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ACCESSION NBR:9007240203 DOC.DATE: 90/07/20 NOTARIZED: NO DOCKET #
 FACIL:STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528
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SUBJECT: LER 90-008-00:on 900620,main steam isolation due to
 procedural inadequacy.

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 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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

JAMES M. LEVINE
VICE PRESIDENT
NUCLEAR PRODUCTION

192-00679-JML/TRB/SBJ
July 19, 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 1
Docket No. STN 50-528 (License No. NPF-41)
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 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/SBJ/dmn

Attachment

cc: W. F. Conway (all with attachment)
J. B. Martin
D. H. Coe
S. R. Peterson
A. C. Gehr
A. H. Guttermann
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** PAGE (3) **1 OF 0 5**

TITLE (4) **Main Steam Isolation Due to Procedural Inadequacy**

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	6	2	0	9	0	0	7	2	N/A		0 5 0 0 0	
0	6	2	0	9	0	0	7	2	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)			<input checked="" type="checkbox"/> 50.73(a)(2)(iv)			73.71(b)
			20.405(a)(1)(i)			50.36(c)(1)			<input type="checkbox"/> 50.73(a)(2)(v)			73.71(c)
			20.405(a)(1)(ii)			50.36(c)(2)			<input type="checkbox"/> 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)			<input type="checkbox"/> 50.73(a)(2)(viii)(A)			
			20.405(a)(1)(iv)			50.73(a)(2)(ii)			<input type="checkbox"/> 50.73(a)(2)(viii)(B)			
			20.405(a)(1)(v)			50.73(a)(2)(iii)			<input type="checkbox"/> 50.73(a)(2)(ix)			

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Thomas R. Bradish, Compliance Manager	AREA CODE 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)

On June 20, 1990 Palo Verde Unit 1 was in Mode 3 (HOT STANDBY) with the Reactor Coolant System at approximately 565 degrees Fahrenheit and 2250 pounds per square inch absolute when at approximately 0940 MST six steam bypass control valves (SBCVs) opened while being returned to service resulting in a main steam isolation signal (MSIS) being generated on high steam generator level. All equipment responded as designed to the MSIS engineered safety feature actuation signal. Reactor operators controlled steam generator pressure with atmospheric dump valves. The MSIS was reset at 1005 MST.

The MSIS was caused by the test procedure being inadequate for returning SBCVs to service. The test procedure has been revised and the event will be reviewed by operations personnel.

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: 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.

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

I. DESCRIPTION OF EVENT

A. Initial Conditions:

Palo Verde Unit 1 was in Mode 3 (HOT STANDBY) following a refueling outage with the Reactor Coolant system (RCS)(AB) at approximately 565 degrees Fahrenheit and 2250 pounds per square inch absolute (PSIA).

B. Reportable Event Description

Event Classification: Engineered Safety Feature (ESF) Actuation.

On June 20, 1990 at approximately 0940 MST six (6) steam bypass control valves (SBCV)(JI)(PLV) opened while being returned to service. This caused the water level in the steam generator (SG)(SB) to swell resulting in a main steam isolation signal (MSIS)(JE) on high water level in SG Number 2. The main steam isolation valves (MSIV)(ISV) closed as designed. SG pressure was controlled with the atmospheric dump valves (ADV)(PLV) and SG level was controlled by manual starting of an auxiliary feedwater (BA) pump (P).

Prior to the event, on June 19, 1990 SBCVs dynamic response time testing was being performed in accordance with approved plant procedures. As part of normal post refueling outage testing on June 20, 1990, six of the eight SBCVs were being returned to service in accordance with the test procedure. A maintenance technician (utility, non-licensed) removed the test signals at approximately 0937 MST. A Control Room operator (utility, licensed) then placed the Steam Bypass Control System (SBCS)(JI) Emergency Off/Reset switch (HS) in emergency off. This prevents SBCV operation. The maintenance technician then transferred the SBCS mode selector switch from test to operate. This placed the SBCS in service. The Shift Supervisor (utility, licensed) and Control Room operator noted that the manual/auto (M/A) controller (HIC) for the six SBCVs had demand signals. The Control Room operator and Shift Supervisor assumed that the procedural steps being adhered to allowed for the situation and that no further actions were required because the demand signals present would quickly decay when the system was reset. In order to balance the plant heat load, the reactor operator placed one SBCV M/A controller in manual and set a demand of approximately 12 percent. At approximately 0940 MST on June 20, 1990 the Control Room operator placed the SBCS Emergency Off/Reset switch in Reset. The

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

six SBCVs in service opened per individual demands from 9 percent to 100 percent. This caused SG water levels to swell and subsequently an MSIS signal was generated on high water level in SG number 2. As a result the MSIVs closed as required. SG pressure was controlled with the ADVs. SG level was maintained as needed by manual operation of an auxiliary feedwater pump.

At approximately 0954 MST Control Room personnel (utility, licensed) completed MSIS actuation verifications. All equipment actuated as designed except the Safety Equipment Actuation Status (SEAS) panel (IB)(PNL) indicated that the position was incorrect for three containment isolation valves for the steam generator sampling system (KN)(ISV). SEAS provides centrally located, alternate indication for plant safety equipment that does not actuate as required. This allows Control Room personnel to quickly assess the status of actuated safety equipment. The position of the sampling system valves was verified to be correct using alternate Control Room indication. The MSIS was reset at approximately 1005 MST. The MSIVs were opened at approximately 1120 MST.

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

Other than the SBCVs described in I.B., there were no structures, systems, or components inoperable at the start of the event which contributed to the event.

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

Not applicable - there were no component or system failures.

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

Not applicable - there were no equipment failures.

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

Not applicable - there were no component failures.

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

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

Not applicable - there were no equipment failures.

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

There were no component or system failures. The procedural error which resulted in this event was discovered during the PVNGS post event investigation conducted in accordance with approved procedures.

- I. Cause of Event

The MSIS was caused by an inadequate procedure (SALP code D). The SBCV dynamic response time test procedure did not have sufficient guidance for the Manual/Auto controller settings when returning SBCS to service. The event was not the result of a cognitive personnel error or a failure to follow procedures. There were no unusual characteristics of the work location which contributed to the event.

As described in section I.B, the secondary sampling system containment isolation valves were verified to have operated properly. An approved work authorization document has been issued to investigate the cause of the erroneous SEAS indication.

- J. Safety System Response

All MSIVs closed on receipt of the MSIS. An auxiliary feedwater pump was manually started in order to maintain SG level.

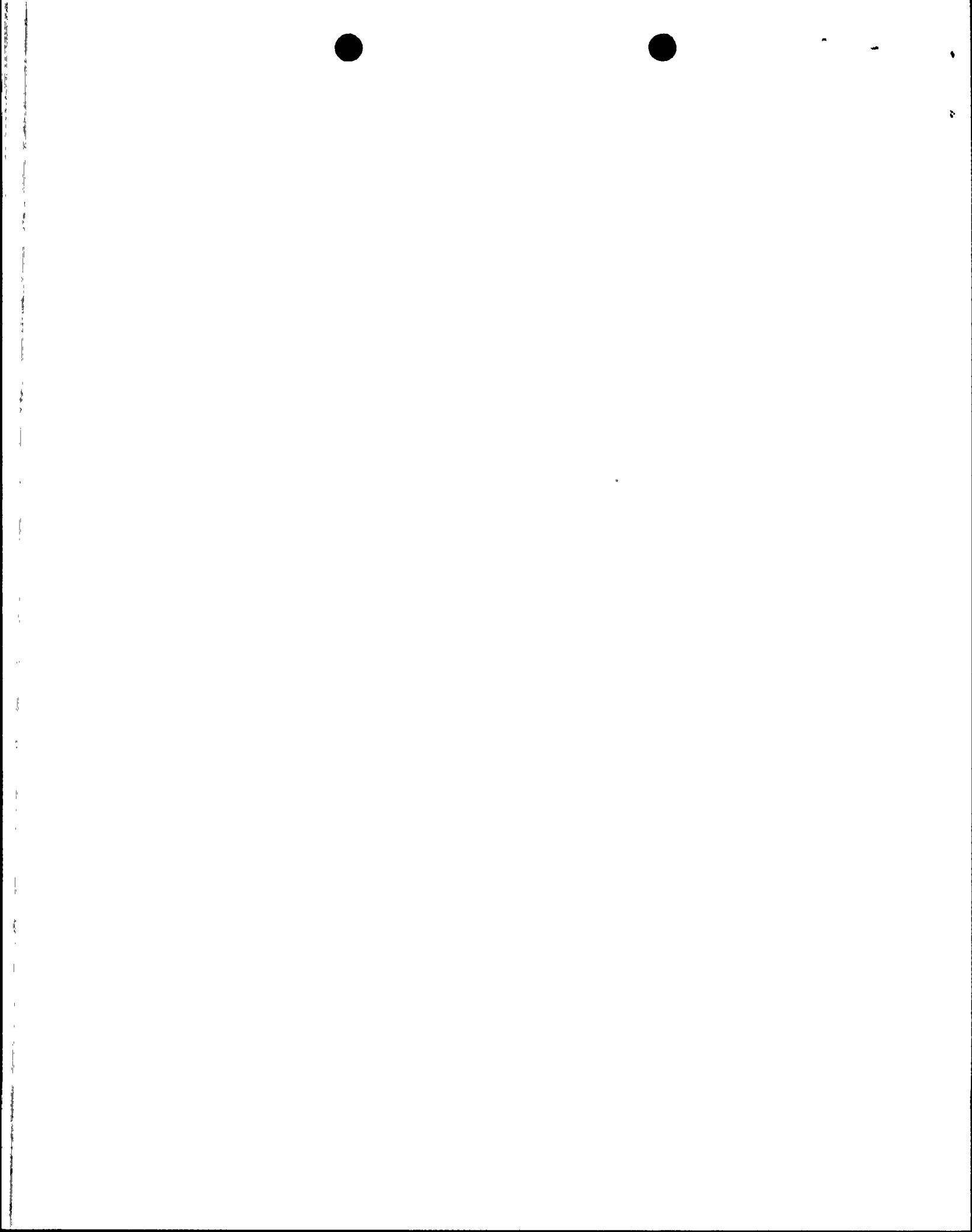
- K. Failed Component Information

Not applicable - there were no failed components.

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

There were no adverse safety consequences or implications resulting from this event.

Unit 1 was in Mode 3 with all control rods (AA) inserted and the reactor trip switchgear breakers (BKR) open at the time of the event.



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)

Therefore, this event did not result in any power perturbations. The MSIS signal was generated with SG number 2 level at approximately 89 percent on the narrow range level control (LC) indications which was within the Technical Specifications required trip setting of less than or equal to 91 percent on the narrow range. All equipment responded to the event as designed. RCS pressure was maintained between 2189 PSIA and 2250 PSIA. The secondary side pressure was maintained between 1100 PSIA and 1160 PSIA. Therefore, this condition did not adversely affect plant safety or the health and safety of the public.

III. CORRECTIVE ACTION

A. Immediate:

Required equipment actuations were verified and the plant stabilized using ADVs and auxiliary feedwater.

The three sample valves and valve position indicators were verified to operate correctly.

Control Room discrepancy log warning stickers were installed on the SEAS indication for the three sample valves and a work authorization document was initiated to troubleshoot and repair SEAS.

B. Action to Prevent Recurrence

The SBCV Dynamic Response Time Test Procedure has been revised to provide necessary steps for restoring the SBCS. SBCV restoration steps in other procedures have been reviewed and no additional problems identified.

The event will be reviewed by Control Room Operations personnel in all three units with regard to ensuring that any demand signals present on controllers should be matched to desired controller demand prior to resetting controller modes. This will be completed by July 31, 1990.

IV. PREVIOUS SIMILAR EVENTS

There have been previous MSIS events at Palo Verde, however, none involved the operation of SBCVs, or procedural errors. Therefore, recurrence control for these events could not have prevented this event.

