APS

A subsidiary of Pinnacle West Capital Corporation

Palo Verde Nuclear
Generating Station

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10 CFR 50.73

192-01153-DMS/SAB/DGM/DFH
September 15, 2004

ATTN: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS) Unit 1
Docket No. STN 50-528
License No. NPF-41
Licensee Event Report 2004-008-00

Attached, please find Licensee Event Report (LER) 50-528/2004-008-00 that has been prepared and submitted pursuant to 10CFR50.73. The LER reports a condition prohibited by Technical Specification (TS) 3.6.3, that resulted in the loss of the automatic closure function of a single containment isolation valve in a penetration flow path with two containment isolation valves.

In accordance with 10CFR50.4, a copy of this LER is being forwarded to the NRC Regional Office, NRC Region IV and the Resident Inspector. If you have questions regarding this submittal, please contact Daniel G. Marks, Section Leader, Regulatory Affairs, at (623) 393-6492.

Arizona Public Service Company makes no commitments in this letter. The corrective actions described in this LER are not necessary to maintain compliance with regulations.

Sincerely,

DMS/SAB/DGM/DFH/kg

Attachment

cc: B. S. Mallett — NRC Region IV Administrator
N. L. Salgado — NRC Senior Resident Inspector for PVNGS
M. B. Fields — NRC NRR Project Manager

IE22

NRC FORM 366 (7-2001)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Palo Verde Nuclear Generating Station Unit 1	05000528	1 OF 5

4. TITLE

IMPROPER CONTACT CONFIGURATION ON CONTAINMENT ISOLATION VALVE

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
07	19	2004	2004	– 008	– 00	09	15	2004	FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE	1
10. POWER LEVEL	100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

	20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)
	20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)
	20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)		73.71(a)(4)
	20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)
	20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER - Specify in Abstract below or in NRC Form 366A
	20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)		
	20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)		
	20.2203(a)(2)(v)	xx	50.73(a)(2)(i)(B)		50.73(a)(2)(vii)		
	20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)		
	20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)		

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (Include Area Code)
Daniel G. Marks, Section Leader, Regulatory Affairs	623-393-6492

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED			15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO				

16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On July 19, 2004, at approximately 16:18 Mountain Standard Time (MST), Unit 1 was in Mode 1 at 100 percent power, when troubleshooting identified a rotor cam, which actuates a bank of limit switches, on a containment isolation valve (1JHPBUV0004) out of position due to personnel error. The rotor cam was oriented such that the limit switch in this bank would actuate opposite of the desired control logic for the Safety Equipment Actuation Status (SEAS) and Containment Isolation Actuation Signal (CIAS). With valve 1JHPBUV004 in the open position, the valve's CIAS closing circuit was interrupted which would prevent the valve from closing upon a CIAS. The valve was declared inoperable and Unit 1 entered Limited Condition for Operation (LCO) 3.6.3 Condition A, (Containment Isolation) and LCO 3.6.7 Condition A (Hydrogen Recombiner B) and LCO 3.3.10 Condition A (Hydrogen Analyzer B). Valve 1JHPBUV004 was returned to service and declared operable on July 23, 2004 (11:36 MST).

A similar event occurred after Unit 3's seventh refueling outage where the CIAS function of 3JHPAUV0001 was disabled due to an incorrect control wire configuration. The event is documented on LER 99-001-00.

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)*

1. REPORTING REQUIREMENT(S):

APS is reporting this condition pursuant to 10 CFR 50.73(a)(2)(i)(B) as a violation of Technical Specification 3.6.3.

Technical Specification 3.6.3 requires that each containment isolation valve (CIV) be operable in modes 1, 2, 3 and 4 to meet the containment isolation time limits assumed in the safety analysis. From May 24, 2004 at approximately 17:22 MST (after completing maintenance on valve 1JHPBUV0004), to July 19, 2004 at 16:18 MST (entered TS action), containment isolation valve 1JHPBUV0004 did not meet the requirements of TS 3.6.3.

2. DESCRIPTION OF STRUCTURE(S), SYSTEM(S) AND COMPONENT(S):

Containment hydrogen control supply isolation valve (1JHPBUV0004) is an automatic isolation valve designed to close (in approximately 12 seconds) without operator action following an accident. Two CIVs are provided in series such that no single credible failure or malfunction will result in the loss of isolation or containment leakage that exceeds the limits assumed in the safety analysis.

Upon receiving a containment isolation actuation signal (CIAS), the CIVs in the system will isolate the hydrogen recombiner inlet and outlet to containment. The inlet valves also serve as the inlets to the hydrogen purge exhaust unit. (EIIS Code: BD, BB, JM)

3. INITIAL PLANT CONDITIONS:

On July 19, 2004, at approximately 16:18 Mountain Standard Time (MST), Unit 1 was in Mode 1 at 100 percent power.

There were no other major structures, systems, or components that were inoperable at the start of the event that contributed to the event. There were no failures that rendered a train of a safety system inoperable and no failures of components with multiple functions were involved.

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)*

4. EVENT DESCRIPTION:

On May 24, 2004, a preventive maintenance (PM) activity was performed on valve 1JHPBUV0004. During the PM, a rotor cam was reset to meet the PM's instruction criteria for the rotor's "as left condition". The valve was stroke tested using instructions from 73ST-9XI08, "HP Valves - Inservice Test" with satisfactory results. The valve was determined to be operable and returned to service.

On June 10, 2004, while performing routine status display checks, plant operators noticed the Safety Equipment Actuation Status (SEAS) was illuminated even though valve 1JHPBUV0004 was in the closed position as indicated on the valve's handswitch and the Emergency Response Facility Data Acquisition Display System (ERFDADS) computer. After verifying the valve was closed, a work order was generated to troubleshoot and correct the indication problem.

Troubleshooting began on July 19, 2004. A resistance reading on the SEAS contact determined the contact was open when the contact should be closed. Maintenance personnel identified one of the rotor cams, which actuates a bank of limit switches in the motor operator, was approximately one valve hand wheel turn outside of its design setpoint. The cam was oriented such that the limit switch in this bank would actuate opposite of the desired control logic for the SEAS. Additionally, if the valve was in the open position, the valve would not close with a CIAS. The valve was declared inoperable and Unit 1 entered Limited Condition for Operation (LCO) 3.6.3 Condition A, (Containment Isolation) and LCO 3.6.7 Condition A (Hydrogen Recombiner B) and LCO 3.3.10 Condition A (Hydrogen Analyzer B).

This condition has been documented in the corrective action program. The event did not result in the release of radioactivity to the environment and did not adversely affect the safe operation of the plant or health and safety of the public.

5. ASSESSMENT OF SAFETY CONSEQUENCES:

Containment penetrations typically have two isolation barriers. These isolation devices are either passive or active (automatic). In general, two barriers in series are provided for each penetration so that no single credible failure or malfunction of an active component can result in a loss of isolation or leakage that exceeds limits assumed in the safety

analysis. Containment isolation valves form part of the containment pressure boundary and are designed to close on an automatic isolation signal. The Design Basis Accidents that result in a release of radioactive material within containment are the Loss of Coolant Accident (LOCA), a Main Steam Line Break (MSLB), a feedwater line break, and a control element assembly ejection accident. In the analysis for each of these accidents, it is assumed that CIVs are either closed or function to close within the required isolation time. The specific equipment that is isolated by 1JHPBUV0004 is the B Train hydrogen recombiner, containment hydrogen monitor, and hydrogen purge exhaust.

This equipment is designed for post-accident conditions and returns the effluent back to containment. Therefore, there is not a concern with a potential unmonitored radioactive release pathway. The indicated position for both containment isolation valves 1JHPBV0002 and 1JHPBUV0004 was the closed position from May 24, 2004 to July 19, 2004. Although the potential existed for 1JHPBUV0004 to be opened, the inboard containment isolation valve, 1JHPBUV0002, was operable and capable of isolating the containment penetration during a CIAS condition. Therefore, the safety impact for this event was minimal in that the system design and station procedure controls were in place to isolate the system to mitigate the consequences of radioactive material release.

There were no actual safety consequences as a result of this condition, the condition would not have prevented the fulfillment of the safety function, and the condition did not result in a safety system functional failure as defined by 10 CFR50.73 (a) (2) (v).

6. CAUSE OF THE EVENT:

The cause of the event is personnel error during the setting of the limit switches on the motor operator following maintenance on May 24, 2004. Additionally, the surveillance procedure (73ST-9XI08) used to determine operability only verified the closure time of valve 1JHPBUV0004 and did not verify the CIAS function required by the motor operator valve program.

No unusual characteristics of the work location (e.g., noise, heat, poor lighting) directly contributed to this event.

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)*

7. CORRECTIVE ACTIONS:

Contact configuration was corrected on July 23, 2004 (11:36 MST), and valve 1JHPBUV0004 was declared operable. Based on the preliminary results from the investigation the following corrective actions have been taken or are planned to prevent recurrence:

- PM Task will be changed to specify retest as required by 39DP-9ZZ04, "Valve Service Maintenance – Motor Operated Valves", which requires the verification of the contact configuration and light indication with the valve stroke test.
- Training will include this event during the quarterly Industry Events for Maintenance Personnel.
- Operator Requalification Training will include this event during simulator cycle 5 training.
- Engineering will evaluate moving the contact function for SEAS and CIAS from rotor 1AS3 to 1AS6 to reduce the potential for configuration errors.

Any additional corrective actions taken as a result of the investigation of this event will be implemented in accordance with the APS corrective action program. If information is subsequently developed that would significantly affect a reader's understanding or perception of this event, a supplement to this LER will be submitted.

8. PREVIOUS SIMILAR EVENTS:

A similar event occurred after Unit 3's seventh refueling outage where the CIAS function of 3JHPAUV0001 was disabled due to an incorrect control wire configuration. This event is documented on LER 99-001-00.

9. ADDITIONAL INFORMATION:

None.