

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9007240316 DOC. DATE: 90/07/17 NOTARIZED: NO DOCKET #  
 FACIL: STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528  
 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 90-007-00: on 900617, safety injection tanks vent valves  
 provided power contrary to Tech Spec requirements.

W/9 ltr.

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NOTES: 05000528

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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

192-00676-JML/TRB/SBJ  
July 17, 1990

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Mail Station Pl-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 90-007-00  
File: 90-020-404

Attached please find Licensee Event Report (LER) No. 90-007-00 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. Gutterman  
INPO Records Center

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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) <div style="text-align: center; font-size: 1.2em;">Palo Verde Unit 1</div>														DOCKET NUMBER (2) <div style="text-align: center; font-size: 1.2em;">0 5 0 0 0 5 2 8 1 OF 0 5</div>										PAGE (3) <div style="text-align: center; font-size: 1.2em;">1</div>									
TITLE (4) Safety Injection Tanks Vent Valves Provided Power Contrary to Technical Specification Requirements																																	
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)												
											N/A										0 5 0 0 0												
0	6	1	7	9	0	9	0	0	0	7	0	0	0	7	1	7	9	0	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) <div style="text-align: center; font-size: 1.2em;">0 0 1 0</div>			20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)																		
			20.405(a)(1)(i)				50.36(c)(1)				50.73(a)(2)(v)				73.71(c)																		
			20.405(a)(1)(ii)				50.36(c)(2)				50.73(a)(2)(vi)				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)(x)																									
LICENSEE CONTACT FOR THIS LER (12)																																	
NAME																		TELEPHONE NUMBER															
T. 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 NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS																							
SUPPLEMENTAL REPORT EXPECTED (14)																		EXPECTED SUBMISSION DATE (15)		MONTH		DAY		YEAR									
YES (If yes, complete EXPECTED SUBMISSION DATE)																																	
<input checked="" type="checkbox"/> NO																																	

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

On June 17, 1990, Palo Verde Unit 1 was in Mode 3 (HOT STANDBY) with the Reactor Coolant System at approximately 565 degrees Fahrenheit and 1750 pounds per square inch absolute.

On June 16, 1990 at approximately 1955 MST, Safety Injection Tank (SIT) '1A' was drained for maintenance and one of its two vent valves energized and opened. The energization of the SIT '1A' vent valve also supplied power to a vent valve on each of the other three SITs. Technical Specifications require the SIT vent valves on OPERABLE SITs to be closed and power removed. On June 17, 1990, at approximately 2120 MST, it was determined the Technical Specification requirements for the vent valves had not been met since one vent valve on each SIT had been provided power. The SIT '1A' vent valve was immediately closed and power removed from the vent valves for each SIT.

The event was caused by personnel error in that the control room operators did not recognize the supplying of power to a vent valve circuit violated Technical Specification requirements in the existing plant conditions.

As corrective action, a precaution on the operation of the SIT vent valves has been incorporated into the SIT operating procedure. The event summary has been provided to operations personnel in all three units.

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

## I. DESCRIPTION OF WHAT OCCURRED

## A. Initial Conditions:

On June 17, 1990, Palo Verde Unit 1 was in Mode 3 (HOT STANDBY) following a refueling outage with the Reactor Coolant System (RCS)(AB) at 565 degrees Fahrenheit and approximately 1750 pounds per square inch absolute (PSIA).

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

Event Classification: A condition prohibited by the PVNGS Technical Specifications Section 3.5.1, "Safety Injection Tanks."

On June 17, 1990, at approximately 1930 MST, it was discovered that the Safety Injection Tanks (SIT) (BP) vent valves (V) were not deenergized as required by Technical Specifications.

On June 10, 1990, as a prerequisite to entering Mode 4 (HOT SHUTDOWN), the SIT vent valves for the four SITs were verified closed and power removed as required by Technical Specifications. Technical Specification 3.5.1.e states: "Each Reactor Coolant System Safety Injection Tank shall be OPERABLE with: ....(e) Nitrogen vent valves closed and power removed." Technical Specification 4.5.1.g requires the status of the SIT vent valves to be verified every 31 days. After entry into Mode 4 on June 13, 1990, the outlet check valve to SIT '1A' was found to have a bonnet leak. The bonnet is sealed with a silver seal O-ring that has sealed in the past as RCS pressure was increased. Therefore, the leakage was monitored as RCS pressure increased. On June 14, 1990 at approximately 1410 MST, Unit 1 entered Mode 3 and continued to increase RCS pressure and temperature. With RCS pressure at approximately 2000 PSIA, the SIT '1A' check valve bonnet continued to leak. In order to disassemble the check valve for repair, SIT '1A' had to be drained and depressurized. Since Technical Specifications require only three (3) SITs OPERABLE with RCS pressure less the 1837 PSIA, RCS pressure was subsequently reduced to approximately 1760 PSIA.

The SIT was drained and vented using operating procedures which used the nitrogen vent valve as the tank vent. Power was provided to the circuit for four SIT vent valves (one vent valve on each SIT) by manipulation of a control room key switch. The vent valve





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to SIT '1A' was opened at approximately 1955 MST on June 16, 1990. In order to maintain the SIT '1A' vent valve open as required by the clearance, the vent valve had to remain energized since the valve fails closed on loss of power.

On June 17, at approximately 1900 MST, the oncoming shift supervisor (utility, licensed) noted the SIT '1B' '2A' and '2B' vent valves were closed but being supplied power. The plant status and Technical Specifications were evaluated. At approximately 2120 MST, it was determined that the unit was not in compliance with Technical Specifications 3.5.1.e. The vent valve to SIT '1A' was immediately closed and power removed from the four SIT vent valves, restoring Technical Specification compliance. The noncompliance with Technical Specifications lasted approximately 25 hours and 25 minutes.

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

Other than SIT '1A' as described in I.B., there were no systems, structures, or components inoperable at the start of the event that 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 failures of components with multiple functions, list of systems or secondary functions, that were also affected.

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

- 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 failures that rendered a train of safety systems inoperable.



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

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

There were no component or system failures or procedural errors. The technical specification noncompliance was discovered by the oncoming shift supervisor during shift turnover.

## I. Cause of Event

The event was caused by cognitive personnel error (SALP Cause Code A). The control room operators (utility, licensed) did not recognize that the supplying power to the SIT vent valves' circuit violated Technical Specification requirements in the existing plant conditions. There were no unusual characteristics of the work location which contributed to the event.

## J. Safety System Response

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

## K. Failed Component Information

Not applicable - there were no failed components.

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

The SITs provide a borated water source to flood the reactor core (AL) in the event of a large line break that depressurizes the RCS to less than 610 PSIA. The SITs ensure a sufficient water volume is available to cool the reactor until the Low Pressure Safety Injection (LPSI) (BP) and High Pressure Safety Injection (HPSI) (BQ) can provide water. Each SIT has two air-operated vent valves with independent flow paths. An electrically operated solenoid is used to actuate the air operator. Two independent circuits supply power to the SIT vent valve solenoids. Each power supply circuit is connected to four SIT vent valve solenoids, one on each SIT. When the control room keylock switch is placed in on, power is supplied to a circuit. The individual vent valves can then be operated using individual hand switches to energize the solenoids.

The manipulation of the keylock switch to one power supply circuit did not effect the closed status of any vent valves on the OPERABLE SITs. The vent valve solenoids were not energized since the individual hand switches were not manipulated. Therefore, this event did not affect the ability of the SIT to perform its safety function. All other Technical



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Specification requirements were met. Therefore, the event had no adverse safety consequences or implications.

## III. CORRECTIVE ACTION

## A. Immediate:

The vent valve to SIT '1A' was immediately closed and power to all vent valves removed when the condition was identified.

## B. Action to Prevent Recurrence:

The event summary was provided to operations personnel in all three units.

A precaution stating that power can only be supplied to SIT vent valves for nitrogen gas pressure control when in Modes 1,2,3, or 4 has been incorporated into the operating procedure.

## IV. PREVIOUS SIMILAR EVENTS

There have been no previous similar events reported pursuant to 10CFR50.73.

