to service:

Not applicable - No component failures were involved. However, the fuel building ventilation radiation monitor gas channels were declared inoperable on September 29, 1989 at approximately 0744 MST. The radiation monitors were declared operable on October 3, 1989 at approximately 1101 MST.

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

Not applicable - No component or system failures or procedural errors were involved.

- I. Cause of Event:

The cause of this event was a loose connection between the radiation monitor instrument drawer and the instrument cabinet. There were no personnel errors, procedural errors, or unusual work characteristics associated with this event.

On September 26, 1989 maintenance technicians (utility, non-licensed) completed work on the fuel building vent low range radiation monitor. The remote indication and control (RIC) unit (CPU) instrument drawer was pushed into place and secured in the

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)

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

instrument cabinet. The required surveillance tests were performed and the radiation monitor was declared operable at approximately 2246 MST on September 26, 1989. The troubleshooting of the circuit discovered that the instrument drawer could be slid into place, feel properly seated, and operate properly while not actually being fully seated.

J. Safety System Response:

FBEVAS and CREFAS responded to the spurious signal as designed. The fuel building normal ventilation (VG) was isolated and the normal air handling units (AHU) were stopped. Train "A" and "B" fuel building essential air ventilation units started to control any release from the building. The control room normal ventilation (VI) isolated and normal air handling units stopped. Train "A" and "B" control room essential filtration units started.

Several spurious signals were received on "B" FBEVAS before the condition was corrected. "B" FBEVAS was in bypass so no equipment actuations occurred because of these spurious signals.

K. Failed Component Information:

Not applicable - there were no failed components.

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

There were no safety consequences or implications resulting from the CREFAS and FBEVAS actuations. The Fuel Building Ventilation Monitor detects any activity released into the fuel building ventilation due to activities in the fuel building. The radiation monitor performs the safety function of initiating an isolation of normal ventilation systems and activating essential ventilation system on a HIGH-HIGH alarm. As discussed in Section I.B, there was no indication of abnormal radiation levels at the time of the event. Additionally, the fuel building was surveyed and no abnormal radiation levels existed.

III. CORRECTIVE ACTIONS:

A. Immediate:

The reactor operator verified all equipment operated as designed. The fuel building area was surveyed to verify that there were no unusual radiation levels. The fuel building ventilation radiation monitors were declared inoperable and a work request initiated.

The multi-pin connector was fully engaged by firmly installing the instrument drawer into the instrument cabinet.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 600 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.

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

B. Action to Prevent Recurrence:

Notification of this event and its cause has been given to Unit 2 and Unit 3 I&C supervision and Unit 1 instrument technicians to make them aware of the condition in order to minimize the probability of recurrence of the condition.

An engineering evaluation (EER 89-SQ-136) will be performed to determine the corrective action to prevent recurrence. This will be completed by April 24, 1990.

IV. PREVIOUS SIMILAR EVENTS:

There have been no previous actuations of FBEVAS and CREFAS that have been attributed to the same root cause.

V. ADDITIONAL INFORMATION

On October 2, 1989 at approximately 0744 MST, the high range radiation monitor had been inoperable for 72 hours. Therefore, this report is also being submitted in accordance with TS 3.3.3.8 ACTION 42(b) and 6.9.2 for an event in which the fuel building vent high range effluent monitor was inoperable greater than 72 hours.

If additional information is identified during the engineering evaluation that significantly alters the reader's perception of this event, a supplemental report will be submitted.

